

## DEVELOPMENT OF CREATIVE ABILITIES IN SCHOOLCHILDREN THROUGH SELF-COGNITION LESSONS

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### Abstract

Self-Cognition lessons at Kazakhstani schools are aimed at the harmonious development of child's intellectual, spiritual capacity building, and moral empowerment. The purpose of the study is to analyze self-cognition teaching experience for creativity development in schoolchildren and to propose methodological recommendations for improving the learning process at self-cognition lessons. The self-cognition syllabus from the 1st grade through the 11th grade has been reviewed to identify a theme on schoolchildren's creative development. For the purpose of this paper, content analysis of 5th grade textbook was done. The review showed that Lessons 33-34 are marked as "Creativity Lessons". Pupils present their creative works from their Portfolios. The methodological framework developed by the researchers included curriculum that involves art-technologies for 5th grade schoolchildren and corresponded to themes from Lesson 17 through 34. 100 5th grade schoolchildren of School 55 in Almaty took part in Stage 1 of the diagnostic study. Assessment of creative abilities was carried out through tests from Zievert (2014) and Rogov (1999). The curriculum was conducted with only one class, which showed the lowest creative ability values versus the four 5th grades ( $n_2 = 24$ ) in the formative stage. After the Art Technology lessons, a high creativity level was demonstrated by a higher number of pupils. With the use of newly developed system, the number of pupils with high and average creativity levels increased.

*Keywords:* Self-cognition, creativity, teaching method

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## 1. Introduction

Spiritual and moral education is becoming a priority for the development of the national education system, focusing on unleashing students' maximum potential. Since 2010, a new curriculum featuring Self-Cognition has been introduced to the Kazakhstan education system. Self-Cognition is aimed at developing the child's creativity, while stimulating the harmonious development of intellectual, spiritual capacity building, and moral empowerment. The didactic grounds determining the selection of Self-Cognition content are as follows (Mukazhanova, 2015; Mukazhanova & Omarova, 2013):

- the overall goal of spiritual and moral education aimed at unleashing a person's abilities and building harmonious physical, mental, spiritual, social and creative capacity in him/her;
- educational objectives of Self-Cognition aimed at fostering intellectual, informative, communicative and reflective cultures among schoolchildren.

It is important that Self-Cognition has a "vital" content and teaches the technologies and techniques of personal self-regulation, self-development and relaxation, and, at the same time, makes a student seek for meanings - the meaning of life, work, friendship, love, resilience and ability to overcome failures, and moving forward.

## 2. Literature review

### 2.1. Definition of "Creative Abilities"

Most authors link the definition of creativity *with the activity delivering a new original product* or material and spiritual *value*. We studied 11 definitions of the notion of "creative abilities". Most authors define creative abilities as: a synthesis of personal features and characteristics (Andreev, 1996), individual psychological characteristics of a person (Teplov, 1961), a property of functional systems (Teplov, 1961), a complex personal quality (Bolshakova, 2001), the ability to be surprised and learn (Motkov, 1993), integral qualities of an individual (Belyanina, 2004), the totality of personal features and characteristics (Solopanova, 2004), a transforming activity (Bazarbayeva, 2008).

For example, according to Motkov (1993), "Creative abilities are the *ability to be surprised and learn*; the ability to find a way out in non-standard situations; it is the eagerness to discover the new and the ability for in-depth understanding of one's experience". According to Bazarbayeva (2008), "Creative ability is about a *transforming activity of a personality*

delivering the employment of non-conformal attitude to solving educational tasks; creation of something new and valuable for oneself”.

A working definition was developed to address “**development of creative abilities in schoolchildren**” for the purpose of this study. It is the improvement of individual and psychological features of children around creative activity, resulting in the ability to find ways out in non-standard situations, creating something new and valuable for themselves.

## 2.2. Review of Curricula and Textbooks

The Self-Cognition curriculum is part of invariant training for pupils of Grades 1-11 and designed for an academic load of 1 hour per week. This curriculum was designed by the Bobek National Center and approved by the Ministry of Education and Science of the Republic of Kazakhstan. In total there are 34 hours in one academic year for each class. A review of curricula and textbooks on Self-Cognition (Sainova, et al., 2010; Mukazhanova & Omarova, 2014) showed that *lessons* 33-34 at all educational levels are marked as “creativity lessons” (Table 1), where schoolchildren collect and hand their creative works to form a Portfolio.

**Table 1.** Contents of Self-Cognition lessons in Grade 5

Section	Lesson number	Themes	Content	Hours
<b>I The Joy of Knowing</b>	1-2	<b>The world of self-cognition</b>	<b>Inner World of Human. Surrounding World. Self-Cognition as a Life-long Process. Human Happiness.</b>	2
	3-4	<b>The World of My Feelings</b>	<b>Human Emotions and Feelings. Human and Human Mood. Managing Emotions. Conflict Resolution. Smile.</b>	2
	5-6	<b>From a Dream to Discovery</b>	<b>Dreams and Desires. Dream and Imagination. The Height of Aspirations. Dreaming as a Way to Know the World.</b>	2
	7-8	<b>Human Character</b>	<b>Personality Traits. Strong Character. Discipline. Character Education. Unity of Word and Deed.</b>	2
<b>II Learning to Communicate</b>	9-10	<b>The World of Human Relationships</b>	<b>Mutual Understanding as a Basis of Human Relationships. Caring for Others. Empathy. Respecting Yourself and Others.</b>	2
	11-12	<b>Friendship Between Boys and Girls</b>	<b>Culture of Opposite-Sex Friendship Among Schoolchildren. Friendship, Mutual Understanding in a Team. Joint Activity.</b>	2
	13-14	<b>Being a Part of a Team</b>	<b>Respecting Yourself. Respecting Your Fellow Schoolchildren. Politeness and</b>	2

			<b>Discreetness. Behaving Decently as a Part of a Team.</b>	
	<b>15-16</b>	<b>Peace and Harmony among People</b>	<b>Respect for the Culture, History and Religion of Different People as a Basis for Peace and Harmony among People. Amicable Dispute Resolution. Acting for the Good of the People.</b>	<b>2</b>
<b>III Being a Human</b>	<b>17-18</b>	<b>Family World</b>	<b>Family as a Necessary Condition for Human Happiness. Respecting People Who Are Close to You. Specifics of the Relationship Between Senior and Junior Family Members.</b>	<b>2</b>
	<b>19-20</b>	<b>About Trust</b>	<b>The Power of Trust. The Value of Trust in Relationships in a Person's Life.</b>	<b>2</b>
	<b>21-22</b>	<b>Being Hardworking</b>	<b>Industriousness as one of the Important Qualities of a Person. Working as a Way to Realize Human Opportunities.</b>	<b>2</b>
	<b>23-24</b>	<b>The Beauty of the Human Soul</b>	<b>The Inner Beauty. Pure Thoughts. The Ability to see the Beautiful in Oneself, People and the Surrounding World.</b>	<b>2</b>
<b>IV How Beautiful This World Is!</b>	<b>25-26</b>	<b>Nature as a Source of Inspiration</b>	<b>Talking to Nature. Nature in Creative Works of People. The Sense of Beauty.</b>	<b>2</b>
	<b>27-28</b>	<b>Learning to see the Beauty of Nature</b>	<b>Seasons. Nature and Human Mood. The Beauty of Nature in Colors.</b>	<b>2</b>
	<b>29-30</b>	<b>Learning to Hear the Music of Nature</b>	<b>The Sounds of Nature. Music and Emotional State of Person.</b>	<b>2</b>
	<b>31-32</b>	<b>Joy of Creativity</b>	<b>Creativity is the Path to Perfection. Creative Individual. Beauty in Creativity, Giving Joy to Others.</b>	<b>2</b>
	<b>33-34</b>	<b>Creativity Lessons</b>	<b>Creative Reports</b>	<b>2</b>

Table 1 shows that fundamental content of Self-Cognition in Grades 5-6 includes four main sections: *The Joy of Knowing*, *Learning to Communicate*, *Being a Human*, *How Beautiful This World Is!* The fourth section - *How Beautiful This World Is!* helps pupils to notice and understand the beauty of the surrounding world, take care of their health, live in harmony with nature, feel and appreciate the joy of creativity. Based on the curriculum review, we *suggested* that a methodological framework for creativity development in 5<sup>th</sup> grade schoolchildren as a curriculum of 31-34 lessons should be designed to be embedded into the lesson content and fully thematically aligned with it. At the same time, we further expanded the new

methodological framework from Lesson 17-18 lessons (instrumentally). Below is the justification for the methodological framework.

### *2.3. The Structure of Self-Cognition Lessons*

Self-Cognition Lessons are characterized by their own specific methodological structure. The standard lesson plan includes the following methodological techniques:

1. Positive attitude;
2. Positive statement (quote);
3. Teachers' present;
4. Creative activity, group activity;
5. Group singing (Mukazkanova & Omarova, 2013).

Let us consider these specific methods:

- 1) the positive attitude technique includes meditative component;
- 2) the lesson quote includes a saying by a famous person with deep, mind-blowing meaning, acting as a main message of the lesson's subject and script. Quotes provide good food for thought to pupils, initiating a dialogue in the classroom;
- 3) storytelling on the theme. This may be a parable, a story, a video about interesting, instructive life experience, a biography of a famous person (or a simple person who could overcome life difficulties). In other words, it is called "Teacher's Present". Stories have a great semantic meaning where the teacher and schoolchildren ask different questions and seek different answers. In this context the value-semantic development of personality occurs;
- 4) creative individual or group activity is where innovative and active teaching methods are used. For example, schoolchildren tried to shape their happiness symbols in 10-15 minutes from modelling clay, which at the end of the lesson were displayed as a mini-exhibition (Mynbayeva, Anarbek, & Yeseeva, 2016);
- 5) singing along allows one to employ the energy of music in the learning process. Both old and new meaningful songs are selected. A new direction in Pedagogy is used being more in line with the new generation, which is all about the drive - energy or its outburst. A song is used as a lesson track.

We would like to emphasize that the methodological technique of creative individual or group activity is already aimed at developing creativity in pupils. This technique characterizes the subject as essentially "creative" one. At the same time, certain risks must be

acknowledged. A teacher should constantly seek for new creative techniques, be able to discuss “quotes of the lesson” and stories, without suppressing schoolchildren with their authority, and ask open questions. It is also about using the right “soft” argument, being able to summarize the discussion, delegating authority to pupils in the course of discussion and summarizing discussions. It is important to have a sense of measure, creating dialogue in the classroom, seeking for compromise and meanings.

### **3. Problem Statement**

One of the peculiarities of the Self-Cognition teaching method is that no marks are assigned to pupils. From a teacher’s perspective, this practice makes motivation across the subject complicated. Therefore, a teacher’s acumen lies in the ability to foster schoolchildren’s interest in the new subject, and active engagement in the lesson free from the motivation for earning marks. It is necessary to teach the subject in such a way that schoolchildren enjoy the lessons or school time as a whole. Teaching pupils creative skills through the use of Art Technology may become one of the incentives.

### **4. Research Questions**

Each lesson includes content on a specific theme, that is, knowledge and teaching methods. The methods, and teaching means and technologies can be called teaching tools. One can say that the lesson is filled with content and delivered instrumentally. Each lesson develops the schoolchildren’s personality in a creative and instrumental way through the use of creative teaching methods. Hence, several questions arise: what are the lessons also aimed at developing creativity in pupils *by content theme of the subject*? Is it possible to develop a methodological framework for fostering creative abilities during the Self-Cognition lessons? What are existing basis for this in the current Self-Cognition teaching methodology? What are the new aspects that may be added to this methodological framework? What art technologies can be used?

### **5. Objective of the Study**

The purpose of the study is to review Self-Cognition teaching experience for fostering creativity in pupils and drafting methodological recommendations for the improvement of the Self-Cognition learning process.

## 6. Research Methods

At first, we studied the curricula of Self-Cognition lessons, textbooks, and teachers' manuals to find out what lessons were aimed at studying the phenomenon of creativity and if there were there any such lessons in the curricula.

The structure of methodological lesson structuring was reviewed where it was suggested that creative teaching methods be introduced into the lesson. A methodological framework for creativity development in schoolchildren during Self-Cognition lessons was developed for this study. The following methods were used to diagnose the creativity level:

- Measuring creative abilities test (Zivert, 2014), aimed at diagnosing creative abilities;
- Creative potential test (Rogov, 1999).

Zivert's test measures creativity levels in schoolchildren using two scales: resourcefulness and divergent thinking. Questions such as, "What one can do with a NEWSPAPER? What one can do with a GLASS?" were asked to see what options schoolchildren could offer. A child can generate both standard solutions for example, "read the newspaper" and non-conformal even absurd ones. All options were taken into consideration. Rogov's test determines the boundaries of curiosity, self-confidence, ambitiousness and persistence, auditory and visual memory, the desire to be independent, and the ability to think abstractly and focus. Rogov's test helps to understand the pupils' openness and readiness to embrace creativity, while Zivert's test shows how a child can think of out of the box solutions. Both tests are used in measuring creativity. In fact, they determine possession of creative *skills*.

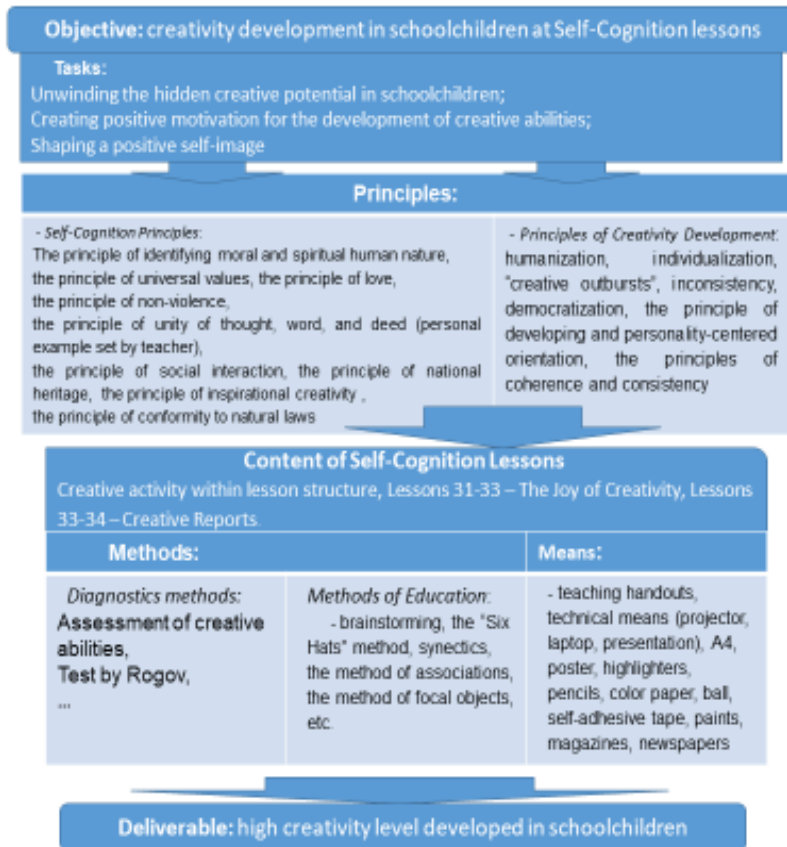
After a lesson using the methodological framework for creativity development, a repeated diagnosis of creativity levels was carried out. Reliability of the findings was confirmed using statistical analysis of the children's t-test. The study was conducted from November 28, 2016 through April 28, 2017. The survey involved 100 respondents who are schoolchildren of 5 A, B, C, and D grades at School 55 in Almaty, Kazakhstan. The average age of the children was 11 years.

## 7. Findings

### 7.1. Methodological Framework for Creativity Development in Schoolchildren

Current teaching activity is characterized by the use of art technologies as means of creativity development in pupils. Art technology is a system of methods, techniques and techniques of artistic creativity that promotes self-expression and personal development (Mynbayeva & Smailova, 2015).

The methodological framework for by-component creativity development in schoolchildren includes the following: objectives and tasks of the framework, leaning on the principles of teaching Self-Cognition and the principles of developing creativity in pupils, the content of lessons, teaching methods and methods for measuring creative abilities, teaching conditions and the teaching of deliverables. The methodological framework is presented in an illustrative form below (Figure 1).



**Figure 1.** Methodological Framework for the Creativity Development in Schoolchildren

The performance of the model depends on the extent of creative atmosphere shaped during the Self-Cognition lesson. Therefore, it is necessary to implement the conditions for teaching Self-Cognition:

- Creating an atmosphere of love, trust, creative self-discovery, shaping conditions for self-exploration, development of intuitive comprehension of self and the world;



- The need to apply only positive and humane methods in the process of moral and spiritual education;
- Integration of moral and spiritual education into the whole pedagogical process at school.

We decided to expand the methodological framework to develop creativity in pupils, starting with Lessons 17-18, applying Art Technology. The proposed applied methods are presented in Table 2.

**Table 2.** Applied Methods

<i>Section</i>	<i>Lesson number</i>	<i>Themes</i>	<i>Applied Methods</i>
<b>III Being a human</b>	17-18	<b>The Family World</b>	<b>Therapeutic Puppetry</b>
	19-20	<b>About Trust</b>	<b>Writing Fairy Tales</b>
	21-22	<b>Being Hardworking</b>	<b>Card-making</b>
	23-24	<b>The Beauty of the Human Soul</b>	<b>Collage</b>
<b>IV How Beautiful This World Is!</b>	25-26	<b>Nature as a Source of Inspiration</b>	<b>Art Therapy</b>
	27-28	<b>Learning to See the Beauty of Nature</b>	<b>Drawing on Rocks</b>
	29-30	<b>Learning to Hear the Music of Nature</b>	<b>Music Therapy</b>
	31-32	<b>The Joy of Creativity</b>	Lesson content is supplemented by considering the concept of “creativity”, “Art Technology”, methods for developing creative abilities. It is possible to apply the methods of “Six hats”, synectics, the method of associations, and the method of focal objects
	33-34	<b>Final Revision</b>	Creative Portfolio

The developed framework was tested during the Self-Cognition lessons with the participation of 5<sup>th</sup> grade pupils of School 55 in Almaty.

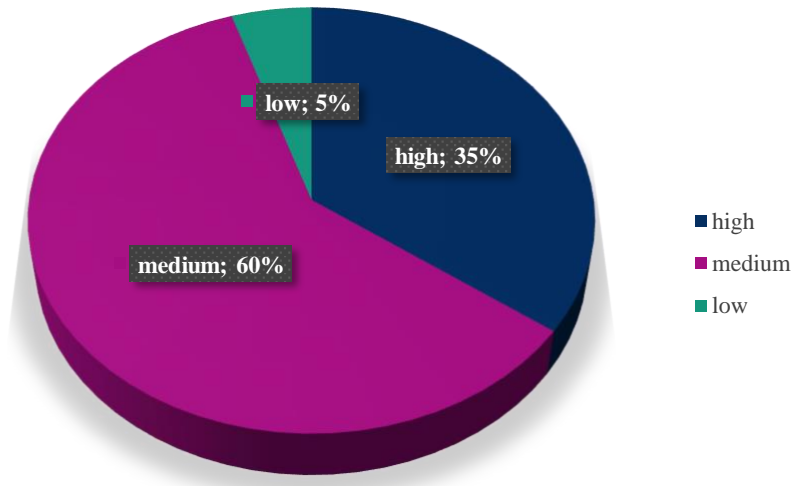
### 7.2. Curriculum Testing

The pilot action plan was prepared according to the methodology used by Isaeva and Taubayeva’s in their pedagogical experiment (2000). The action plan included 3 stages: diagnostics, formative, and control stages.

**Diagnostics stage.** Diagnosis of schoolchildren’s creativity was carried out using the following tests: “Measuring creative abilities test” (Zivert, 2014), aimed at diagnosing creative abilities and assessment of creative potential test by Rogov (1999). Questions diagnose the

boundaries of the respondent's curiosity, self-confidence, persistence, visual and auditory memory, the desire for independence, the ability to think in abstract terms and focus.

According to Zivert's Measuring creative abilities test, the following findings were obtained (Figure 2)



**Figure 2.** Creativity Levels in Schoolchildren According to Zivert Test

The analysis of the test findings revealed that that 35% of the respondents demonstrated a high creativity level which allowed us to conclude that the majority of respondents have a high creativity level, are resourceful, and can successfully perform two operations simultaneously (writing and thinking). The ability for non-conformal thinking is to some extent clearly higher than the general level. 60% of the pupils under review showed average (within the limit) creativity level. This suggests that schoolchildren demonstrate a normally pronounced ability to think in a non-standard way and their abilities in this area are average. This indicator shows that schoolchildren possessing average creativity level may demonstrate better performance provided some practice.

5% of schoolchildren are characterized by low creativity level. These children coped poorly with test assignments, with very low level of resourcefulness, but with certain non-standard thinking signs.

The next method used to assess creativity in pupils is Rogov's (1999) test. Test results were interpreted using a point system as represented in Table 3 below.

**Table 3.** Findings of diagnostics of schoolchildren’s creativity according to Rogov

Points	23 and below	from 24 to 48 points	49 and above
Number of respondents (in %)	10 %	60 %	30 %

So, according to the Rogov test findings 10% of schoolchildren got *less than 23 points*. This indicates that the creative potential in these pupils is limited. But there is a possibility of a child having underestimate him/herself and his/her abilities. Lack of confidence may lead to the idea of their being unable to be creative at all. By tackling this through the proposed methodological framework, they can solve the problem.

60% of pupils scored *from 24 to 48 points*, which stands for average creativity level. The findings indicate that schoolchildren possess the qualities which allow them to be creative, but there exist certain barriers to their creativity. The most dangerous is fear, especially among children for whom success is a must. Fear of failure blocks imagination, which is the basis of creativity. Fear can be social, such as fear of being publicly judged. Any new idea passes through a stage of surprise, resistance, and rejection by others. Fear of being rejected for a new behaviour unusual to others, views, and feelings hampers creativity, and can destroy a creative personality.

30% of schoolchildren scored *49 and less points*. These pupils demonstrate a high creativity level. These children have significant creative potential, which presents them with a rich choice of creative opportunities. If schoolchildren can actually apply their abilities, then they are open to a wide variety of creativity forms.

After conducting a diagnostic of the creativity level in the 4 grades, we chose 5 "C" as the experimental group, since the children in this class had the lowest scores in comparison with other classes. Statistical analysis methods were used during the processing.

**Formative stage** includes giving lessons in accordance with the designed methodological framework (Figure 1, Table 2). 24 children participated in the formative stage. The objectives and tasks of the framework are indicated in Figure 1. The curriculum was designed for 16 lessons (1 hour per week). Each lesson contained creative assignments, including Art Technologies.

Theme 1. “The Family World”. The use of Therapeutic Puppetry contributes to psychological relief, which helps to reveal child individuality, soothes the soul, changes a negative mood into a positive one, and urges interest in creativity. Puppets help develop natural abilities, imaginative thinking, memory, positive emotions, self-awareness and self-control

contributing to the formation of positive attitudes, emotional and motor adequacy, and communication skills.

Theme 2. “About Trust”. Writing of fairy tales is a method that contributes to creativity development, expansion of consciousness, and improved interaction with the surrounding world.

Theme 3. “Being Hardworking”. We used the Card-making method; hand-made cards using improvised materials. Each such card is unique, as it is the exact meaning of card making. Schoolchildren create postcards, putting their souls in them and developing imagination.

Theme 4. “The Beauty of the Human Soul”. The Collage method was used - creating a composition, combining multiple texture elements (newspaper clippings, pieces of cloth, photos). Collage negates the concept of the whole, since it is a fragment and consists of fragments. Collage is a kind of simulator needed to train a sense of freedom in the process of seeking variants of images created, to develop thinking, search for non-standard solutions, unexpected semantic and visual associations, develop design organizational skills, fine motor skills, imagination, and fantasy.

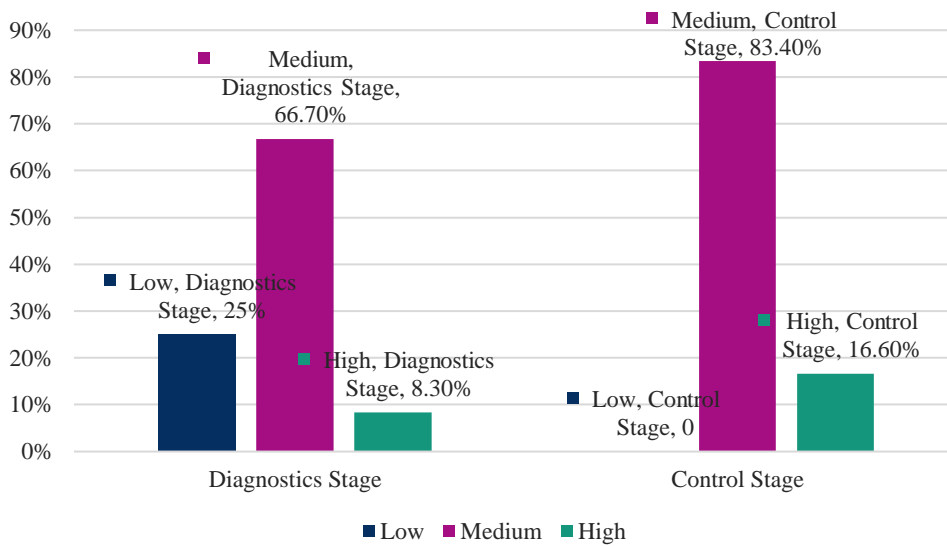
Theme 5. “Nature as a Source of Inspiration”. The main task of Art Therapy is restoration of harmony of a personality with oneself, through the development of his/her abilities for creation, self-awareness and analysis of certain symbols existing in the creative activity.

Theme 6. “Learning to See the Beauty of Nature”. Drawing on stones is a great way to develop imagination and attention to detail. On stones, one can apply both simple drawings, and create a serious work. The peculiarity of this kind of painting is three-dimensionality of the works. Drawing on stones requires precise accurate movements, which develops assiduity and motor skills very well.

Theme 7. “Learning to Hear the Music of Nature”. Music therapy is the influence of music on a person in order to correct his/her physical and mental state.

Theme 8. “The Joy of Creativity”. This lesson is aimed at unwinding the essence of creativity, where applied creative methods are aimed at creativity development in pupils.

At the **third stage, control diagnosis** of creativity levels in the experimental group and comparative analysis of the initial and final findings were carried out. The findings revealed that 16.6% of pupils demonstrated a high creativity level, with 83.4%, demonstrating an average level. Figure 3 presents the comparison of the control stage obtained findings with the findings of the diagnostics phase.



**Figure 3.** Post-Formative Changes in Creativity Development in Students

As can be seen in Figure 3, the number of pupils demonstrating a high creativity level according to Zievert and Rogov’s tests increased by 8.3% as a result of participating in the Art Technology lessons. The number of pupils demonstrating an average creativity level increased by 6.7%, and there were no schoolchildren with a low creativity level (zeroed out).

A t-test was carried out to determine the reliability of the experimental findings (Yermolaev, 2006). The t-test values were calculated using the SPSS program. The empirical value of the t-test was -5.9. The calculated value of the t-test is considered to be more critical, so we can conclude the statistical significance of the differences between the compared values. Based on the data obtained, it can be concluded that the approved curriculum produced a positive result.

## 8. Discussion

We designed a methodological framework for creativity development during Self-cognition lessons using Art Technologies. That is, using creative teaching methods, we hoped to shape creativity as a personality trait. According to Finnish authors Vedenpää and Lonka (2014), creativity development can be achieved through the use of creative teaching methods and more than 60% of Finnish teachers and future teachers believed this to be true. Toivanen, Halkilahti, and Ruismäki (2013) encourage creating an educational environment that supports schoolchildren’ creativity by combining the theory of creativity with theatrical education. This

aligns with our methodological framework, which uses Therapeutic Puppetry where pupils perform role interaction on behalf of invented heroes.

Creative methods and environment contribute to the fulfillment of other functions and tasks. In addition to subject knowledge, cognitive and meta-cognitive skills, physical and practical skills, Taguma, Shirai, & Anger (2016) included the social and soft skills. The Kazakh national education system used to emphasise on the cognitive education component, so the development of soft skills at school can be considered a new component of the learning process. In this direction, one may incorporate Art Technology. We believe that nothing but Self-Cognition, as an interdisciplinary subject, can promote the development of social and soft skills, as well as values and attitudes.

## **9. Conclusions and Recommendations**

This study clearly shows that the incorporation of Art Technologies into the self-cognition component of the curriculum did raise the levels of creativity among the children in the experimental group. This indicates the success of the proposed methodological framework in addressing the learning outcomes of the curriculum in terms of fostering creativity in schoolchildren. While we are pleased with the outcomes, several recommendations for improving the skills of teachers are proposed. Teachers need

- to have an open mind on innovation, keep a register of innovations, update it from time to time;
- create a bank of tests for diagnosing creativity in schoolchildren together with school psychologist; test the abilities of pupils once a quarter;
- apply Art Technology in Self-Cognition learning process;
- reflect on the lessons held, write down new ideas;
- read a variety of information and mentally try to apply it in new situations;
- spend some time in complete silence and try to understand your inner state;
- try to visualize everything that impressed you, whether it be sounds, taste flavors;
- create hand-made items, and so on

It is necessary for teachers to provide material supplies and consumables for creative activities (paints, modelling clay, crayons, easels, etc.) in Self-Cognition classrooms at ordinary schools for the application of modern methodological frameworks. It is recommended that Self-Cognition courses be introduced for the parents as well, with a view to developing a close interaction between the family and school. Conducting master classes by leading Self-

Cognition coaches is also recommended for the teachers and relevant school authorities to enable all stakeholders to realise the potential of this methodology in unleashing the creativity potential in children.

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