

# Development of Creative Potential of Pupils with Mixed Specific Developmental Disorders

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**Abstract:** *Objective:* The aim of the article is an alternative approach to develop the creative potential of pupils with mixed specific developmental disorders (MSDD).

*Background:* Modern special education should solve one of the urgent problems that are to help children with special educational needs to activate their creative potential.

*Method:* Following the elaborated structure of the development of the creative potential of children with MSDD for the diagnosis of each component, we have selected the following methods: the E. Torrence Creative Thinking Test "Incomplete figures", the graphic technique "Cactus", the technique "Ladder".

*Results:* It organized an empirical study on the creative potential of 10-11-year-old pupils with MSDD with the use of pedagogical experiment. A model of supporting the development of creative potential was developed. In this model, special pedagogical conditions which included a personality-oriented approach, creative educational environment, and pedagogical support, were implemented. The pedagogical experiment was conducted in the framework of the study involving seven schools of Kostanay region of the Republic of Kazakhstan.

*Conclusion:* The results revealed the significant growth in pupils' creativity when implementing the model with the set of pedagogical conditions.

**Keywords:** Personality-oriented approach, modern education, children, urgent problems, pedagogical support.

## INTRODUCTION

Creativity is treated as one of the critical skills of the 21st century, so one of the main goals of education is to develop it in pupils [1], including pupils with special educational needs. Achieving this learning goal will be possible if one assumes that every human being, even a person with severe disorders, has a particular creative potential [2] in the form of "a latent ability to produce original, adaptive work, which is part of an individual" [3]. According to this approach, creativity refers to the subject's activity, to its causative activity, which brings new value.

We agree with the position of V. Drago and K.M. Heilman that the brain mechanisms mediate creativity and disorders of the brain influence creativity in various terms [3]. This also applies to pupils with mixed specific developmental disorders (MSDD). MSDD defined in the ICD-10 (F83) as "a residual category for disorders in which there is some admixture of specific developmental disorders of speech and language, of academic skills, and motor function, but in which none predominates sufficiently to constitute the principal diagnosis. The disorders are usually, but not always, associated with some degree of general impairment of cognitive functions" [4].

The analysis of literature confirms our conviction that despite the widening group of researchers studying specific learning difficulties, the pupil's strengths (internal resources), including creativity [5], and external resources, including teaching support, are rarely recognized [6].

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The opportunity to develop creative potential is provided by the project method that is embedded in the stream of pedagogical progressivism. The theoretical basis of this method was created by J. Dewey, and W. Klipatrick defined it as an intentional act carried out with all one's heart in a social environment [7].

The project is understood as a task that needs to be carried out within a specified time. This task requires undertaking various activities carried out by the pupils independently, but under the guidance of the teacher, and according to the plan previously prepared. The project must teach how to solve the real problems and focus on issues that arouse pupils' interest. The teacher outlines the general framework of the project. Besides, a) he prepares a list of issues; b) defines which skills pupils should acquire and develop; c) presents concepts to be developed in action. Among the theories, pupils choose the ones they want to work on. They independently decide on the ways to implement a particular topic, formulate the problem, interpret it, analyze it and solve it. It is worth emphasizing that the teacher can give the pupils freedom in specifying the discussed issue. The teacher can also propose a more specific topic to be worked out - then it allows young people to choose among the various possibilities of its solution [8].

The project method fits in with the constructivist strategy, since it leads from engagement, through the exploration and transformation of knowledge, to the presentation of products and reflections. The pupil is treated here as an active researcher, a seeker who engages the mind and emotions independently makes choices and assumes responsibility for his/her own learning [9, 10].

Our previous research has allowed us to develop the potential creative structure, clarify the indicators, and identify the levels of the creative potential of pupils with MSDD. The structure of creative potential developed by us contains the following components:

- motivational and value-based component;
- content and operational component;
- emotional and volitional component;
- evaluative and reflective component.

The current study is a part of a project on learning about creative potential and possibilities of facilitating this potential in pupils with MSDD. The above

arguments support the choice of the project method to promote the creative potential of pupils with MSDD. Therefore, actual objectives in this study are searching for strengths (creative potential) in pupils with MSDD and the possibility of developing this potential by teachers in school conditions.

## MATERIALS AND METHODS

For each component, indicators have been identified that have become the basis for determining levels of creative potential. Three levels of the creative potential were distinguished: high, medium and low. The choice of levels was based on the analogous creativity production index (CPI factor) but mainly applied to human aspect [11].

This paper will present only part of the study, the primary purpose of which is to determine the effectiveness of the author's model of supporting pupils with MSDD in the development of their creative potential.

The main goal of the research presented in this article has been operationalized in the form of several research questions:

1. What is the level of cognitive potential of pupils with MSDD before and after the implementation of the original work model by the distinct components:
  - a) motivational and value-based component;
  - b) content and operational component;
  - c) emotional and volitional component;
  - d) evaluative and reflective component?
2. What is the effectiveness of the implemented work model compared to the traditional approach used in pedagogical practice?

To reveal the effectiveness of work model, in addition to the comparison of the results of the same pupils before and after the implementation of the innovative approach, a two-group experimental plan was applied, divided into experimental and control groups with two measurements – an initial one and a final one.

## Hypothesis

It is assumed that the implementation of the model of developing creative potential in the educational

process leads to a rise in the level of creative potential in pupils with MSDD. The increase in creative potential will be higher in pupils of the experimental group as compared to the pupils of the control group.

To diagnose the motivational and value component of the creative potential of children with MSDD, we used the E. Torrence Creative Thinking Test (TTCT) "Incomplete figures" [12], which aims to identify pupils' creative motivation and creative activity. Then the recipients were offered a test called "The Creativity Assessment Packet" by F. Williams [13] in the modification of E.E. Tunik for the study of the content and operational component, the criteria of which included creative skills, ability and capability to create something new, original.

The graphic technique by M.A. Panfilova "Cactus" [14] is proposed for diagnostics of emotional and volitional component, in particular, resistance to stress and susceptibility to aggression.

The evaluative and reflexive component, the criterion of which was the ability of pupils to give an adequate self-assessment as well as a reflection, was diagnosed using the technique "Ladder" by V.G. Shchur [15].

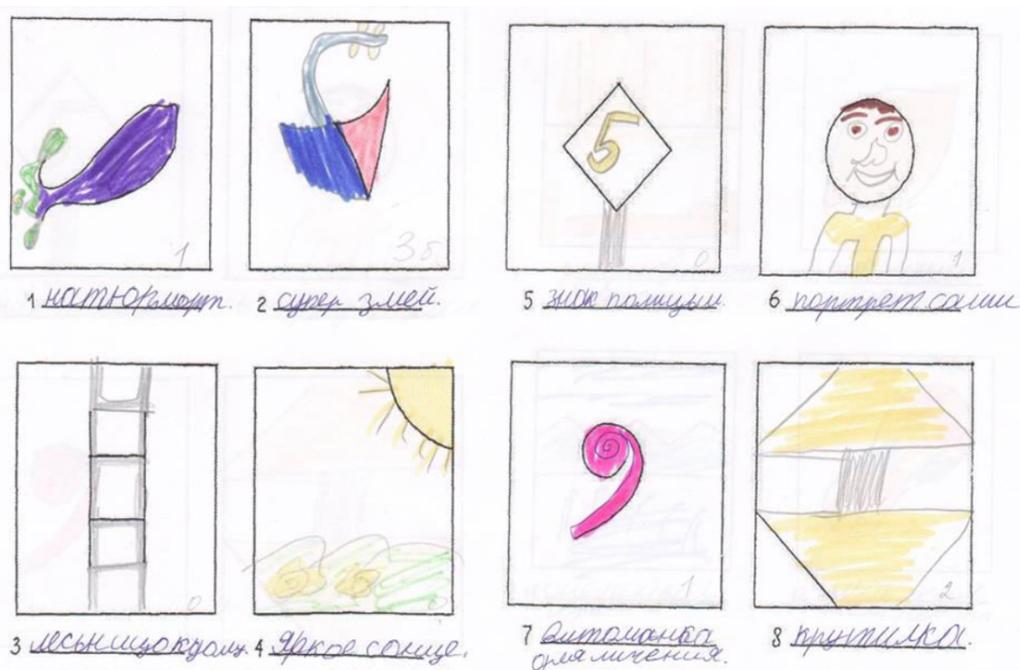
The analysis of the results of the preliminary stage (the initial evaluation – pre-test) allowed us to identify the control and experimental groups (Figure 1).

At the control stage of the experiment (the final evaluation – post-test), the same methods used at the preliminary stage, and a comparative analysis carried out.

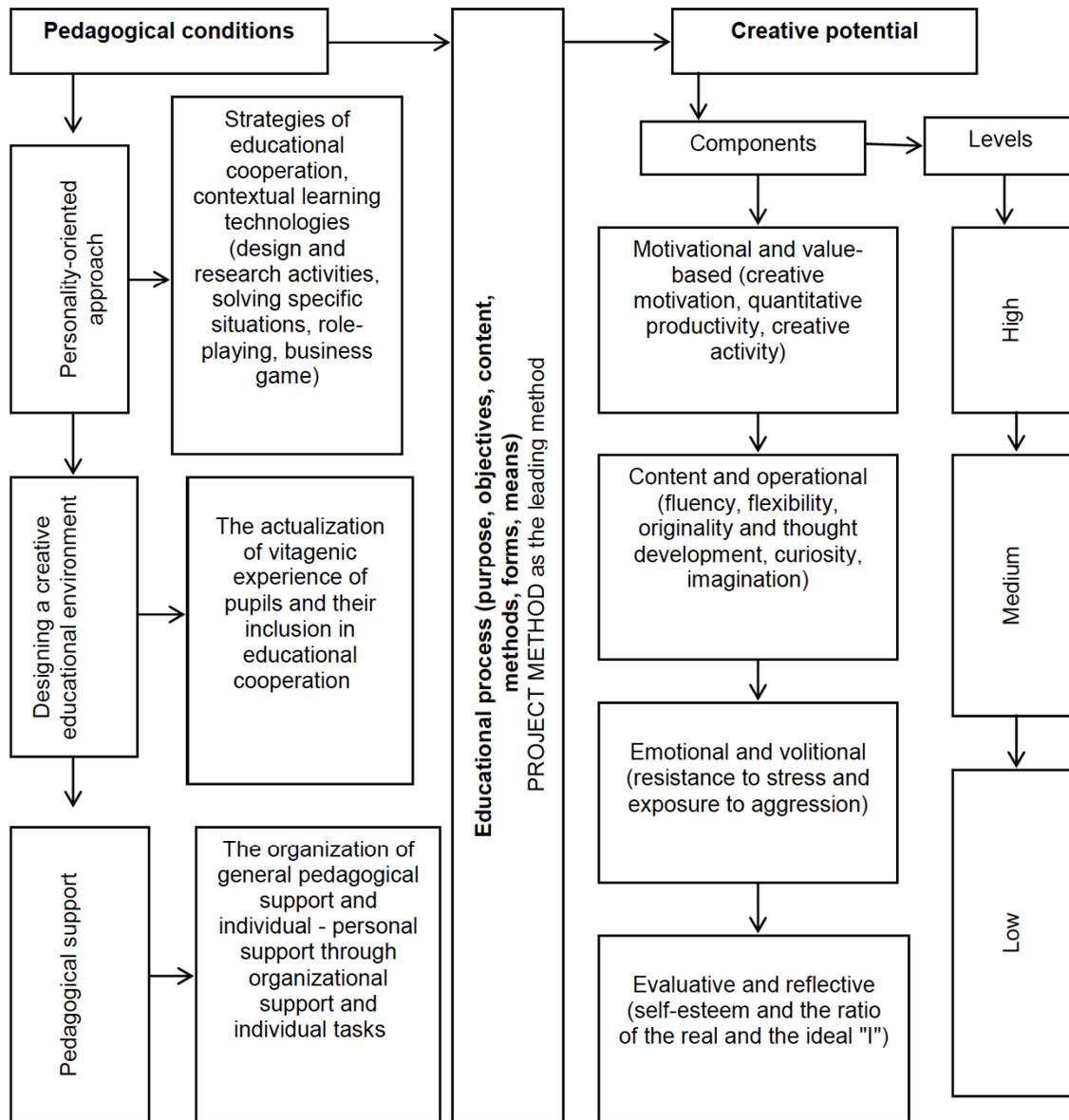
At the formative stage of the pedagogical experiment, the control group attended the lessons conducted on traditional methods where it underwent no particular changes. In the experimental group, we introduced the model of development of the creative potential of pupils with MSDD.

Based on the analysis of psychological and pedagogical literature, we have developed a model of development of the creative potential of pupils with MSDD, which is presented in Figure 2. It consists of the Pedagogical conditions block and Educational process block that are directly related to the Creative potential block. Pedagogical conditions are defined by, personality-oriented approach, designing and creative educational environment, and pedagogical support. The method of projects interwoven into the educational process, in which the pupils' research activity was of great importance.

The first pedagogical condition is the use of the personality-oriented approach, which aimed at the organization of intensive independent cognitive activity of pupils with MSDD. This condition effectively implemented through the use of educational cooperation strategies/technologies and contextual



**Figure 1:** Graphic materials on the preliminary stage of the experiment (pre-test).



**Figure 2:** Model of development of the creative potential of pupils with MSDD.

learning technology in the educational process. These technologies combine active learning methods: project-research activities, solution of specific situations, role-playing game, business game.

Personality-oriented learning involves designing a creative educational environment in which the creative potential of pupils with MSDD will develop favourably. This explains the choice of the second pedagogical condition – the design of a creative educational environment, the peculiarities of which are oriented to the vitagenic experience of pupils with MSDD, and their inclusion and engagement in educational cooperation.

At the same time, the process of developing the creative potential of pupils with MSDD is complex. It

requires great intellectual, physical, and emotional costs, and therefore they need pedagogical support. This determines the choice of the third pedagogical condition – providing pedagogical support to pupils with MSDD in the process of developing their creative potential.

To achieve the goal of developing the creative potential of pupils with MSDD, the teacher needs to systematically introduce the set of pedagogical conditions into the educational process.

The pedagogical experiment was implemented in the school year 2018/2019 in the period from September 2018 to May 2019. It lasted for a total of nine months. A total of 7 schools on the territory of

Kostanay region, in the number of 117 pupils of 10-11-year-old with a diagnosis of MSDD participated in the study. The research was carried out in accordance with the principles of ethics. Written consents of parents were obtained. Also permission from the "Department of education of akimat of the Kostanay region" to conduct an experiment based on urban schools of Kostanay region was issued.

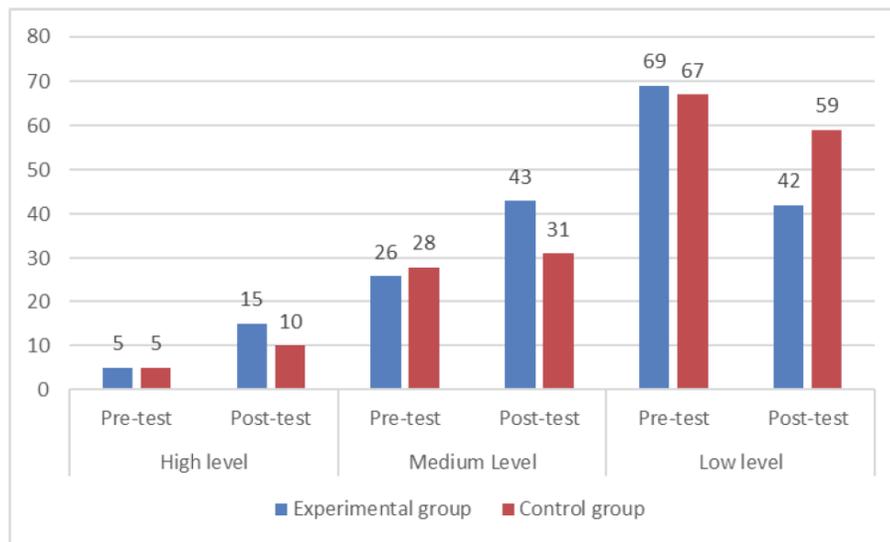
**RESULTS**

The results of the study revealed that the introduction of an experimental model in the educational process leads to a rise in the level of

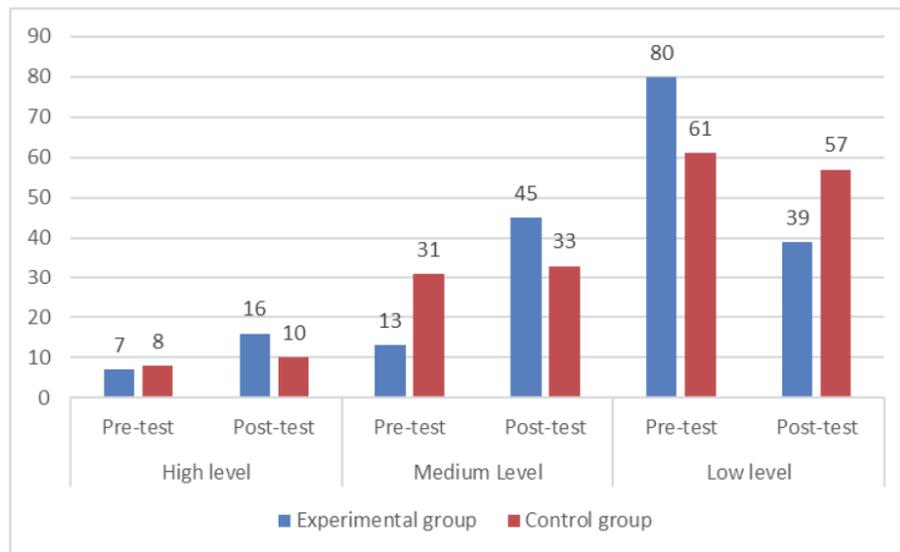
development of the creative potential of pupils with MSDD.

We observed a decrease in the number of pupil in experimental groups with a low level of development of, a) the motivational and value-based component by 27% (Figure 3); b) the content and operational component by 41% (Figure 4); c) the emotional and volitional component by 15% (Figure 5); d) the evaluative and reflective component by 8% (Figure 6).

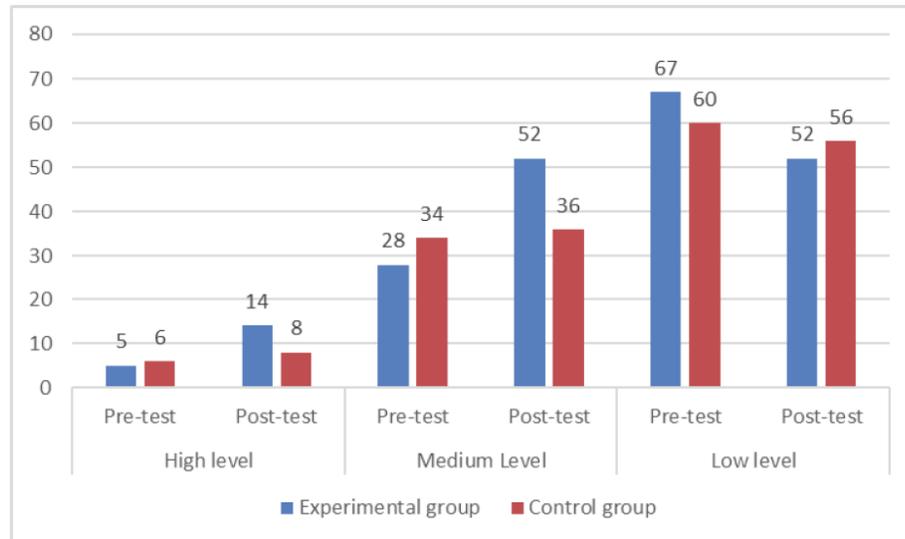
Increase in the number of pupil with MSDD was noted in experimental groups with a high level of development of a) the motivational and value-based



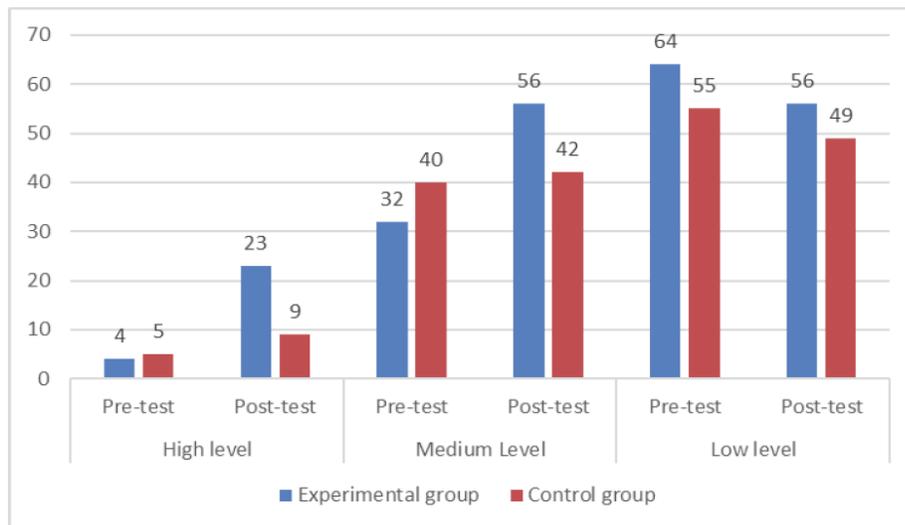
**Figure 3:** Results of pupils before and after the implementation of the experimental model. The motivational and value-based component of creative potential.



**Figure 4:** Results of pupils before and after the implementation of the experimental model. The content and an operational component of creative potential.



**Figure 5:** Results of pupils before and after the implementation of the experimental model. The emotional and volitional component of creative potential.



**Figure 6:** Results of pupils before and after the implementation of the experimental model. The evaluative and reflective component of creative potential.

component by 10% (Figure 3); b) the content and operational component by 9% (Figure 4); c) the emotional and volitional component by 9% (Figure 5); d) the evaluative and reflective component by 19% (Figure 6).

There were also changes in the control group, but these changes turned out to be insignificant. It was noticed an increase in pupils with a high level of a) the motivational and value-based component by 5% (Figure 3); b) the content and operational component by 2% (Figure 4); c) the emotional and volitional component by 2% (Figure 5); d) the evaluative and reflective component by 4% (Figure 6).

The results show the dynamics of the creative potential of pupils with MSDD in both groups. The comparative analysis reveals significantly higher indicators of the creative potential in pupils of the experimental group compared to the control group. Thus, our hypothesis was verified: the more positive changes were observed in the MSDD pupils learning according to the experimental model in comparison with the pupils covered by traditional teaching.

## DISCUSSION

Analysis of the results obtained by control and experimental groups allowed us to identify high, medium and low levels of the development of creative

potential. Following the selected criteria, the characteristic of each level is given below,

The *following features characterize the high level* of development of the creative potential of pupils with MSDD; the pupil works enthusiastically, concentrated, with great productivity, shows creativity; generates a large number of original and non-standard ideas, his/her diversity is visible, he/she is able to embellish a simple idea; curious, interested; imagines what never was created before, goes beyond the boundaries of the real world. Aggression is absent, he/she demonstrates openness, self-confidence, optimism, extroversion; quite realistically assesses selves, explains the actions, referring to real achievements, believes that the assessment of an adult is the same or slightly higher than his/hers.

The *medium level* is represented by the following characteristics: the pupil works in a concentrated way, the productivity, creativity is shown randomly; he/she offers standard and conventional ideas, she/he deviates from the obvious things, he/she is characterized by the situational generation of ideas; she/he is inquisitive, but there is no interest; the real world goes beyond the boundaries only in the random regime; aggression is absent, but the pupil is often impulsive, anxious, demonstrate openness, confidence in the need for love, care and support; he/she evaluates him/herself in the inadequate form, he/she places him/herself higher than, in his/her opinion, would adults place.

The *low level* of development of creative potential of pupils is represented by the following characteristics: he/she works without initiative in accord with the template, productivity is low, creativity is not shown, the pupil gives one appropriate version of the standard idea, he/she does not deviate from the obvious things, the pupil cannot ennoble the idea, he/she is not inquisitive, there is no interest, he/she does not go beyond the boundaries of the real world; clear signs of aggression, frequent impulsiveness, there is uncertainty and dependence, secrecy anxiety, the presence of feelings of loneliness and rejection, there are tendencies to alienation and opposition; an inadequate self-assessment, overestimating or underestimating of self-esteem, she/he cannot comment the assessment of adults.

The present study was an attempt to investigate the effectiveness of the influence of the model on the

development of the creative potential in pupils with MSDD. An analysis of the literature has shown that the creative potential of pupils with special educational needs is actively developed in the teaching practice of other countries [16].

The authors showed, on the one hand, that dyslexic pupils are creative [5], on the other hand, that the support for dyslexic children by teachers (external resources) is not enough [6]. Data presented in the article are consistent with the reports of other scientists. The results of the pedagogical experiment revealed that under the influence of intentional and systematic work of teachers, it is possible to develop the creative potential of pupils with MSDD.

Although the results of the pupils were not so spectacular in all the tested components compared to the control group, it was without a doubt that our study showed that the implementation of the model including the complex of pedagogical conditions had several advantages:

- increased pupils' motivation;
- increased their ability to generate original and non-standard ideas;
- inculcated the creative consciousness;
- created the environment for the development of creative potential;
- improved the learning skills of pupils with MSDD by expanding their capabilities in the process of project-research activities;
- was as a means of self-development.

The similar benefits of supporting the creativity of pupils at the Polish school were noted by M. Galewska-Kustra [17].

Effectiveness of the model depends to a large extent on the time of work with the use of innovative approaches and teachers. It seems that the implementation of the model of creative potential permanently would contribute to more favourable changes. Moreover, our observations also show that it is necessary to convince teachers to use innovative and non-standard methods in educating pupils with MSDD. And only then train them the use of new teaching-learning technologies, such as the project-research activities.

## CONCLUSIONS

Modern education should contribute to the development of the creative potential of pupils with MSDD, which requires the implementation of a system of pedagogical conditions. The method of educational requirements, the model and its scientific, methodological and technological support are the basis for the development of the creative potential of pupils with MSDD. The use of a personality-oriented approach as a strategy for the development of creative potential aimed at organizing an intensive independent creative activity of pupils with MSDD. Designing an innovative educational environment, the peculiarities of which is an orientation to the vitagenic experience of pupils with MSDD and their inclusion in educational cooperation allows to increase abilities to create new, original ideas. Providing pedagogical support for pupils with MSDD in the process of developing their creative potential allows forming the necessary emotional background of goodwill and cooperation.

The results showed that in pupils with MSDD, in the experimental groups in which the model was introduced, the level of creative potential increased. The introduction of the model ensured the effectiveness of the process of developing the creative potential of pupils with MSDD, so we have achieved our research objectives. The authors believe that the model of developing creative potential implemented in practice in the educational process of schools of Kostanay region can be reproduced in practice in the educational process of other schools in the Republic of Kazakhstan.

## ACKNOWLEDGEMENTS

The authors are grateful to the leadership of the state institution "Education Department of the Akimat of Kostanay Region", as well as to the administrative and teaching staff of schools of Kostanay region: secondary school No. 14 of Kostanay, secondary school No. 21 of Kostanay, secondary school No. 22 of Kostanay, secondary schools No. 13 and No. 17 of Rudny, secondary schools No. 1 and No. 6 of Lisakovsk, which made this study possible.

## REFERENCES

- [1] Barbotá B, Besançon M, Lubart D T. Creative potential in educational settings: its nature, measure, and nurture. *Education* 2015; 3-13.  
<http://dx.doi.org/10.1080/03004279.2015.1020643>
- [2] Nęcka E. *Psychologia twórczości*. Gdańsk: GWP 2001.
- [3] Drago V, Heilman KM. *Encyclopedia of Human Behavior (Second Edition)*. New York: Academic Press, 2012.
- [4] International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10)-WHO. 2016. Available at: <https://icd.who.int/browse10/2016/en#/F83>.
- [5] Rak K. Zdolności twórcze u młodzieży z dysleksją – doniesienia z badań. In: Kostka-Szymańska M, Krasowicz-Kupis G. (Eds.) *Dysleksja: Problem Znany Czy Nieznany?* Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej 2007.
- [6] Gosk U, Dominiak-Kochanek M, Kulesza EM. Wybrane zasoby wewnętrzne i zewnętrzne młodzieży z dysleksją rozwojową i młodzieży bez dysleksji rozwojowej. *Badania porównawcze*. In: Olubiński A, Suska-Kuźmicka M. (Eds.) *Od Źródeł Zagrożeń i Patologii do Profilaktyki i Wsparcia*. Tom III. Kraków: Impuls 2015.
- [7] Szymański M.S. *O metodzie projektów*. Warszawa: Wydawnictwo Akademickie "Żak" 2000.
- [8] Projekt z klasą. Available at: <https://www.projektzklasa.pl/o-metodzie-projektow/istota-metody-projektow.html>.
- [9] Gołębiak BD. *Uczenie metodą projektów*. Warszawa: WSiP 2002.
- [10] Nowak J. Metoda projektów a efektywność kształcenia na etapie edukacji wczesnoszkolnej. In: Grzesiak J. (Ed.) *Ewaluacja i Innowacje w Dialogu. Ewaluacja w Dialogu-Dialog w Ewaluacji*. Poznań – Kalisz – Konin: Wydawnictwo UAM i PWSZ w Koninie 2008.
- [11] Marrocu E, Paci R. Education or creativity: what matters most for economic performance? *Economic Geography* 2012; 88(4): 369-401.
- [12] Torrance EP. Predicting the creativity of elementary school children and the teacher who "made a difference". *Gifted Child Quarterly* 1981; 25: 55-62.
- [13] Williams F. The creativity assessment packet. 1993. Available at: [http://www.creativeideasforyou.com/creativity\\_testing.html#Creativity%20Assessment%20Packet](http://www.creativeideasforyou.com/creativity_testing.html#Creativity%20Assessment%20Packet).
- [14] Panfilova MA. The method of "Cactus". *Obruch* 2000; 5: 12-13.
- [15] Shchur VG. Methods of study of the pupil's perception of other people's attitude. *Personality Psychology: Theory and Experiment* 1982; 3: 3-7.
- [16] Głodkowska J, Giryński A. *Kreatywność osób z niepełnosprawnością intelektualną – czy umiemy myśleć inaczej?* Kraków: Wydawnictwo naukowe "Akapi" 2009.
- [17] Galewska-Kustra M. *Szkoła wspierająca twórczość uczniów. Teoria i przykład praktyki*. Toruń: Wydawnictwo Adam Marszałek 2012.