

PSYRGGU 2020

Psychology of Personality: Real and Virtual Context

FEATURES OF GIFTEDNESS MANIFESTATION IN PRESCHOOL CHILDREN

Elena Belova (a)*

*Corresponding author

(a) Psychological Institute of Russian Academy of Education, Mokhovaya, 9(4), Moscow, Russia,
elenasbelova@mail.ru

Abstract

The problem of the development and support of giftedness refers to the urgent problems of modern psychology of personality. Early manifestations of giftedness can be detected at preschool age. Preschool childhood is an important stage in the personal development and disclosure of the child's talents. The study was carried out in line with the approach to the analysis of children's giftedness proposed by A.M. Matyushkin: giftedness was considered to be prerequisite for the formation and development of a creative personality; and creativity stood out as the basis of giftedness. The study was aimed at studying the features of the manifestation of giftedness in modern preschoolers. The study involved 420 children 5-7 years old. Among them, 78 preschool children with signs of giftedness were identified. The emphasis in the study was on the analysis of features in creative and intellectual indicators of their development in the aspect of intra-group differences. As a result of using cluster analysis, three clusters were identified: Cluster 1 and cluster 3 with identified differences in creative indicators had a certain similarity in some intellectual indicators. Cluster 2 was very different from other clusters. Part preschoolers of Cluster 2 revealed development difficulties (speech, attention and self-organization). The results obtained make it necessary to take into account the variability of the disclosure of children's giftedness, both in the process of diagnostic procedures and in the implementation of educational programs for the development and support of the abilities and gifts of children at the stage of preschool childhood.

2357-1330 © 2020 Published by European Publisher.

Keywords: Giftedness, preschool children, creative potential.



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

1.1. Preschool childhood as an important stage in the disclosure of giftedness

One of the relevant problems of modern psychology of personality is the problem of the development and support of giftedness. Signs of giftedness can be distinguished comparatively early, even in preschool age. Researchers are considering preschool childhood to be an important stage in the personal development and disclosure of a child's abilities and talents (Clark, 2013; Colombo et al., 2009; Martsinkovskaya et al., 2019; Silverman, 2012; Smutny & von Fremd, 2010; Veraksa, 2019).

In modern studies of children's giftedness, despite the differences in its interpretations, the emphasis is on analyzing it as a developing complex structure. In the early stages of children's development, researchers turn to the concept of "potential" when highlighting a key indicator of giftedness (Melik-Pashaev et al., 2014; Monks & Ipenburg, 2014; Silverman, 2012). It should be noted here, that the age of 5-8 years is often called the "golden period" of children's creativity: children «create the world», fantasize, experiment, creatively express themselves. Vividly expressed creative manifestations, as well as a great desire to learn new things, are recognized by most experts as significant indicators of children's giftedness.

1.2. High creative potential in preschool age

From our point of view, great opportunities for the study of giftedness in preschool childhood are inherent in the approach proposed by Matyushkin (1990). In accordance with his concept of "Creative giftedness", giftedness is a prerequisite for the formation and development of a creative person. The basis of giftedness is high creative potential. Its most common characteristic and structural component are cognitive needs. Gifted children have high creative potential, and the dominant cognitive motivation is expressed in the form of research and search activity.

Signs of a high creative potential for a preschooler can be: persistent cognitive motivation, cognitive activity, advancing in the development of thinking and speech, the desire for creativity in the game and other activities. Matyushkin (1990) emphasized the need to support and encourage early talents.

If the child has high selectivity of the new being studied, and the preferences of sounds (colors, shapes, etc.) are clearly distinguished, cognitive activity is primarily expressed in the form of perception of music (colors, etc.), then the child tries to express his experiences and impressions in creativity.

Relatively early manifestations of giftedness in artistic fields can be detected. Some extraordinary preschoolers show signs of talent in the field of mathematics. Special abilities in playing chess sometimes manifest as early as 4-6 years. If the high creative potential of a preschooler is revealed in the social sphere: relations with children and adults, games with other children, it is easy to notice the emerging leadership orientation and advancing peers in social development.

1.3. Variety of giftedness manifestations

According to research data, there are certain traits associated with giftedness; but each gifted child can exhibit these characteristics to a different degree and intensity (Gur, 2011; Machu, 2012; Smutny & von Fremd, 2010). The characteristics of giftedness that are revealed often manifest themselves differently among individual preschool children (Brighton & Jarvis, 2017). A group of extraordinary preschoolers is not homogeneous. To reveal the characteristics of gifted preschoolers, more research should be done. This

could not only contribute to disclosure of their potential, but also have a positive impact on the well-being of gifted children (Delaune & Tapper, 2015).

2. Problem Statement

The specifics of manifestation and development of children's giftedness in preschool age remains insufficiently investigated (Brighton & Jarvis, 2017; Hertzog & Gadzikowski, 2017; Sutherland, 2012). In modern Russian psychology, among studies devoted to various aspects of giftedness, the least studies (4.2%) were those of preschool children (Petrova, 2019). This feature is characteristic not only of Russian psychology, but also of the world, although the great importance of this age stage in revealing giftedness is recognized. It should be noted here, that the generation of modern preschoolers is growing in the new information environment, which has an ambiguous effect on their intellectual and personal development (Martsinkovskaya et al., 2019; Veraksa, 2019). The study of this influence constitutes a problem field in various areas of psychology, including the psychology of giftedness. There is a need for more the empirical studies to understand features of giftedness in modern preschool children.

3. Research Questions

This study addressed the following questions:

3.1. Question 1

Is it possible to distinguish typological features in the manifestation of giftedness in modern Russian preschoolers?

3.2. Question 2

How are their differences in creative and intellectual indicators of development expressed?

4. Purpose of the Study

The study was aimed to investigate features of the giftedness manifestation in preschool children. The implementation of this purpose involved solving the following research objectives:

- identifying preschoolers with signs of giftedness;
- analysis of the variability of the manifestations of giftedness in these children.

The theoretical basis of the study was fundamental provisions of the concept "Creative giftedness" of Matyushkin (1990): high creative potential was considered as the basis of giftedness, which can manifest itself already in preschool childhood.

5. Research Methods

5.1. Participants

The study involved 420 children 5-7 years old (mean age = 6,2 years old) who attended kindergartens in Moscow.

5.2. Methods

A large diagnostic complex of methods / techniques was used. It included:

- Torrance Tests of Creative Thinking (TTCT);
- Raven Progressive Matrices (color version);
- Method of Express-Diagnostics of Intelligent Ability (MEDIA), form A (Shcheblanova et al., 1994);
- observing children during games and activities;
- conversations with children;
- expert assessment of the results of children's creativity (drawings, crafts, etc.);
- surveys of parents and educators about features of the development of preschool children.

Qualitative and quantitative data analysis was carried out. The statistical package SPSS Statistics 22 was used.

5.3. Procedure

The study included 2 stages: at the first stage, the developmental features of all children were studied, and a group of preschoolers with signs of giftedness was identified; at the second stage, a detailed analysis of their development was carried out with the identification of intra-group differences.

6. Findings

6.1. Highlighting the group of gifted preschoolers: indicators of development and their relationship

At the first stage, in the data analysis process, a group of children (N = 78) with high creative potential, the main component of giftedness, was identified. The selection criteria were: expressed creative manifestations in the game/other activities of preschoolers and high results of Torrance Tests (TTCT): the total test score (T) was equal to or exceeded 60 points. Considering that preschool age is only the initial stage of unlocking creative potential, this group also included preschool children who showed a high level (60 points and above) of one / two test indicators of creative thinking and the overall test score was above average ($T > 55$).

Creativity involves a certain level of intellectual development, which, according to experts, should be above average, but not ultra-high. Taking into account that in the diagnosis of giftedness of preschool children the results of their intellectual development are informative, at the second stage of the study, an analysis of the indicators of preschool children according to the Raven Matrices and Express-Diagnostics Method of Intelligent Ability (MEDIA), as well as the interconnections of test indicators, was carried out.

The performed correlation analysis made it possible to establish a positive relationship between the final indicators of extraordinary preschool children by the Raven Matrices and MEDIA ($r = 0.491$, $p < 0.01$). Only a part of preschoolers the achieved success levels in completing the tasks of these tests turned out to be the same. Despite the fact that these methods are aimed at diagnosis of intellectual abilities, the situation confirmed once again: each test has its own specifics in their study.

The results of the Torrance Tests did not reveal a reliable relationship with the results of the Raven Matrices and MEDIA (correlation coefficients did not reach the significance level), that may indicate the features of the disclosure of creative opportunities, which, on the one hand, are important components of cognitive structures in extraordinary preschool children, and on the other hand, have some independence in implementation.

Table 01. Tests results of gifted preschoolers

Tests	Minimum	Maximum	Mean	Std. Deviation
Torrance Tests of Creative Thinking (TTCT)	56,00	78,00	62,3846	5,14524
Raven Progressive Matrices	16,75	30,50	25,0192	3,58156
Method of Express-Diagnostics of Intelligent Ability (MEDIA)	8,00	20,00	14,1923	2,56883

As seen from **Table 01**, the results of the test items preschoolers selected group vary considerably.

6.2. Clusters characteristics

For a more detailed study of intra-group differences and their description by isolating the cluster structure, cluster analysis was used. It was carried out according to the following scheme: first, a hierarchical cluster analysis was carried out, and then, based on its results, the cluster model was calculated using the K-means method.

As a result, three clusters were identified, each of which included extraordinary preschoolers with a similar version of potential development. Table 2 represents the final cluster centers for the three main test indicators.

Table 02. Final Cluster Centers

Tests	Cluster		
	1	2	3
Torrance Tests of Creative Thinking (TTCT)	69,79	59,04	60,76
Raven Progressive Matrices	24,84	21,70	27,73
Method of Express-Diagnostics of Intelligent Ability (MEDIA)	15,16	12,31	15,12

The highlighted clusters can be represented as follows.

Cluster 1 - “Preschoolers with very vivid creative manifestations” - comprised 19 preschoolers (24,36 % of the group) with very high creative indicators, intellectual abilities high or above average.

Cluster 2 - “Creative preschoolers with an average level of intellectual abilities” - made up 26 children (33,33 %), their level of creative expression is approaching high, but their intellectual potential is manifested at an average level. Uneven development is highlighted.

Cluster 3 - “Preschoolers with high creative and intellectual potential” - 33 children (42,31 %). This variant of manifestation of giftedness is most harmonious.

6.3. Clusters differences

After identifying the clusters, the differences in tests parameters were analyzed in more detail. A comparison of clusters 1 and 2 revealed significant differences in all indicators: TTCT ($p = 0.000$), the Raven Matrices ($p = 0.001$), and the MEDIA ($p = 0.002$). These two clusters are very different from each other: all indicators are significantly higher among representatives of cluster 1. With a high degree of significance, cluster 1 also differs from cluster 3: superior in results of TTCT ($p = 0.000$); and with lower results of the Raven Matrices ($p = 0.001$), but according to MEDIA the results reveal similarities. A comparison of clusters 2 and 3 revealed highly significant differences in all indicators: TTCT ($p = 0.011$), the Raven Matrices ($p = 0.000$), and the MEDIA ($p = 0.000$): the results are higher for representatives of cluster 3. But according to the Torrens test, the differences in these clusters are minimal and do not reach a significance level.

Comparative analysis made it possible to more accurately represent the positions of the clusters in relation to each other, taking into account the revealed differences and to identify the areas of intersection of clusters by certain parameters. So clusters 1 and 3 are more distant from cluster 2 than from each other. Cluster 1 exhibits a partial intersection with cluster 3 on results of intellectual abilities (MEDIA).

In cluster 2, test results of the children are slightly lower than in others. The analysis showed that, along with signs of giftedness, there are signs of insufficient development of speech, attention, self-regulation, etc. In preschool age, mental functions and processes go through the stages of formation. Difficulties in development can also occur in preschoolers with signs of giftedness. In this respect, it is very important to identify such preschoolers with uneven development in time and to support them not only in unlocking potential, but also in overcoming development difficulties.

7. Conclusion

The results of an experimental study expand the scientific understanding of the manifestation of giftedness in modern preschoolers.

The use of a wide range of diagnostic techniques, taking into account age-specific characteristics in the development of preschool children, allowed us to single out a group of children with high creative potential - the main component of giftedness. These preschoolers were distinguished by a desire for creative manifestations in various fields of activity, and primarily, in the game. At the same time, a variation in the results of their tests tasks was revealed, which declared intra-group differences.

The results are consistent with data from other researchers (Gur, 2011; Machu, 2012; Smutny & von Fremd, 2010) on the heterogeneity of a group of preschool children with signs of giftedness.

There were distinguished typological features of the giftedness manifestation of modern Russian preschoolers in our study. It was focused on analyzing differences in creative and intellectual indicators of children's development.

As a result of using cluster analysis, three clusters were identified, each of which included extraordinary preschoolers with similar developmental characteristics and at the same time different from the characteristics of representatives of other clusters. Cluster 1 "Preschoolers with very bright creative manifestations" and cluster 3 "Preschoolers with high creative and intellectual potential" with identified differences in creative indicators had a certain similarity in some intellectual indicators. Cluster 2 "Creative

preschoolers with an average level of intellectual abilities” was very different from other clusters. The test results for children in cluster 2 were weaker. Part of these preschoolers, along with signs of giftedness, revealed developmental difficulties (speech, attention and self-organization). These children need both support in unlocking potential and help in overcoming difficulties.

The position that gifted children already stage can distinguish developmental features and their educational needs at the preschool age (Brighton & Jarvis, 2017; Hertzog & Gadzikowski, 2017; Sutherland, 2012) is also confirmed in our study. The results obtained make it necessary to take into account the variability of the disclosure of children's giftedness, both in the process of diagnostic procedures and in the implementation of educational programs for the development and support of the abilities and gifts of children at the stage of preschool childhood.

Promising areas for further research include: expanding the scope of highlighting the features of giftedness among preschoolers, including the analysis of the peculiarities of their motivation and social development.

References

- Brighton, C. M., & Jarvis, J. M. (2017). Early Identification and Intervention in Gifted Education: Developing Talent in Diverse Learners. In J. M. Kauffman, D. P. Hallahan, & P. C. Pullen (Eds.), *Handbook of Special Education: Second Edition* (2nd ed., pp. 882-893). Routledge. <https://doi.org/10.4324/9781315517698>
- Clark, B. (2013). *Growing up Gifted: Developing the Potential of Children at Home and at School* (8th ed.). Pearson Education.
- Colombo, J., Shaddy, D. J., Blaga, O. M., Anderson, C. J., & Kannass, K. N. (2009). High Cognitive Ability in Infancy and Early Childhood. In F. D. Horowitz, R. F. Subotnik, & D. J. Matthews (Eds.), *The Development of Giftedness and Talent Across the Life Span* (pp. 23–42). American Psychological Association.
- Delaune, A., & Tapper, L. (2015). The Well-being of Gifted Young Children: Perceptions, Pedagogy, and Governance. *He Kupu*, 4(2). <https://www.hekupu.ac.nz/article/well-being-gifted-young-children-perceptions-pedagogy-and-governance>
- Gur, C. (2011). Do Gifted Children Have Similar Characteristics? Observation of Three Gifted Children. *Procedia - Social and Behavioral Sciences*, 12, 493–500. <https://doi.org/10.1016/j.sbspro.2011.02.061>
- Hertzog, N. B., & Gadzikowski, A. (2017). *Early Childhood Gifted Education: Fostering Talent Development*. National Association for Gifted Children.
- Machu, E. (2012). The Manifestations of Gifted Children from the Perspective of their Parents. *e-Pedagogium*, 12(4), 32-43. <https://doi.org/10.5507/epd.2012.048>
- Martsinkovskaya, T., Gavrichenko, O., Soboleva, M., & Preobrazhenskaya, S. (2019). Dynamics Of Children's Cognitive And Personal Development In The Information Space. *The European Proceedings of Social & Behavioural Sciences – EpSBS*, LXIV, 349-355. <https://doi.org/10.15405/epsbs.2019.07.45>
- Matyushkin, A. (1990). Gifted and Talented Children: the Nature of Giftedness, Screening, Development. *European Journal of High Ability*, 1(0), 72-75.
- Melik-Pashaev, A., & Novlyanskaya, Z. (Eds.), Adaskina, A. & Chubuk, F. (2014). *Istoki i Specifika Detskogo Hudozhestvennogo Tvorchestva* [Sources and Specifics of Children's Art]. Navigator [in Russian].
- Monks, F., & Ipenburg, I. (2014). *Odarjonnye deti* [Gifted children]. Kogito-Center [in Russian].
- Petrova, S. O. (2019). Metodologija i Metody Izuchenija Odarennosti v Sovremennyh Rossijskih Psihologicheskikh Issledovanijah [Methodology and Methods of Studying Giftedness in

- Contemporary Russian Psychological Studies]. *Voprosy Psikhologii [Issues of Psychology]*, 4, 78–87. [In Russian]
- Shcheblanova, E. I., Averina, I. S., & Zadorina, E. N. (1994). *Metodika Jekspress-dagnostiki Intellektual'nyh Sposobnostej Detej 6-7 Let* [Methods of Express-diagnostics of Intellectual Abilities of Children 6-7 Years old]. Printer. [In Russian]
- Silverman, L. K. (2012). *Giftedness 101*. Springer Publishing Company.
- Smutny, J. F., & von Fremd, S. E. (2010). *Differentiating for the Young Child: Teaching Strategies Across the Content Areas, PreK–3* (2nd ed.). Corwin.
- Sutherland, M. (2012). *Gifted and Talented in the Early Years: Practical Activities for Children aged 3 to 6* (2nd ed). SAGE Publications Ltd.
- Veraksa, N. E. (2019). Sovremennoe Doshkol'noe Obrazovanie Nachinaet Uchityvat' Rol' Rebjonka v Obrazovatel'nom Processe [Contemporary Early Childhood Education Begins to Consider the Child's Role in the Educational Process]. *Sovremennoe Doshkol'noe Obrazovanie [Preschool Education Today]*, 13(3), 4-12. [In Russian]