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THE DIDACTIC GAME-THE EXPERIENCE OF GAMES IN CHILDREN

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Abstract

The game, through the effects produced, is considered to be the basic type of activity at pre-school and young school age, a way to acquire, and to use some abilities. Children invent reality, developing creative thinking and imagination, managing to solve different tasks. By trying to keep in mind the rules of a game they increase their memory by acting according to the rules. They function according to their voluntary activities forming the attributes of will: patience, perseverance, self-control. The game also shapes the character and personality traits: respect, responsibility, honesty, courage, fairness, or perhaps their opposites. The game develops the personality of the child by creating and progressively solving the contradictions between: the freedom of action and the restriction of the rules, initiative, creativity and imitation, real and fictional worlds, between using real objects – the concrete, and symbols – the abstract, between the skills' level and the desire to master them at a higher level, the aspirations of the child and the limited possibilities of fulfilment. In early and middle childhood, the game engages at different levels: psychomotorial, sensorial, intellectual, affective and creative, supporting the child's mental development. Learning, work and creation derive and grow from games.

Keywords: Game, creativity, childhood.

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1. Introduction

The problem of the game has, over time, been dealt with by specialists from different fields of knowledge such as philosophers, psychologists, pedagogues, anthropologists, doctors, sociologists, etc. who have researched and explained the formative valences of the complexity of play activities as a didactic method but also of the experience of the game. "Play is life itself," the game is “the first school for social life that prepares the future, quenching the needs of the present” (Claparede, 1975, p.165). What the game gives the child at the right time, remains a precious acquisition for life. This can be both work and art, reality and fantasy for a child.

During AVAP (art) lessons, the didactic game, the experience of playing games, has a great formative value, as through it the pupils try both their drawing skills and those of finding various possible solutions for the realization of a plastic theme. The game confronts the students with new situations that they need to solve, proving they have initiative spirit, fantasy, imagination, will, spontaneity. By organizing plastic activities in the form of games (sensory games), students are given the opportunity to develop their creativity, to assert their personality as a whole, enjoying both the pleasure of the game and a certain inner state of self-affirmation, becoming active, experimenting through the game, being more than just spectators.

The sensory didactic game is the form in which all the contents of this research get colour and contour. Sensations and perceptions, “the relationship between colour and the apperceptive background, the relationship between colour and shape, the relation between colour and taste of food, the relationship between colour and ambience, the relationship between colour and sound, and the relationship between colour and poetry” (Golu & Dicu, 1974, p.21-22), all make us think of the interactions with other arts and disciplines (music, literature, dance, theatre, film etc.). These are tangential to the chosen theme, to the tasks of the students and have a major importance in the weighing of the results.

1.1 Artistic-plastic skills

The special skills of the students participating in the experiment lead to better results in intensity and quality and will have a positive impact upon their creative personality. All students participating in this experiment have their skills tested in the Musical Education-TSD subject. The sample is chosen on purpose because the pupils have artistic and musical skills tested at the age of 6-7, in the admission exam in vocational primary education, that includes the following specific musical skills: voice, hearing, auditory perception, thinking and musical memory (the melodic, rhythmic and harmonic senses). Artistic skills say Anucuța and Anucuța, (2005), are “instrumental structures of the personality that ensure the achievement of superior average performances in particular branches of professional activity” (p.20). Thus, artistic skills have an influence in literature, music, painting, sculpture, theatre, acting, etc. By analogy, I assume that some students will demonstrate certain artistic and plastic skills. The question, "What colour was this music?" would seem like a strange question, but there are people for whom the answer is obvious. Such people have a neurological capacity called "synaesthesia = sound + colour" or "chromesthesia", through which, without the slightest effort and spontaneously, they live their own show of lights while they hear music or other sounds.

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1.2. Artistic and plastic creativity

Creativity is accomplished through creation, and creation is accomplished through all phases of the creative process. “To create means to make, to bring to life, to cause, to generate, to produce, to be the first to interpret the role and to give life to a character, to compose quickly etc. Creative is the one that is characterized by originality and expressiveness, is imaginative, generative, road opener, inventive, innovative, etc." (Cioca, 2007, p.13). Creativity crosses over the limits of education sciences as an interest, being an existential problem in modern society, an interdisciplinary and cross-curricular problem.

“The game of art’ is available to both trainers and trainees and it has double value” says (Cioca, 2007, p.9). To develop the artistic and plastic creativity of schoolchildren through the didactic-sensory games, we must highlight the role of plastic language elements and especially the role of colour. In this case, the colour has a plastic language function which means that through chromatic and nonchromatic tones semantic, aesthetic and emotional information can be consolidated, expressed and communicated. The meanings of colours, the sensory reactions caused by the force of colour also trigger psychic effects with deep implications in the human affection. Thus, “the chromatic effects will be guided according to their thinking and state, they will guide them in order to convey an idea, a feeling or a more or less explicit human message” (Lăzărescu, 2009, p.60-61). The understanding of art also requires creation: “in order to receive art is not enough to truly relive the emotion that stirred the author, nor is it enough to understand the structure of the work itself - but you must creatively overcome your own emotion, find its catharsis, and only then will the action of art be manifested in its entirety" (Vîgotski, 1973, p.318).

Table 01. The perspective of the concepts involved

Didactic game-the experience of game in children	Getting to know the reality through colour	Artistic-plastic creativity quantitative evaluation	Artistic-plastic creativity qualitative evaluation	Visual-plastic creativity	Skills for plastic art
Sensorial Touch / Thermal Game	Impressiveness of colours	Fluidity	Emotional expressiveness	The creator (the pupil) or intrapsychic reality (intellectual and personality factors	Storing visual forms and reproducing them in the drawing
Sensorial Taste Game	Colour expressiveness	Flexibility	The degree of complexity of the drawing	Sensitive reality (environment, objects, beings, relationship with nature);	The spirit of observation
Sensorial Smell Game		Originality	Movement and action in the drawing	The abstract reality (specialized information, treaties, theories from books, magazines, films etc.)	Imaginative memory
Sensorial Auditive Game		Elaboration	Title expressivity	The imaginary (archetypes, myths, legends, dreams)	Working with shapes and images in mind
Sensorial Visual Game			Internal visual perspective	Plastic language: plastic language elements, plastic language tools, plastic techniques, original plan and virtual cube	The accuracy of the hand movement
			The richness of the imagination	Creation - product, opera, plastic fact	Combining elements of perception in new images

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			Speed of creative engagement		Color differentiation
			Emotional expressiveness		Visual perception of differences in dimensions
					Visual acuity
					Emotional sensitivity

The impressiveness and expressiveness of colours - the effects of colours, namely the quantity and quality of information brought to man by colour, can be difficult to quantify. In this respect, Torrance (Torrance Tests of Creative Thinking. Scholastic Testing Service, 1974), in the Creative Thought Tests made up of figurative evidence, manages to quantitatively and qualitatively assess the level of plastic creativity. Quantitatively, creativity is assessed by: originality, flexibility, fluidity, elaboration, etc. The qualitative evaluation of creative performances is based on the following features: emotional expressiveness, complexity of the drawing, movement and action in the drawing, the expressivity of the title, visual imagination, richness of imagination, creative engagement speed, emotional expressiveness.

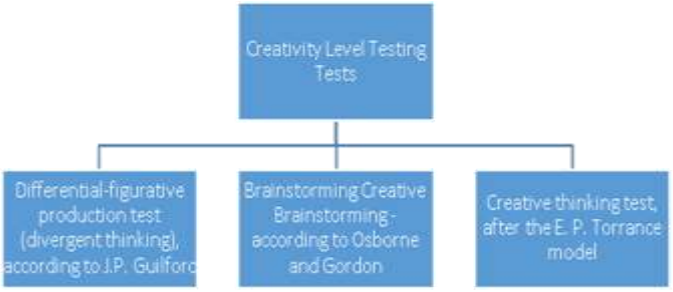

Figure 01. Creativity Level Testing Tests

By conducting these tests, I have been pursuing the measurement of creativity parameters recording two levels (high creativity, low creativity) and the results obtained in the initial testing were compared with those from the final one and the results were interpreted.

2. Problem Statement

The proposed theme researches the development of artistic and plastic creativity through sensorial games - playful activities, the development of the creative potential of pupils with special skills and answers punctually to the following questions:

- What is the creative potential of pupils with special skills - musical skills?
- Do the special skills of the students participating in the experiment lead to better results, in intensity and quality, and will they positively imprint their creative personality?
- Does the socio-cultural climate in which the student grows up and develops, in this case the College of Arts, only influences the formation and affirmation of his creativity or also the manifestation of the creative performances?

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2.1. The need to carry out this study

The necessity to carry out this study is justified in the context of the curricular content approach of the vocational art education in Romania and completed by a series of shortcomings as far as the beneficiaries of education are concerned:

• vocational school students with specific Arts in the Romanian education system are given the initial aptitude test (only musical skills) at the beginning of primary school, pupils' aptitude testing and verification doesn't exist for artistic skills;

• in the Framework Plan (Primary Education) for Vocational Schools with Specific Arts, OMEN Nr. 3371 / 12.03.2013, there is the same number of hours in the AVAP (Art) subject as for the mass schools;

• in the Framework Plan (Primary Education) for Vocational Schools with Specific Arts, OMEN Nr. 3371 / 12.03.2013, there are the subjects Music and Movement and Game and Movement that have school curriculum that is not synchronized with the Vocational-Art needs.

2.2. Research main ideas

- creativity is a complex phenomenon determined by a number of factors (intellectual, personality, social, special skills);
- Strengthening the individual creative potential (specific skills), in order to appropriately valorise talents and cultivate creative attitudes;
- The development of creative potential can be done by encouraging freedom of expression based on active-participatory methods, working techniques, varied strategies;
- By using student-centred learning principles, it is necessary to encourage individual or small group experiments in both joint and chosen activities so that each student can evolve at his/her own pace;

3. Research Questions

The nature of the issues addressed is relatively narrow 'developing the creative potential of pupils with special skills in primary education' with an immediate practical applicability, operating in an inductive way by direct confrontation with reality, but also deductively. Conclusions, generalizations, predictions are formulated by exploring this educational reality. The components of educational action are realized from a systemic perspective and represent the relational teaching-learning-evaluation field. The analysis perspective is interdisciplinary.

3.1. Which are the coordinates of the research?

The approach direction is longitudinally supplemented by a "panel study" with successive measurements at different times. The function is projective-to guide. The level of intentionality is research-action involving a high level of intent and involvement, 'auto reflexive approaches and small-scale interventions in the real world, realized by the participants in the action', deliberately designed, organized and developed. The form of student organization is combined and intensive. The research is carried out on a sample of 25 schoolchildren, using specific research methods. The obtained results are

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confronted and corroborated with those obtained by applying the extensive research methods (specific tests of creativity etc.), recorded in the tables (Table 01, 02 and 03) and figures (Figure 01, 02 and 03) lead to the formulation of the conclusions. The beneficiaries of this psycho-pedagogical research are the school in which I work, the Baia Mare Art College, and the whole primary education segment on the vocational-art branch in Romania.

3.2. The research characteristics

The research characteristics are:

- measuring the creativity parameters before and after the experiment;
- the contribution of the "experimental factor" to the development of children's creative potential.

This research is experimental with a finite purpose and proposes an inductive approach, starting from a given situation and arriving to conclusions and educational decisions, towards a more general objective.

4. Purpose of the Study

The aim of this study is to trigger creative potentials and to develop the creativity of the small pupil, stimulating the individual creative potential (specific skills) in order to make use of their talents and cultivate creative attitudes

4.1. The aims of the research are:

The objectives of the research are a kind of "curricular cuts" from the art, technology, language and communication curriculum areas, each of which contributes through the possibilities offered by its specificity in shaping the overall theme. These are:

• the development of the capacity of plastic, metaphorical expression of feelings of soul experiences, of influences coming from the outside through sensations and perceptions, exploiting the valences of imagination and creativity;

• applying the "didactic game" as a pedagogical method of stimulating creativity;

• applying specific creativity tests, measuring the creativity parameters before and after testing;

• drawing conclusions;

• issuing predictions, the prospect of future proposals.

4.2. The research hypothesis

The freedom of chromatic expression and visual-plastic expressiveness of children in response to certain stimuli (sensations and perceptions) through didactic play-leads to the development of the creative potential of pupils with special skills. This opposes the null hypothesis that freedom of chromatic expression and freedom of visual-plastic expressivity leads to artistic and plastic works subject to chance, hazard, without message, etc. Therefore, strict guidance only, through appropriate and creative teaching methods and strategies, can achieve the expected results.

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5. Research Methods

The psycho-pedagogical experiment consists in testing, verifying the hypothesis, the assumption formulated. The purpose of the experiment is a guided process to investigate the relationships between an independent variable (cause) and dependent variables (effect).

- **The independent variable** is the "cause" that leads to change; in this case the experimental conditions are organized through games, the basic method of all the instructive-educational activities that stimulate creativity is the "The sensory game".

- **The dependant variables** are the performance and the results obtained from the experiment, the artistic and plastic skills discovered during the experiment, the difficulties encountered, the behaviours and attitudes of the students.

5.1. Other methods

(Systematical) observation was used in all stages of the research in order to obtain additional data in relation to various aspects of the investigated phenomena.

The interview - "focus group" the method of direct research in which it is deliberately discussed with the pupils in order to obtain data related to certain phenomena and pedagogical manifestations (facts, behaviours, opinions, desires, interests, aspirations) which are the expression of preferences, emotions, feelings or behavioural intentions. This method was used in the pre-experimental and post-experimental stage. The efficiency of the method is conditioned by the students' sincerity, but also by the flexibility and elasticity (transparency) of the conversation.

The method of analysing portfolios / products of the activity of the subjects of education requires the analysis, both in terms of product and process, from the perspective of certain parameters established in accordance with the purpose and objectives of the research, of the data provided by the components of the learners' portfolio. It is essential that the analysis of students' portfolios should take into account both dimensions of the products, the process of searching, information, research, testing, recording and data analysis, but also the final product, in this case the portfolio with all the work of the experiment.

6. Findings

Upon my completion of the research I found that the sensorial didactic game and the experience of games in children are equally work and art, reality and fantasy. The game is a form of activity specific to children and crucial for their mental development. Under the influence of the game, the creative potential of the child is formed, developed and restructured. The game has a universal human character, being a manifestation in which a fight between contradictions is obvious, an overcoming effort having a role of propelling into the objective process of development.

6.1. The teacher's activity

The entire activity of this research has been designed, conducted, and evaluated over a year and a half. The initial, final and long term testing of the level of creativity was carried out under the name of

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"Musical Landscape". The "Experimental Factor" was introduced as sensory didactic games: The Little Magic Sack, Master Chef, The Magic of Smell, and The Enchanted Ear.

6.2. The students' activity

The students, following the psycho-pedagogical experiment, have associated the sensation or emotion created by sensorial games with a colour or more, with a shape or more, a landscape, making plastically enhanced works from one stage to the next. They responded to the creativity tests, they were motivated to bring the imaginary into the real plan and to develop it, to develop their creative imagination and specific skills. They have expressed their freedom of chromatic and visual-plastic expression in response to certain stimuli (sensations and perceptions) through the didactic game, developing their creative potential.

Table 02. Sensorial Didactic Game - Frequency of Colours

Frequency	Red	Orange	Yellow	Green	Indigo	Blue	Violet	White	Black	Others
χ^2	7,39	8,61	29,26	1,24	2,49	8,85	2,23	3,73	8,32	33,71

I calculated the colour frequency (χ^2) in the four sensory games. For each colour (R, O, Y, G, B, I, Vi, White, Black, Others) I obtained the following values at 3 degrees freedom n = 3 and significance threshold (Bocoș, 2003, Appendix 4), p=10 (6.25), p = 0.05 (7.82) and p = 0.01 (11.34). Regardless of the freedom of chromatic expression or guidance-in stimulating artistic and plastic creativity, the students in this sample have the ability to express themselves artistically also because of their specific skills. After reading χ^2, we observe that of the 10 colour categories (R, O, Y, G, B, I, Vi, White, Black, Others) of the 4 sensorial games in which the "experimental factor" was introduced , 6 colour categories (their frequency), have a χ^2 greater than 6.25 (p = 0.10), which confirms the specific hypothesis. 4 colour categories (their frequency) have values of χ^2 less than 6.25 (p = 0.10). In this case, we cannot say that the null hypothesis is confirmed, because the freedom of chromatic expression is representative of pupils with special skills. In conclusion, this sample has, according to the frequency of colours used in artistic and plastic works, the ratio of 4/10-pupils with special skills, namely 10 pupils out of 25.

The arithmetic average of the results of the colour frequencies in this experiment, the average value of χ^2 = 10,59, demonstrates that students regardless of their skills, must be directed, coordinated in the development of their artistic and plastic creativity. In conclusion, the specific hypothesis of this research is confirmed.

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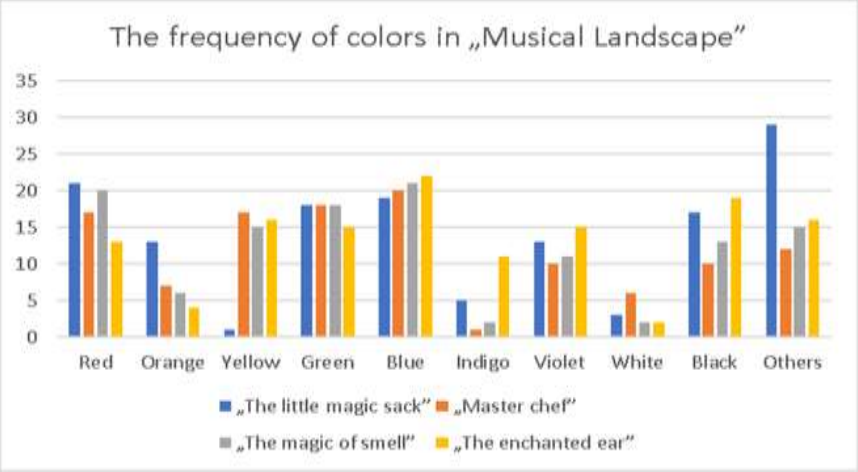

Figure 02. Sensorial Didactic Game Diagram - Frequency of colours

The above diagram (Figure 02) shows the colour frequencies of the four sensorial games

7. Conclusion

At the young school age, the development of artistic and plastic creativity potential, as an act of manifestation, finalized and elaborated in a product of great originality, is only for children endowed with special skills. Following this experiment, it was demonstrated that a significant number of the sample had artistic and plastic aptitudes, 32% of the students were admitted after the entrance examination in the 5th grade at the visual arts specialization at Baia Mare College of Arts in the school year 2016- 2017, namely 8 out of the 10 pupils who demonstrated special artistic and plastic skills during this psycho-pedagogical research. The other two remained in the piano-music specialty of the Baia Mare Art College, a specialization in which they were first tested (musical skills) in the first grade. In conclusion, 1/3 of the students with musical skills also have artistic- plastic skills. From these conclusions, the question arises: How many of the children initially tested with artistic and plastic skills also have musical aptitudes? The answer to this question is the topic of a future research.

7.1. Aesthetic aspect

The behaviours and attitudes of the students, the performance and the results obtained from the experiment, the artistic and plastic skills, the special skills discovered during the experiment, the reactions to different stimuli (visual, tactile, olfactory, taste and auditive), practical works, all marked a considerable evolution , demonstrating the development of the creative potential.

7.2. The utility of the study

This experiment demonstrated that the teacher's intervention in the creative process of the children with musical skills, with all her personality, his mastery and the baggage of the psycho-pedagogical methods used, means an important improvement in the quantity and the quality of their creative potential.

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Table 03. The results of the "Musical Landscape" experiment.

Creativity factors	**Musical Landscape 1 Preexperimental Stage**	**Musical Landscape 2 Postperimental Stage**	**Musical Landscape 3 Remote testing**
Fluidity	11	20	22
Flexibility	10	21	22
Originality	14	21	20
Elaboration	11	24	23

The results of the measured differences in percentages show in the following way: Fluidity increased by 12% at the end of the experiment and after retesting by 8%, Flexibility increases significantly at the end of the experiment, a difference of 28%, and after retesting 24%. Originality shows, in percentages, a not very spectacular increase of 4% at the end of the experiment, and after retesting 8%. Elaboration is the component of creativity that has the most obvious increase at the end of the experiment 36% and after retesting 44%.

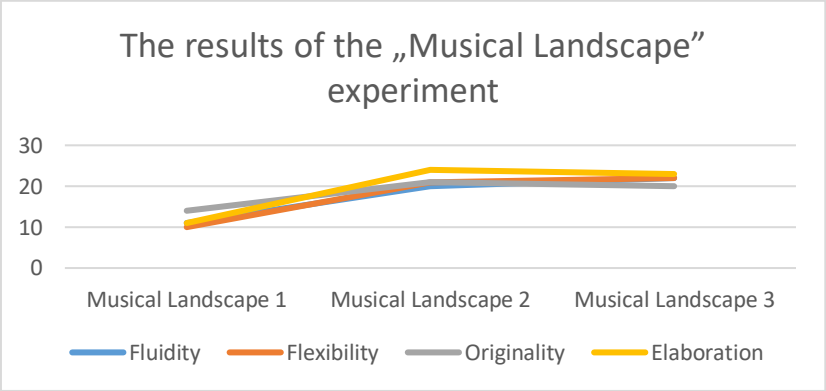

Figure 03. The "Musical Landscape" chart

If the differences between the averages are statistically significant, respectively, if the method of the didactic game leads to the development of creative potential, then one can speak of the stimulation of artistic-plastic creativity. We calculate the average of differences md1 = T1 / N = 20/25 = 0.8 and md2 = T2 / N = 21/25 = 0.84, and we get different results from zero (N = 25). We are going to determine if these averages are significantly different from zero or not. According to the algorithm above, in order to determine t, we must determine the dispersion of the differences. The standard deviation is for the first difference σ2d1 = 0.58, σd1 = √0.58 = 0.76 from where it results that t = 5.33, and the standard deviation for the second difference is σ2d2 = 0.55, σd2 = √0.55 = 0.74 where t = 5.67. In this case, n = N - 1 = 25 - 1 = 24. In the Student table (Bocoș, 2003, Appendix 2) we note that at 24 degrees of freedom, the value of t at significance threshold P = 0.05 is 2.06 and at the significance threshold P = 0.02 is 2.49. The value we calculated is 5.33 and 5.67, respectively, higher than the value in the table (Appendix 2) at the significance threshold P = 0.05 and even from the significance threshold P = 0.02. It means that the null hypothesis can be denied / neglected, according to which the freedom of plastic expression leads to

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artistic and plastic works without message, absurd, subject to chance and hazard. The differences between students' averages are statistically significant and the assumption that the children's chromatic freedom of expression and the freedom of visual-plastic expressiveness in response to certain stimuli (sensations and perceptions) through the didactic-sensorial game leads to the development of the creative potential of the small age pupil is valid.

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