

Measuring Creativity in Visual Arts Teaching Methodology in Elementary School

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Abstract

In the contemporary society, creativity is one of the most desirable abilities which an individual can possess in all the fields of human activity. On the other hand, educational policy and national curriculums marginalize the importance of art subjects in most countries in the world, while the advantage is given to STEM disciplines (science, technology, engineering, mathematics). Although creativity, according to many educational standards, is one of the key abilities, in teaching practice routine activities are still valued more than creative ones. However, it is the art subjects which develop creativity (constructive) potential within an individual, although this also heavily depends on a teacher/professor, on his/her methodological approach and abilities within the scope of professional activity. Therefore, we conducted empirical research in Visual Arts Teaching Methodology training and non-training primary schools. We expected that we would foster students' development of creativity through regular collaboration with university, problem-based learning of art and artistic language, inventiveness in creating art assignments and through increasing public awareness of harmfulness of stereotypical artistic expression. Among a large number of verified tests of creativity, Urban-Jellen's test "The Test for Creative Thinking - Drawing Production (TCT-DP)", which is based on the activity of drawing, was selected and used in this study. We wanted to know whether there was a statistically significant difference between training and non-training schools in students' performance on the test used to examine the level of creativity. The level of statistically significant difference between the control group and the experimental group was determined by a chi-squared test. The research has been carried out in elementary schools in the area of the city of Zagreb, on the sample that included the students of fourth and eighth grade. The results of the research indicate that there is a possible influence of collaboration

between the mentors and university professors and students of teacher-training college within the scope of Visual Arts Teaching Methodology course on students' creativity.

Key words: *collaborative mentoring; creative capacity; problem-based teaching; stimulation of creativity; visual arts.*

Introduction

What is Creativity?

Anyone who wants to test creativity first must have a definition for it. In the text “The nature of creativity as manifest in its testing”, Torrance (1988) establishes that creativity defies precise definition; however, many different definitions of creativity (and their different approach) still demonstrate some common features. One such feature is the creation of something new, originality. This created novelty can have different levels; from the novelty intended for society as the highest level to the novelty intended for an individual who is thinking up a solution to a problem. Also, the novelty can be in artistic, mechanical and theoretical form, and it has to have quality (all that is new is not necessarily creative). Another feature of creativity is that it is the opposite of conformism. Creativity includes original ideas and new ways of viewing a problem, while conformism includes commonness, which is doing what others are already doing. Besides the previously mentioned, there are two more elements which are common to different definitions: “1. a creative individual *perceives*, sees, experiences, combines things and phenomena in a new, fresh, unusual way; 2. A creative individual *produces* new, unusual, different ideas and works” (Čudina-Obradović, 1990, p. 51). According to Barron (1988, as cited in Arar & Račka, 2003), creativity is the ability to produce new and appropriate works. New works are the ones that are original and that cause a surprise with the observers of the works, and the appropriate work is the one which is of good quality and which is considered to be significant for solving an important issue. Amabile (1996, as cited in Bledow, Rosing, & Frese, 2013) defines creativity as a process of developing new and useful ideas, and it can be stimulated with specific incentives. Therefore, in order to preserve his/her special quality and develop creativity, an individual needs appropriate incentive, but also social support, and a significant part of that support should be provided by educational institutions.

In a modern society, creativity represents one of the key words in recommendations on the development of national curriculum and education reforms, in which case the development of creativity is considered to be an important goal of education because creative thinking leads towards the development of new ideas and possibilities, practical testing of ideas and the investigation of borders of reality and imagination (Chávez-Eakle, 2009). The stimulation of creative expression that is creativity is an important competence in national curriculums of many European and non-European countries which tend to develop with students because, due to the changes on the labor market, repetitive jobs are no longer required. Conversely, the employees are required to show creative approach in solving issues and organizing innovations

intellectually (Johnson, 2015). However, educational policy in different countries of the world, as well as in the Republic of Croatia, gives preference to the so called STEM disciplines (science, technology, engineering, mathematics) over art subjects, which are marginalized even in terms of the number of art lessons, which is brought down to the minimum. The consequence of such treatment of art is reflected in the development and the stimulation of creativity and giving support to creative students, because art subjects are the ones that develop creative potential in students. In that respect, it causes contradiction because, on the one hand, creativity is a desirable characteristic which an individual should have after finishing his/her education. On the other hand, educational system does not do much to stimulate the development of creativity. In other words, social needs for creativity are increasingly growing and the role of school in the development of creativity is less and less clear (Maksić, 2006).

The notion of creativity was first studied in the middle of the twentieth century under the leadership of a psychologist Joy Paul Guilford. Guilford makes the distinction between convergent and divergent thinking, where divergent thinking is the basics of creativity, that is, a more creative person will have more developed divergent thinking. Nevertheless, convergent thinking is even more necessary for creativity.

Guilford predicted six factors of creativity, four of which belong to divergent thinking, and two of which belong to convergent thinking (Kvaščev, 1981). Divergent factors are:

- 1 Flexibility – fast tracing of as many relevant solutions/answers as possible;
- 2 Fluency – naming as many categories as possible, that is, types of solutions/answers;
- 3 Originality – production of rare and completely new ideas, unusual solutions;
- 4 Elaboration – an ability to make ideas more appealing by adding details.

Apart from the above mentioned factors, convergent factors are also important for the development of creativity:

- 5 Problem sensitivity – an ability to recognize imperfection or improvement;
- 6 Redefining – an ability to abandon old methods of interpretation of familiar subjects.

With regards to talented children, Ellen Winner says:

These children often create rules within the activity itself and create new, unusual ways of solving issues independently. This means that talented children are, according to the definition, creative, but I want to clearly emphasize the difference between creativity with a small “c” and a big “C”. Talented children are usually creative in the above mentioned sense: they make independent discoveries and solve problems in new and unusual ways, but they cannot be creative with a big “C” because by that I mean the transformation of the field of activity in the same way that Jackson Pollock’s discarding of paintbrush

transformed painting, or in the way 12 musical tones transformed music. Only the adults who have spent at least ten years on mastering certain field of studies can hope to change it forever.” (Winner, 2005, p. 3)

Children have neither knowledge nor experience to be creative in the real sense of the word.

Therefore, Taylor suggested creating levels of creativity (Grgurić & Jakubin, 1996) and categorized creativity into five levels: 1 Creativity of spontaneous activity (1 – 6 years); creativity of designated activity (7– 10 years), creativity of invention (11 – 15 years), creativity of innovation (16 – 17 years), and creativity of creating (18+). When compared to the model of Winner, the first four levels correspond to the creativity with a small “c”, and the last levels correspond to Creativity with a big “C”.

Visual Arts Teaching Methodology in Training Schools

Teacher-training faculties are collaborating with schools with the aim to teach students how to use teaching methods in a real classroom environment. These kinds of practices are implemented in schools which have gained the status of training schools, which means that this status has been officially confirmed by the Ministry of Education. Students of teacher-training faculties, accompanied with their teacher trainer, who is an employee at the faculty, attend teaching practice at training schools. This type of teaching is considered to be the closest to the teaching methodology ideal which is proposed by the theory of visual arts teaching methodology. The development of creativity is supported by techniques such as “brainstorming”, popularized by Alex Osborn, or “lateral thinking” (as opposed to “vertical thinking”), proposed by Edward de Bone, which demonstrates thinking as a process that progresses indirectly “by a roundabout way” using distinct associations. In the field of fine arts, the teaching of visual arts, which is implemented in training schools in the city of Zagreb, has two important features: 1 Students are encouraged to avoid routine, that is, stereotypical art figures; 2 Art assignments are based on problem-based teaching. Stereotypical art figures include expression “that has neither originality nor individuality of the author who uses it. Instead, he uses generally assumed, imprudent and inexperienced sign system for communication” (Huzjak, 2000, p. 11). Here, we are referring to stereotypical smiley faces (so called “smileys”), stiff figures with flat arms and legs, a quarter of the Sun in the corner of the paper, birds presented as a line in the shape of script letter “m” or flowers with a round pistil and curved petals. “Children show tendency to develop fixations which are characterized as patterns. They are negative in artistic sense, because they hinder child’s act of creativity by making the pattern repeat” (Grgurić & Jakubin, 1996, p. 54). These kinds of drawings are created when some adults want to show their child how to draw. Belamarić (1986, p. 83) comments on it: “This literally causes a ‘short circuit’ which, with its life logic, interrupts the established processes and the stream of development of child’s consciousness. A child

is required to learn how to imitate patterns which are, from his/her own point of view, vague, strange and dead in essence. It suppresses their inner necessity to express their own view and dissimulates inner processes which must precede artistic expression. In this way, not only does the ability of a child to artistically express him/herself become weaker and even completely disappear, but all cognitive and perceptive functions become weaker". Teachers are to blame for these patterns, not students.

Problem-based teaching promoted during visual arts classes implies that a theoretical art problem is the origin of realization of art assignment. These are concepts such as different types of colors, color contrasts, different types of lines or different kinds of compositions. Concepts should be pointed at and recognized in nature and in society which surrounds us (for example, nature rhythm, rhythm inside of us and around us, etc.). In addition, concepts should be displayed in works of art, in the ones where these concepts are used in "the most readable" and the most noticeable manner, and which are used in the best possible way. The idea that theoretical and practical work intertwine during the process of teaching visual arts is supported by Karlavaris:

"A child must notice artistic shapes in order to enjoy in them. (...) In order to achieve such a clear perception, it is necessary to make distinction between main elements which make up the entire shape – a work of art. Those are lines, colours, masses and their interrelations, and other art elements – all of them are referred to as individual units, as cooperation factors in one totality. (...) Students' attention must be directed towards concrete elements of work, such as, for example, subtle gradations of lines, light, colours, etc." (Karlavaris, 1970, pp. 8-9)

Measurement of Creativity

Since creativity is often regarded as a type of thinking process or as a set of cognitive features, the research of general creativity is most often conducted by using cognitive tests or by tests of personality traits (Arar & Rački, 2003). Among the first tests of creativity was also the one that was established by Guilford, the so called "paper clip test". It is necessary to think of as many uses as possible for an everyday object, for example, "a paper clip". The test measures divergent thinking according to categories: 1 Fluency – the number of functions a person manages to come up with; 2 Originality – how uncommon those functions are ("router restarter" is more unusual than "holds papers together"); 3 Flexibility – how many areas your answers cover (for example, cufflinks and earrings are fashionable accessories so they belong to the same field); 4 Elaboration – the level of details in responses ("it keeps headphones from getting tangled up" is worth more than "bookmark").

McKim's (1972) test of creativity, known as "Circle test" (Figure 1), consists of thirty circles which should be filled with any content in three minutes. McKim (1972) explained that the people's strong need to draw stereotypical *smileys* in circles influenced the creation of the test.

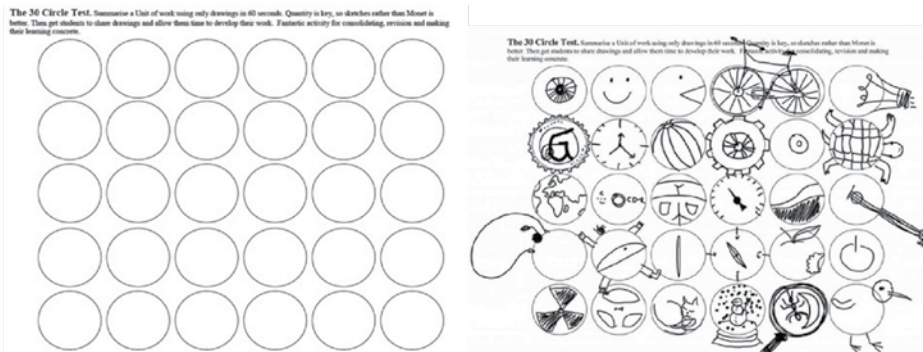


Figure 1. Torrance test of creative thinking (TTCT), empty and filled in



Figure 2. The suggestion of interpretation of "Circle Test" by P. Nilsson

Possible interpretation of this test (Figure 2) was suggested by Nilsson (2012). According to him, Anna has the biggest number of drawings although those are all faces; she has the highest *fluency*.

Benji has the biggest number of different types of responses; he has the highest *flexibility*.

Carol drew wheels and a ball nicely, but she does not get points.

Darlene has only two responses, but she is the only one who has a balloon and a bomb; she demonstrates the highest *originality*.

Edward drew only three faces, but with more details than the others; he has the highest *elaboration*.

Probably the most popular test of creativity was developed by Klaus Urban and Hans Jellen from the University in Hannover, and it is called TCT-DP test (*Test for Creative Thinking – Drawing Production*).

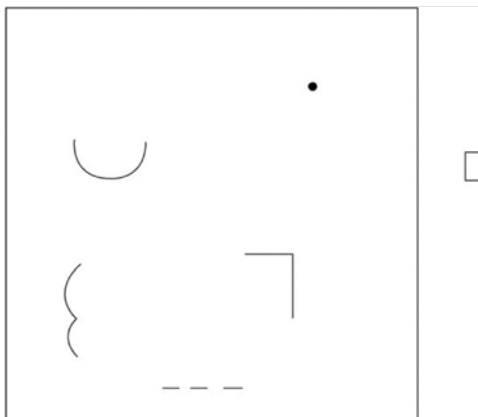


Figure 3. Urban and Jellen (1989, p. 80), TCT- DP test of creativity

The test was developed with the aim of being reliable regardless of the culture where the respondent originates from and to be applicable in different age groups. It can be applied in the population whose age ranges from 5 to 95, and the respondents have 15 minutes to make a drawing. Respondents are required to finish the drawing. Paper for drawing requires a frame and six art elements which serve as a starting point from where the respondents continue creating their own works. Evaluation of drawings is done according to the following 11 criteria (Urban, 2005):

- 1 *Continuations (Cn)*: A respondent uses and extends six art elements;
- 2 *Completion (Cm)*: A respondent fills in the existing art elements with basic art elements such as a line or geometrical shapes;
- 3 *New elements (Ne)*: New shapes, symbols or elements are used besides the existing art elements;
- 4 *Connections made with the line (Cl)*: The line connects elements in the picture;
- 5 *Connection between elements makes the theme of the drawing (Cth)*: The elements are integrated so as to establish a certain theme;
- 6 *Drawing outside the square frame dependent on art element (Bfd)*: Art element which is located outside the square frame is used in a drawing;
- 7 *Drawing outside the square frame independent from an art element (Bfi)*;
- 8 *Perspective (Pe)*: A respondent creates a tri-dimensional picture;
- 9 *Humour and affectivity (Hu)*: The drawing causes humorous response or emotional reaction to the expressions the respondent uses;
- 10 *Unconventionality (Uc)*: It is divided into four criteria: (a) the respondent manipulates the material, that is, the paper, (b) the respondent uses abstract elements or themes, (c) the respondent uses any figures, signs and/or symbols, (d) a respondent does not transform given art elements into conventional elements (for example, s/he does not transform a circle into the Sun);
- 11 *Speed (Sp)*: Time limit is not explicitly given, but time is included in the evaluation process.

Although the exact scale of evaluation is not mentioned, the researchers tend to use a scale from 1 to 6 for the evaluation of each of the mentioned components, and the final result is obtained by summing up all the components (Chae, 2003). The rules of TCT-DP test have been established for the students in Germany, Korea, and Poland on big samples of a few hundred thousands of respondents who belong to different age groups (Urban, 2005). The research has shown that the number of points on the test increases depending on the age up to 11 or 12, after which the results remain relatively constant. That kind of relation between years and marks on the test is consistent with the natural course of development of children's artistic expression, and Urban (2005) considers that the test is a good technique for evaluating the development of children's artistic expression in relation to expected rules.

Urban and Jellen (1989) applied the test in many countries in Europe, Asia, Africa and Northern America, and they proved that test results do not depend on the respondents' culture. The rules of TCT-DP test for students in the Republic of Croatia have not been established yet. Gagić, Japundža-Milisavljević, and Đurić-Zdravković (2015) used TCT-DP test in order to investigate the effect of visual stimulation on the creativity of children with mild intellectual difficulties, and they have demonstrated that creative artistic expression can be increased by using visual stimulation. After seeing the photographs connected to the theme of a drawing, the respondents demonstrated higher level of creativity compared to that measured before visual stimulation. Therefore, the test can be used for measuring artistic creativity in experiments, but the rules of the test for the students of the Republic of Croatia are yet to be established and compared with the rules in other countries.

Objective, Research Questions and Hypotheses

Research Objective

The objective of this research was to determine the influence of the implementation of teaching practice within Visual Arts Teaching Methodology classes in elementary schools - that is, the influence of the implementation of art techniques and problem-based teaching on the stimulation of students' creativity.

Research Questions

- P1: Is there a statistically significant difference in creativity between students of training and non-training schools in the fourth grade?
- P2: Is there a statistically significant difference in creativity between students of training and non-training schools in the eighth grade?
- P3: Is there a statistically significant difference in creativity between students of training and non-training schools in the entire sample of respondents?
- P4: Did the fourth grade students who attend training schools achieve better results in the test of creativity than students who attend non-training schools?
- P5: Did the eighth grade students who attend training schools achieve better results in the test of creativity than the students who attend non-training schools?

P6: Did the students who attend training schools achieve better results in the test of creativity than the students who attend non-training schools, as observed on the entire sample of respondents?

Hypotheses

H1: There is a statistically significant difference in creativity between the fourth grade students attending training and non-training schools.

H2: There is a statistically significant difference in creativity between the eighth grade students attending training and non-training schools.

H3: There is a statistically significant difference in creativity between the students attending training and non-training schools as observed on the entire sample of respondents.

H4: The fourth grade students who attend training schools will achieve better results in the test of creativity than the students who attend non-training schools.

H5: The eighth grade students who attend training schools will achieve better results in the test of creativity than the students who attend non-training schools.

H6: The students who attend training schools will achieve better results in the test of creativity than students who attend non-training school, as observed on the entire sample of respondents.

Methodology

Sample

The research was conducted in six elementary schools in the city of Zagreb, in three training schools for the Faculty of Teacher Education and in three non-training schools. The total sample of respondents was $N = 439$ students, of which $n = 155$ students in training schools, and $n = 284$ students in non-training schools. The total number of fourth grade students was 241 (93 students in training schools, and 148 students in non-training schools), and they were aged between 9 and 10. The total number of eighth grade students was 198 (62 in training, and 136 in non-training schools), and they were all at the age of 13 and 14. The fourth grade was chosen because it is the final grade of the cycle of class teaching, and the eighth grade was chosen because it is the final grade of subject teaching and, at the same time, the end of elementary education. The sample is not representative.

Research Type, Method, Technique and Instruments

The type of the research was both quantitative and transversal. The research method was causal experimental: control (CG) and experimental groups (EG) have been used. Research technique was content analysis and the data collection instrument was Urban and Jellen's (1989) Test for Creative Thinking - Drawing Production (TCT-DP).

Variables

Independent variable was the type of school where the research was conducted - training and non-training school. Dependent variable represented the level of success, that is, achieved points in the test of creativity of a drawing type.

Research Procedure

The research was conducted in spring 2016 by the authors of the research and male and female elementary school teachers. Students received a piece of paper with the copy of standard TCT-DP test template, and the teachers read previously prepared instructions in order to avoid individual differences in giving instructions. The test consists of six given elements (dots and hyphens), and respondents are required to draw anything they want and in the way they want in 15 minutes by using a regular pencil. The drawings are anonymous, and only the grade and the school where the drawing was created were noted down. Scoring was conducted according to the instructions for scoring the test proposed by Jellen and Urban (1989). Scoring was conducted by a three-member team, which consisted of the experts in the field of visual arts teaching methodology: Saša Živković, professor at the Department of Teachers' and Preschool Teachers' Education University of Zadar and the authors of this research - Miroslav Huzjak and Marijana Županić Benić, professors at the Faculty of Teacher Education University in Zagreb.

Data Processing

The tests of creativity were scored according to 11 criteria, by using a 1-6 point scale for each element. All the elements were summed up in the final result, which can be in the range of 11 to 66 points. When all the tests had been scored, they were divided into 6 categories 1) 11-19 points; 2) 20 -28 points; 3) 29 - 38 points; 4) 39- 48; 5) 49 - 57 points; and 6) 58 - 66 points. These categories are used as dependent variables and they are written in the contingency table. The results obtained from the test of creativity were processed using chi-square test (X^2) for testing the independent variable, that is, the significance of group differences in the distribution of data. Online chi-square calculator was used for calculations.

Results and Discussion

For the presented data values (Table 1), X^2 with Yates's correction is 59.837. The number of degrees of freedom is $df=5$, and probability is $P=0.001$. The border for the confirmation of the first hypothesis for $P=0.000$ is 20.515.

Table 1

Contingency table for the fourth grade, indicating the observed and expected frequency

4th grade	Points 1	Points 2	Points 3	Points 4	Points 5	Points 6	Σ
Training	4 (10)	13 (23.2)	24 (34.3)	29 (16.2)	16 (6.56)	7 (2.70)	93
Non-training	22 (16)	47 (36.8)	65 (54.7)	13 (25.8)	1 (10.4)	0 (4.30)	148
Σ	26	60	89	42	17	7	241

Note: the first number is the amount of observed frequency (the number of students in the category with that particular number of points), and the number written inside the brackets is the amount of expected, theoretical frequency.

For the presented values (Table 2), X^2 with Yates's correction is 36.349. The number of degrees of freedom is $df=5$, and probability is $P=0.001$. The border for the confirmation of the second hypothesis for $P=0.000$ is 20.515.

Table 2

Contingency table for the eighth grade, indicating the observed and expected frequency

8th grade	Points 1	Points 2	Points 3	Points 4	Points 5	Points 6	Σ
Training	2 (15)	8 (15.3)	36 (22.5)	12 (6.58)	2 (1.57)	2 (0.939)	62
Non-training	46 (33)	41 (33.7)	36 (49.5)	9 (14.4)	3 (3.43)	1 (2.06)	136
Σ	48	49	72	21	5	3	198

Note: the first number is the amount of observed frequency (the number of students in the category with that particular number of points), and the number written inside the brackets is the amount of expected, theoretical frequency.

For the presented values (Table 3), X^2 with Yates's correction is 87.392. The number of degrees of freedom is $df=5$, and the probability is $P=0.001$. The border for the confirmation of the third hypothesis for $P=0.000$ is 20.515.

Table 3

Contingency table for the total sample, indicating the observed and expected frequency

4th and 8th grade	Points 1	Points 2	Points 3	Points 4	Points 5	Points 6	Σ
Training	6 (26.1)	21 (38.5)	60 (56.8)	41 (22.2)	18 (7.77)	9 (3.53)	155
Non-training	68 (47.9)	88 (70.5)	101 (104)	22 (40.8)	4 (14.2)	1 (6.47)	284
Σ	74	109	161	63	22	10	439

Note: the first number is the amount of observed frequency (the number of students in the category with that particular number of points), and the number written inside the brackets is the amount of expected, theoretical frequency.

Chi-square test demonstrated that the difference between the expected and observed frequencies is so big that there is 99% of probability that this is not accidental, but that the independent variable (the status of school) had an influence on the result of the creativity test.

Based on the result of the chi-square test we conclude the following.

Hypothesis H1: *There is a statistically significant difference in creativity between the fourth grade students attending training and non-training schools has been **confirmed** based on the calculation $X^2 = 59.837$ ($X^2 > 20.515$), $df = 5$, $P < 0.001$, that is, with the level of certainty of 99%.*

Hypothesis H2: *There is a statistically significant difference in creativity between the eighth grade students attending training and non-training schools has been **confirmed** based on the calculation $X^2 = 36.349$ ($X^2 > 20.515$), $df = 5$, $P < 0.001$, that is, with the level of certainty of 99%.*

Hypothesis H3: *There is a statistically significant difference in creativity between the students of training and non-training schools as observed on the entire sample of respondents has been **confirmed** based on the calculation $X^2 = 87.392$ ($X^2 > 20.515$), $df=5$, $P < 0.001$, that is, with the level of certainty of 99%.*

We have concluded that there is a statistically significant difference between training and non-training schools with reference to the level of creativity of their students. With

the aim to test which students were more successful in solving the test of creativity, arithmetic means of the achieved scores (\bar{x}) were calculated (Table 4).

As mentioned earlier, for the sake of easier calculation, earned points in TCT-DP test were divided into six categories: from “points 1” to “points 6”. If, for example, in the training group of the fourth grade, twenty four students (out of 93 students) had entered the category “points 3”, then 24 would have been multiplied by three points, which equals 72 (24x3 points=72) (Table 4, the first line).

Table 4

Achieved points in the test and arithmetic means according to age and students' attending training/non-training school

Group	n	Points 1	Points 2	Points 3	Points 4	Points 5	Points 6	Arithmetic means \bar{x}
T 4th grade	93	4	26	72	116	80	42	3.66
NT 4th grade	148	22	94	195	52	5	0	2.49
T 8th grade	62	2	16	108	48	10	12	3.16
NT 8th grade	136	46	82	108	36	15	6	2.15
T 4th and 8th grade	155	6	42	180	164	90	54	3.46
NT 4th and 8th grade	284	68	176	303	88	20	6	2.33

Note: T stands for training, and NT stands for non-training groups.

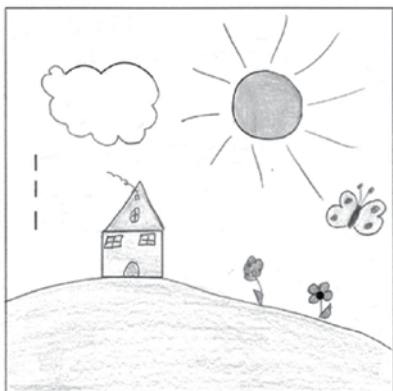
From the presented values it can be observed that the achieved arithmetic means in training schools are higher than the arithmetic means in non-training schools, at all levels - fourth grade, eighth grade and the entire sample of respondents.

We conclude:

Hypothesis H4: *The fourth grade students who attend training schools will achieve better results in the test of creativity than the students who attend non-training schools* has been **confirmed**.

Hypothesis H5: *The eighth grade students who attend training schools will achieve better results in the test of creativity than the students who attend non-training schools* has been **confirmed**.

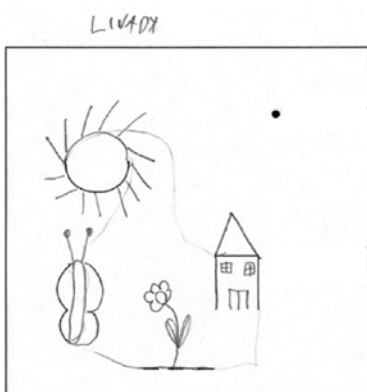
Hypothesis H6: *The students who attend training schools will achieve better results in the test of creativity than the students who attend non-training schools, as observed on the entire sample of respondents* has been **confirmed**.



ZALAZAK SUNCA

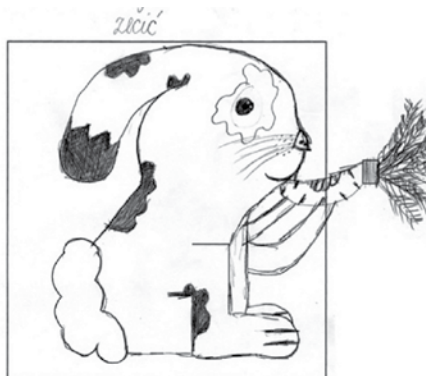


4th grade, non-training school, points 1, work 1
Title: Sunset

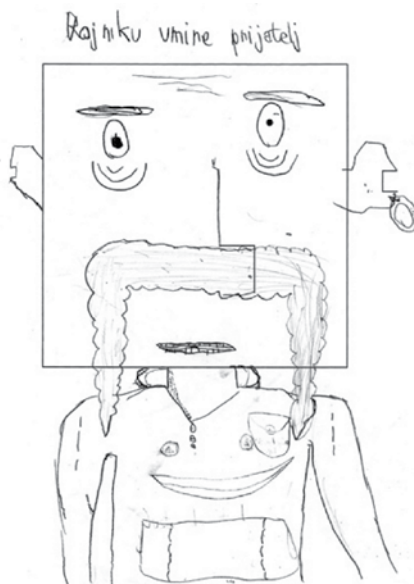


LIVADI

4th grade, non-training school, points 1, work 3
Title: Meadow



4th grade, training school, points 6, work 2
Title: Bunny



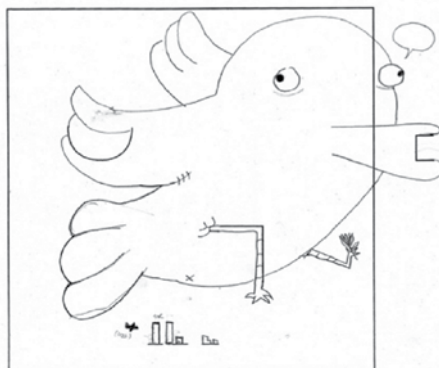
4th grade, training school, points 6, work 4
Title: A soldier's friend is dying

KUĆA U PRILU



8th grade, non-training school, points 1, work 5
Title: A house surrounded by nature

KAKO UBIT PTICU
BLAGUŠU



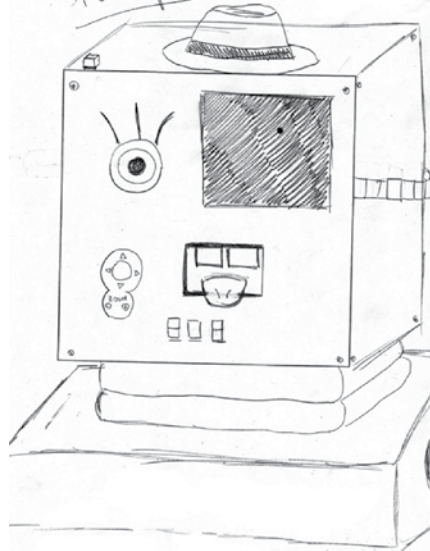
8th grade, training school, points 6, work 6
Title: How to kill a mocking bird



LUKA

8th grade, non-training school, points 1, work 7
Title: Luka

Fotoaparat (Bob)



8th grade, training school, points 6, work 8
Title: Camera "Bob"

In order to compare the tests which were successfully and those which were not so successfully performed, the extremities of the quality were chosen so as to achieve better visibility of criteria. In the category of tests that were not so successfully performed are the ones from the lowest group “points 1”, that is, the ones in the range of 11-19 points; in the category of tests that were successfully performed, the ones from the highest group - “points 6” were chosen, that is, tests in the range of 58 - 66 points. It can be observed that the tests initiating the lowest level of creativity are solved in almost the same way: the basis of the drawing is imitation - it lacks any form of originality, only the simple, first associations are used, based on usual stereotypical images of a house, a bird, a butterfly, a cloud, the Sun with its rays and “flowers” (works 1, 3, 5 and 7). Overall, the number of drawings which were all made in the same way, with the minimum effort and the maximum of stereotype, is surprisingly big. They do not come out of the square frame. The drawings in the test that were created by the eighth grade students and which belong to the category of drawings that were not performed so successfully are not much different in quality from the drawings made by the fourth grade students.

On the other hand, a small number of drawings which earned maximum points show a high level of inventiveness and unusualness (high level of originality). Each work contains different type of artistic answer (high flexibility) and distant associations (high fluency). They all come out of the square frame; outer element is fit into a drawing. At some places, the whole paper has been used (works 4 and 8). In most drawings, the given art elements are interconnected and they fit into the drawing in such a way that it is difficult to find them. Many new elements have been added, and all of these drawings abound with multiple details (high elaboration), shapes overlap on each of them, and on the work 8, geometrical perspective can be seen. Students put an effort to make these drawings, and the name of the work 4 “A soldier’s friend is dying” belongs to the category which we would not expect from the student of that age.

Conclusion

We conclude that the status of a training school, that is, regular collaboration with the faculty, through problem-based teaching, through inventiveness in creating art assignments, and through increasing public awareness about the issue of harmfulness of stereotypical artistic expression, has a positive impact on the development of creativity among students. Reliability of this research would be higher if it was conducted in more schools and on a bigger sample, which is the guideline for future research of this type.

References

Belamarić, D. (1986). *Dijete i oblik. Likovni jezik predškolske djece*. Zagreb: Školska knjiga.

- Bledow, R., Rosing, K., & Frese, M. (2013). A dynamic perspective on affect and creativity. *Academy of Management Journal*, 56(2), 432-450. <https://doi.org/10.5465/amj.2010.0894>
- Chae, S. (2003). Adaptation of a picture-type creativity test for pre-school children. *Language Testing*, 20(2), 179-188. <https://doi.org/10.1191/0265532203lt251oa>
- Chávez-Eakle, R. A. (2009). Creativity and personality. In E. Villalba (Ed.), *Measuring creativity* (pp. 245-257). Luxembourg: Publications Office of the European Union.
- Čudina-Obradović, M. (1990). *Nadarenost. Razumijevanje, prepoznavanje, razvijanje*. Zagreb: Školska knjiga.
- Gagić, S., Japundža-Milislavljević, M., & Đurić-Zdravković, A. (2015). Examples from visual surroundings as an incentive for children with mild intellectual disability to express their creativity in the art domain. *Hrvatski časopis za odgoj i obrazovanje*, 17(Sp.Ed.3), 41-64.
- Grgurić, N., & Jakubin, M. (1996). *Vizualno-likovni odgoj i obrazovanje*. Zagreb: Educa.
- Huzjak, M. (2000). *Učimo gledati 1 - 4. Priručnik Likovne kulture za nastavnike razredne nastave*. Zagreb: Školska knjiga.
- Jellen, H. G., & Urban, K. K. (1989). Assessing creative potential world-wide: The first cross-cultural application of the Test for Creative Thinking-Drawing Production (TCT-DP). *Gifted Education International*, 6(2), 78-86. <https://doi.org/10.1177/026142948900600204>
- Johnson, D. (2015). *Teaching outside the lines: Developing creativity in every learner*. CA: Corwin: Thousand Oaks.
- Karlavaris, B. (1970). *Estetsko procjenjivanje u osnovnoj školi*. Beograd: Umetnička akademija u Beogradu.
- Kvašček, R. (1981). *Psihologija stvaralaštva*. Beograd: Zavod za udžbenike i nastavna sredstva.
- Maksić, S. (2006). *Podsticanje kreativnosti u školi*. Beograd: Institut za pedagoška istraživanja.
- McKim, R. (1972). *Experiences in Visual Reasoning*. Monterey, CA: Brooks/Cole Publishing Company.
- Nilsson, P. (2012). Four Ways to Measure Creativity. *Sense and Sensation. Writing on Education, Creativity, and Cognitive Science*. Retrieved from <http://www.senseandsensation.com/2012/03/assessing-creativity.html>
- Torrance, E. P. (1988). The nature of creativity as manifested in its testing. In R. J. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 43-75). Cambridge: Cambridge University Press.
- Winner, E. (2005). *Darovita djeca: mitovi i stvarnost*. Lekenik: Ostvarenje.

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Mjerenje kreativnosti u metodici likovne kulture

Sažetak

U suvremenom je društvu kreativnost jedna od najpoželjnijih sposobnosti koju pojedinac posjeduje u svim područjima ljudskog djelovanja. S druge strane, obrazovna politika i nacionalni kurikuli u većini zemalja svijeta umjetničke predmete marginaliziraju po važnosti, a prednost se daje STEM (engl. science, technology, engineering, mathematics) disciplinama. Iako je, prema mnogim obrazovnim standardima, kreativnost jedna od ključnih kompetencija u nastavničkoj praksi, i dalje se vrednuju rutinske više nego kreativne aktivnosti. Upravo umjetnički predmeti u obrazovanju razvijaju u pojedincu kreativni (stvaralački) potencijal, ali to uvelike ovisi i o učitelju/nastavniku, o njegovu metodičkom pristupu i kompetencijama u okviru profesionalnog djelovanja. Stoga smo proveli empirijsko istraživanje u mentorskim (za Metodiku likovne kulture) i nementorskim osnovnim školama. Očekivalo se da će se redovitom suradnjom s fakultetom, putem likovnojezične problemske nastave, inventivnosti u osmišljavanju likovnih zadataka i osvještavanjem problematike štetnosti stereotipnog likovnog izražavanja utjecati na razvoj kreativnosti kod učenika. Između većeg broja provjerenih testova kreativnosti, upotrijebljen je Urban - Jellen „The Test for Creative Thinking - Drawing Production (TCT-DP)“, koji se temelji na crtačkoj aktivnosti. Zanimalo nas je postoji li statistički značajna razlika između mentorskih i nementorskih škola u rješavanju testa kojim se ispituje stupanj kreativnosti. Stupanj značajnosti razlike između kontrolne i eksperimentalne skupine statistički je utvrđen hi-kvadrat testom. Istraživanje je provedeno u osnovnim školama na području Grada Zagreba, na uzorku koji je obuhvaćao učenike četvrtih i osmih razreda. Rezultati istraživanja ukazuju na moguć utjecaj suradnje učitelja mentora sa sveučilišnim nastavnicima i studentima učiteljskih studija u okviru Metodike likovne kulture na kreativnost učenika.

Ključne riječi: likovna kultura; poticanje kreativnosti; problemska nastava; stvaralaštvo; mentorska suradnja.