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EFFICIENCY ART-THERAPEUTIC TECHNOLOGIES IN CORRECTION-EDUCATIONAL WORK WITH YOUNGER STUDENTS WITH AUTISM SPECTRUM DISORDER WITH INTELLECTUALTY VIOLATIONS

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ABSTRACT

The investigation is dedicated to the possibilities of art therapy as one of the methods for implementing psychological and pedagogical support to persons with disabilities of various ages (primarily childhood) in conditions of inclusive education. The results of approbation of art therapy technologies and its corrective influence in the process of working with children with intellectual and emotional-volitional systems are presented in the investigation. The scientifically grounded methodology of organization and usage of art-therapeutic technologies and methods in the organization of psychological and pedagogical support to persons with limited health possibilities are described.

Keywords: *art therapy, art therapy technologies in the process of working with children with intellectual and emotional-volitional systems, psychological and pedagogical support to persons with disabilities, technology of psychological and pedagogical support for persons with disabilities*

1. INTRODUCTION

Today, we can see that in Russia various psychotherapeutic methods and the technologies have been developed, including those based on the use of art. Many of them are used in the work on the correction of psychophysical development disorders actively, with different degrees of efficiency [1, 2, 6, 8, 9, 11, 17]. Most authors [1, 3, 5, 7, 10, 12, 13, 19, 22] indicate that a significant number of children and adolescents have the defect in autism spectrum disorder (hereinafter — ASD). ASD is a combination of disorders in the cognitive and emotional-volitional systems that have a significant impact on mental development. Most often, under the influence of these factors, states are formed according to the severity of the underdevelopment of intellect, similar to the retarded mental development (hereinafter RMD). Therefore, it requires the organization of a system of special psychological and pedagogical assistance and support, especially taking into consideration the inclusive focus of modern education in the Russian Federation. A significant part of the research on the organization and provision of psychological and pedagogical assistance and correction is made by the works describing the activities of teachers and psychologists with such category of children and adolescents of preschool age [4, 9, 10, 14, 17]. The works include studying children of school age, younger school age and less [3, 8, 11, 15, 16, 22]. The same statement applies to the use of corrective possibilities for art therapy in the school and after-school activities of children with ASD and having RMD [17]. All of the above is a motivation for organizing and conducting an experimental study described in this article [1]. The purpose of the study is development and conduction of a procedure for assessing the effectiveness of an art therapy technology Variabili

for further study of the corrective effect on the violations of the cognitive and emotional-volitional systems of young schoolchildren with health limitations, including those with ASD and having RMD.

2. MATERIALS AND METHODS

The study was conducted on the basis of the State Budgetary Educational Institution of Moscow School No. 1206. The students of the first, second and third grades took part in this investigation. A total of 28 junior schoolchildren were examined with a diagnosis of ASD with a retarded mental development (cerebra organic genesis according to K. Lebedinskaya). Subsequently, all those children took part in 10 lessons of experimental training in the art-therapy technology "Variabilie". In a series of experiments of a pilot investigation of "Variabilie" technology, we try to reveal the potency assignment in the correction of violations of cognitive and emotional-volitional systems of schoolchildren with health limitations. In the course of research to assess the development level of a cognitive system, various standardized methods were used, namely 10 words by A. Luria and graphic dictation by D. Elkonin. Finally, to study the development of the emotional-volitional system the methodology of De Grefe's self-evaluation was used. To study the effectiveness of the art therapy, we chose the "Variabilie" technology created by German art therapy authors Ekkahart Bouchon and Dr. Nina Geling-Bouchon. The technology includes painting, wooden sculptures, music therapy, breathing exercises. The main idea is a maximum variability of the result and an absence of wrong options. There are two basic directions: painting and working with wood. For relaxation, elements of music therapy and breathing exercises are used. The technology is used in working with children and adolescents in a difficult life situation and with various developmental disabilities. The art method "Variabilie" has been tested with children from kindergartens, schools and boarding schools both in Russia and in Germany. The method has no age or social group limitations. It can be not just a problem of teens, ordinary and talented children, but also children with developmental disorders [25]. The first stage of the "Variabilie" technology is connected with wooden sculptures. Here different species of wood are often used. Participants are invited to create a sculpture with the help of wooden fragments according to the principle of a mosaic moving in space. Wooden fragments can be turned in different directions and combined with each other. It is assumed that the collected sculpture can again be disassembled into fragments and collected again, getting something new, the obstacles to creativity are removed, and there is room for imagination. The second stage of the work is related to breathing exercises that help to achieve the state of relaxation, feel your mental state and to remove the psychological clamps. Here we achieve the state of relaxation. The third stage of the work is carried out in a combination of painting and music. Participants are invited to listen to five versions of music that express different energy states: chaos, sun, moon, love and the universe. While listening to the music, participants are drawing interlaced lines with closed eyes. After that, the result is applied to the paint. Statistical processing of the data obtained during the investigation consisted in determining the reliability of the differences for coupled samples (Wilcoxon t-test).

3. RESULTS OF THE STUDY AND DISCUSSION

Figure following on the next page

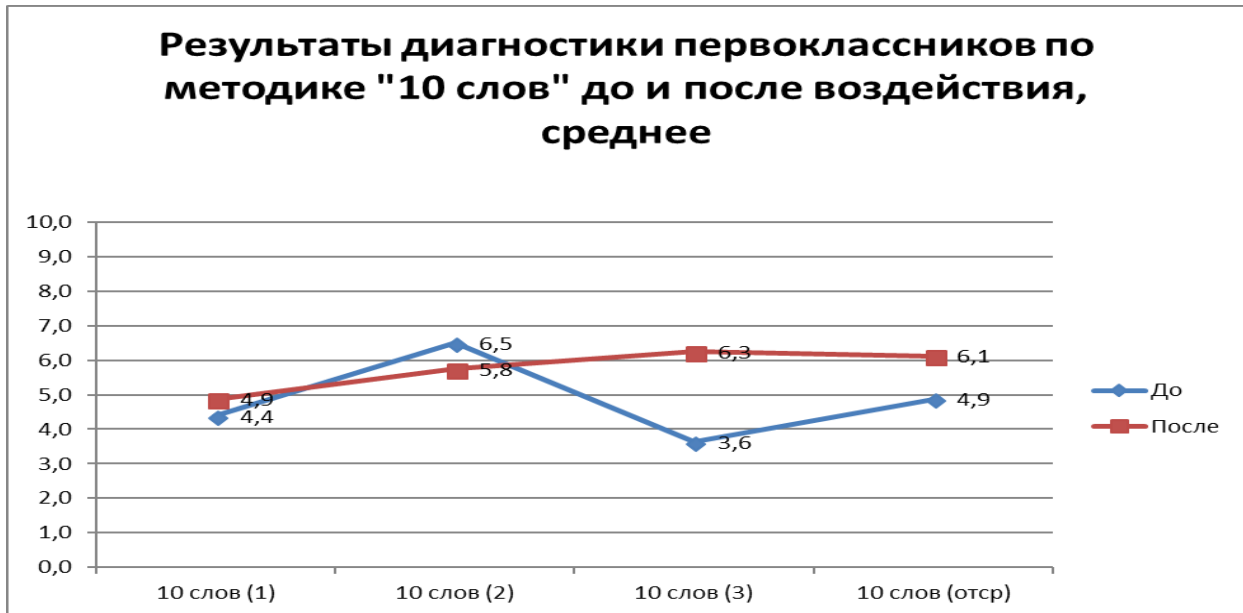
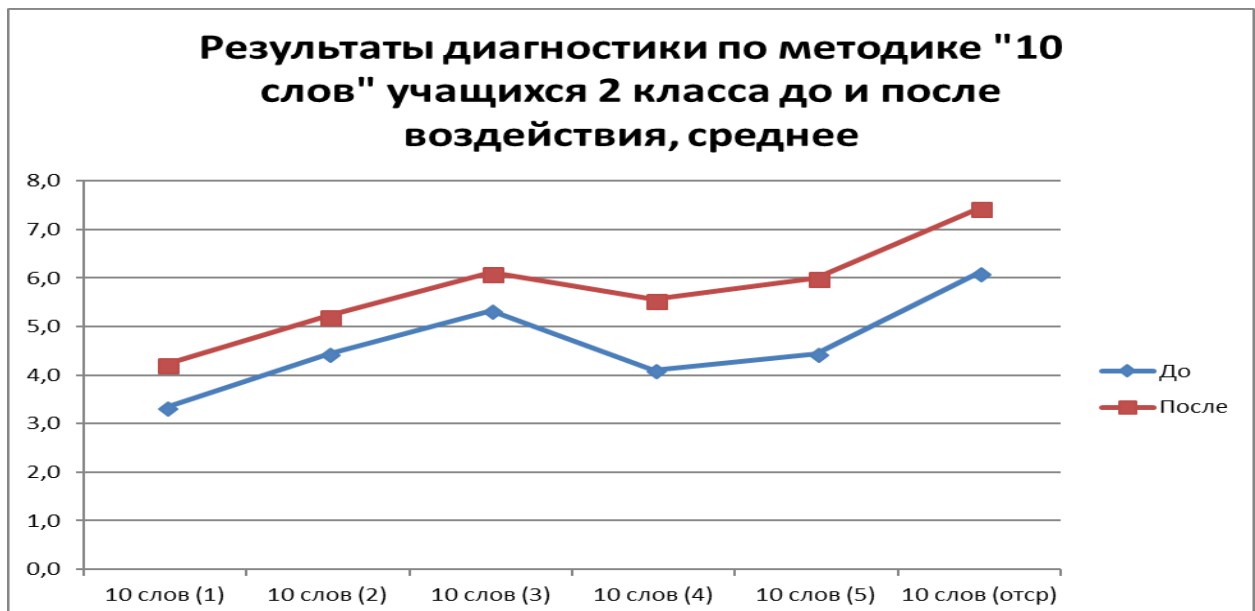


Figure 1: The results of ' diagnosis by first-graders by the method of 10 words before and after exposure, medium

Based on the results of the diagnosis of first-graders pupils with health limitations using the 10 words method after the first repetition, minor changes occurred. After the second repetition, the level of memorization of words before exposure exceeds the 'after' indicators. After the third repetition, the indicators 'after' significantly exceeded the indicators before exposure. After the delayed repetition, the indicators 'after' decreased slightly, and the 'before' indicators increased



but did not exceed the 'after' indicators.

Figure 2: The results of ' diagnosis by a second-grader by the method of 10 words before and after exposure, medium

According to the results of diagnostics using the 10 words method of health limitations with of the second grade at the first repetition we can see that the 'after' memorization level exceeded the 'before' memorization level. At the second repetition, the indicators 'before' and 'after' increased, while 'after' exceeded the indicators 'before'.

At the third repetition, the number of words increased, 'after' exceeded 'before'. After the fourth repetition, the indicators decreased, while 'after' exceeded 'before'. After the fifth repetition, the indicators reached almost the same level as they were after the third repetition, while 'after' again exceeded 'before'. With delayed repetition, both indicators increased significantly, while 'after' exceeded 'before'.

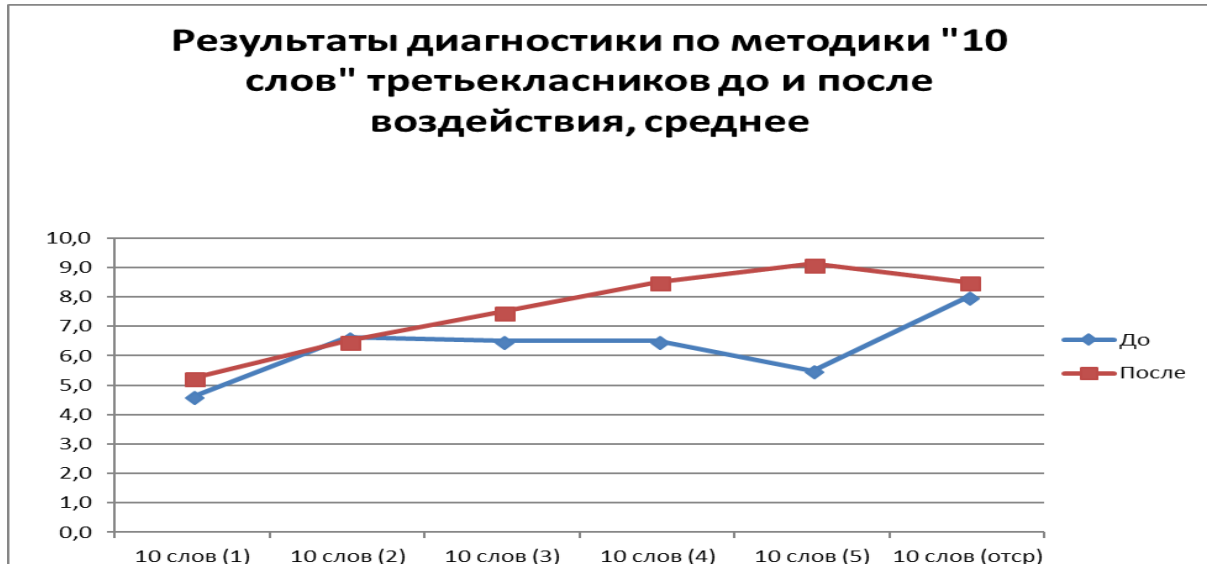


Figure 4: The results of ' diagnosis by a third grader by the method of 10 words before and after exposure, medium

According to the results of diagnostics using the 10 words method of health limitations with of the third grade at the first repetition we can see the 'after' memory level exceeded the 'before' memorization level. At the second repetition, the indicators 'before' and 'after' increased, while they were on the same level. After the third repetition, 'after' exceeded 'before', while 'before' remained at the same level as at the first repetition. After the fourth repetition, 'before' again remained unchanged, and 'after' it increased. After the fifth repetition, 'before' decreased, while 'after' increased 'before'. With the delayed repetition, the indicator 'before' increased, and the indicator 'after' decreased, but everything still exceeds 'before', but insignificantly.

Table 1: Results of the study of schoolchildren according to De Greife method before and after diagnostics, an average data

Grade	Stage of research	I	Friend	Teacher
1	Before	19,9	9,1	23,4
	After	18,1	16,4	20,3
2	Before	20,4	8,4	23,2
	After	19,1	12,1	23,0
3	Before	20,0	7,3	23,3
	After	20,9	12,9	25,8

- At the 1st grade, when studying schoolchildren according to De-Greife method, the average values at the stages 'before' and 'after' the impact:
 Parameter 'I': the value of 'before' slightly exceeds the value 'after'. Parameter 'Friend': the value 'before' exposures 'after'. Parameter 'Teacher': the value 'before' exceeds the value 'after'.

- At the 2nd grade, when studying schoolchildren according to *De-Greife method*, the average values at the pre- and post-impact stages are:
 Parameter 'I': the value 'before' slightly exceeds the value 'after'. Parameter 'Friend': the value 'before' exposures 'after'. Parameter 'Teacher': the value 'before' is slightly higher than the value 'after'.
- At the 3rd grade, when studying schoolchildren according to *De-Greife method*, the average values at the stages 'before' and 'after' the impact:
 Parameter 'I': the value 'before' exceeds the value 'after'. Parameter 'Friend': the value 'before' exposures the value 'after'. Parameter 'Teacher': the value 'before' is slightly higher than the value 'after'.

Data on the method graphic dictation are presented in the Table 2.

Table 2: Results of the study of schoolchildren according to the Graphic dictation method 'before' and 'after' the impact, average score

Grade	Stage of research	graphic dictation 1		graphic dictation 2		graphic dictation 3		graphic dictation 4	
		assessment of resolution	assessment of self-expression	assessment of resolution	assessment of self-expression	assessment of resolution	assessment of self-expression	assessment of resolution	assessment of self-expression
1	Before	3,5	3,6	2,8	3,0	2,0	1,5	0,3	0,3
	After	3,5	3,8	2,9	3,1	2,3	2,5	1,0	1,3
2	Before	2,8	2,9	2,4	2,6	2,0	2,0	0,9	1,1
	After	3,0	3,0	2,6	2,7	2,1	2,7	2,0	2,2
3	Before	3,1	3,3	2,6	2,8	1,6	1,8	1,6	1,8
	After	3,4	3,5	3,0	3,0	1,9	2,0	2,1	2,4

At performance of graphic dictation = the average depends on two parameters - resolution and self-expression. When graphical dictation 1 is performed, the evaluation for resolution at the pre- and post-impact stages is the same. The evaluation for self-expression 'after' is slightly higher than 'before'. When the graphical dictation is 2 takes place, the average score for the post-impact stage is slightly higher than the pre-impact. The assessment for self-expression 'after' impact is slightly higher than the estimation before impact. When the graphical dictation is 3 takes place, the average score for resolution at the 'after' stage exceeds the estimate 'before' the impact. The evaluation for self-expression 'after' impact exceeds the estimate 'before' impact. When performing the graphical dictation 4 is performed, the indicators at the stage 'after' the impact increased, as compared to the previous dictations. The average score for resolution and for self-expression 'after' exposure is significantly higher than the estimate 'before' impact. The results of the study of the 2nd grade students according to the Graphic dictation method 'before' and 'after' the impact. At performance of graphic dictation = the average depends on two parameters - resolution and self-expression. When graphical dictation 1 takes place, the evaluation for resolution at the pre- and post-impact stages is the same.

The evaluation for self-expression 'after' is slightly higher than 'before'. When the graphical dictation 2 takes place, the average score for the post-impact stage is slightly higher than the pre-impact estimate. The assessment for self-expression 'after' impact is slightly higher than the estimate 'before' impact. When the graphical dictation 3 is performed, the average score for resolution at the 'after' stage exceeds the estimate 'before' the impact. The evaluation for self-expression 'after' exceeds the estimate 'before'. When performing the graphic dictation 4, the indicators at the stage 'after' the impact increased, as compared to the previous dictations. The average score for resolution and for self-expression 'after' impact is significantly higher than the estimate 'before' The results of the study of the 3rd grade students according to the 'Graphic dictation' method before and after the impact. At performance of graphic dictation = the average depends on two parameters - resolution and self-expression. When graphical dictation 1 takes place, the evaluation for resolution at the pre- and post-impact stages is the same. The evaluation for self-expression 'after' is slightly higher than 'before'. When the graphical dictation 2 takes place, the average score for the post-impact stage is slightly higher than the pre-impact estimate. The assessment for self-expression 'after' impact is slightly higher than the estimate 'before'. When the graphical dictation 3 is performed, the average score for resolution at the 'after' stage exceeds the estimate 'before' the impact. The evaluation for self-expression 'after' exceeds the estimate 'before'. When performing the graphic dictation 4, the indicators at the stage 'after' the impact increased, as compared to the previous dictations. The average score for resolution and for self-expression 'after' impact is significantly higher than the estimate 'before'. After the initial processing of the obtained data, we conducted a study of the results of the study using mathematical statistics methods to assess the reliability of the revealed differences by means of the t-criterion of sign rankings for the related Wilcoxon samples. Significant differences were revealed only by the Graphic dictation method by D. Elkonin and by De Grefe method. Data on the method 'Graphic dictation' in Table 3.

Table 3: The results of t-test of symbolic ranks for related samples Wilcoxon about method "the Graphic dictation" by D. B. Elkonin

Grade	Stage of research	graphic dictation 1		graphic dictation 2		graphic dictation 3		graphic dictation 4	
		assessment of resolution	assessment of self-expression	assessment of resolution	assessment of self-expression	assessment of resolution	assessment of self-expression	assessment of resolution	assessment of self-expression
1	Before	3,5	3,6	2,8	3,0	2,0	1,5	0,3	0,3
	After	3,5	3,8	2,9	3,1	2,3	2,5	1,0	1,3
2	Before	2,8	2,9	2,4	2,6	2,0	2,0	0,9	1,1
	After	3,0	3,0	2,6	2,7	2,1	2,7	2,0	2,2
3	Before	3,1	3,3	2,6	2,8	1,6	1,8	1,6	1,8
	After	3,4	3,5	3,0	3,0	1,9	2,0	2,1	2,4

At the 1st grade, graphic dictation at the third stage, the level of resolution according to the 'Assessment of self-performance' indicator showed a significant level of importance of the differences (0,038, at $p \leq 0,05$).

At the fourth stage, the level of implementation for the ‘Assessment of resolution’ indicator showed a significant level of importance of the differences (0.014, at $p \leq 0.05$). The level of resolution for the indicator ‘Assessment of self-performance’ showed a significant level of importance of differences (0.011, with $p \leq 0.05$). At the 2nd grade, graphical dictation in the fourth stage of the resolution level for the indicator ‘Assessment of resolution’ showed a significant level of importance of the differences (0.026, at $p \leq 0.05$). At the fourth stage, the level of resolution for the ‘Assessment of self-expression’ indicator showed a significant level of importance of the differences (0.041, at $p \leq 0.05$) by the criterion of Wilcoxon's grades. At the 3rd grade, graphical dictation in the fourth stage of the resolution level for the indicator ‘Assessment of resolution’ showed a significant level of importance of the differences (0.046, at $p \leq 0.05$). The level of implementation for the indicator ‘Assessment of self-expression’ showed a significant level of importance of the differences (0.025, at $p \leq 0.05$). Data on the method ‘De Grefe method’ in Table 4.

Table 4: Results of the study of schoolchildren according to De Greife method before and after diagnostics, an average data

Grade	Stage of research	I	Friend	Teacher
1	Before	19,9	9,1	23,4
	After	18,1	16,4	20,3
2	Before	20,4	8,4	23,2
	After	19,1	12,1	23,0
3	Before	20,0	7,3	23,3
	After	20,9	12,9	25,8

The pupils of the 2nd class showed changes in the self-evaluation indicators for the parameter ‘Friend’ at the level of significant differences after the experimental work of $p = 0.027$, while $p \leq 0.05$ %. The pupils of grade 3 showed changes in self-evaluation indicators in the parameter ‘Friend’ at the level of significant differences after the experimental work, $p = 0.028$, at $p \leq 0.05$ %.

4. CONCLUSION

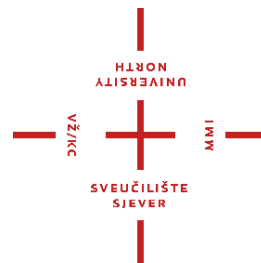
ASD is characterized by impairments of cognitive and emotional-volitional systems, often combined with retarded mental development and requiring a special complex impact. In the course of the study, a procedure for evaluating the effectiveness of *Variabili* art therapy technology was developed and tested. The investigation of corrective work was made on children of primary school age with ASD and a retarded mental development (cerebra organic genesis according to K. Lebedinskaya). In the course of the study it was proved that the use of the technology has such called a corrective effect on the development of cognitive functions (graph-motor skills, which is obvious) and improves the formation of self-esteem. Such methods have a positive effect on the development of the emotional-volitional sphere. Evaluation of the effectiveness of the application of the art therapy technology under study on wider samples of the age and spectrum of an illness will allow making more substantiated and accurate conclusions about the effectiveness of the technology and allow working out a methodology for its application.

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