

Socio-Psychological Aspects of Childhood Creativity Development: A Study on Unique Traits

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Abstract This paper explores the socio-psychological facets associated with the growth of creative skills in primary school children. The driving forces behind the enhancement of these creative abilities primarily include the unique dynamics of family relationships and parental attitudes towards their children, the standing of siblings, the nature of parent-child interactions, and the influence of media. This study also investigates the gender-related differences in the development of creative abilities among primary school-aged children.

1 INTRODUCTION

In contemporary psychology, the issue of fostering creative skills in primary school children remains pertinent. The investigation has unveiled several overarching aspects pertaining to the development of creative abilities, which encompass a range of biological and social factors contributing to the emergence of this phenomenon in the analysis of creative abilities. Nevertheless, there is currently no unanimous consensus on the content and structure of creative abilities, and even the very concept of creative abilities lacks a clear definition, just as comprehensive research on the factors influencing the formation and growth of creative abilities in young children of school age.

The objective of this study was to examine the socio-psychological attributes associated with the evolution of creative abilities in primary school children. The research encompassed up to 300 young schoolchildren.

2 METHODS OF RESEARCH

In our study, we employed the following methodologies: the author's socio-psychological questionnaire, "How did your child's imagination

develop?", "Generalization of concepts", "Methodology for studying Guilford's creative abilities", and "Continue the signs" by Dyachenko O.M.

During the initial phase of the research, a dedicated socio-psychological survey was administered to parents, followed by a statistical analysis based on their responses to the survey questions. The socio-psychological questionnaire, in total, comprised ten questions.

3 RESULTS AND DISCUSSIONS

Questionnaire "How many children do you have?"

According to the responses, 3.3% of families have 1 child, 20.5% of families have 2 children, 55% of families have 3 children, 17.9% of families have 4 children, 2.6% of families have 5 children, and 0.7% of families have 6 children.

Regarding the question "How do parents assess their children's creative abilities?", the findings revealed that 50 (33.1%) parents rated their children's abilities as "moderate," while 101 (66.9%) parents rated their children's abilities as "high." Interestingly, the option

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for "low level" was provided, but no parent chose this option.

When asked about the creativity of their children in the family, the results were as follows: 66 parents

considered their first child to be highly creative, and 43 parents saw the second child as highly creative. In terms of sibling status, 31 parents perceived their third child as highly creative, and 9 parents regarded the fourth child as highly creative (Figure 1).

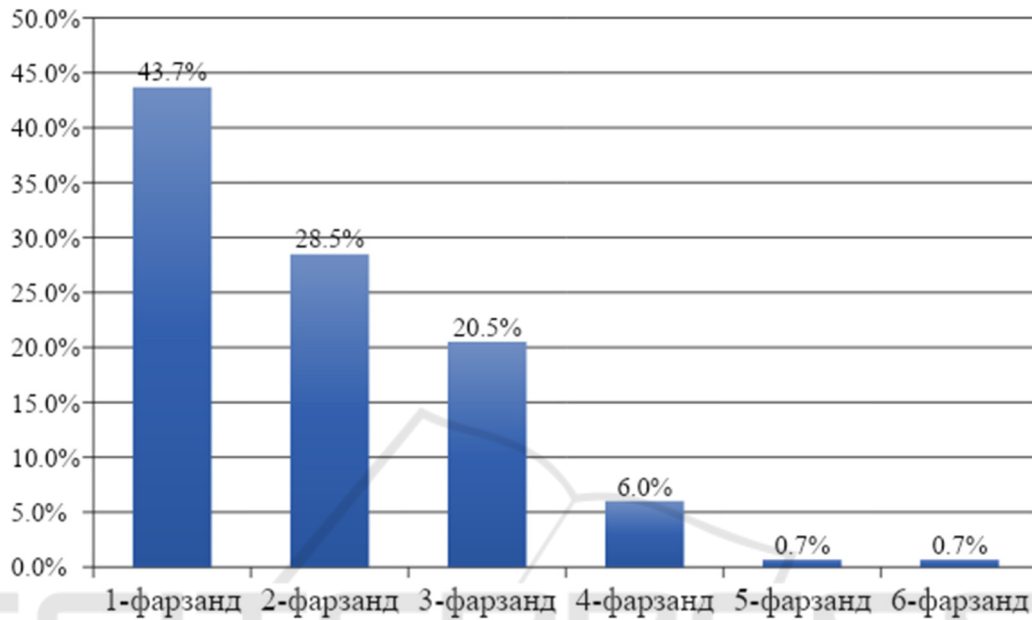


Figure 1. Information on how many children in the family, according to parents' opinions, possess creative abilities

The analysis revealed the following results regarding the number of children in the family and how many

of them are perceived by parents as possessing creative abilities (Table 1).

Table 1. Information on the number of children in the family and the perception of parents regarding the presence of creative abilities

Children who possess creative abilities in the family	Number of children in the family						Total
	1	2	3	4	5	6	
1 st Child	5	1	3	5	1		66
2 nd Child		1	2	7	1		43
3 rd Child			2	7	1		31
4 th Child				8	1		9
5 th Child					1		1
6 th Child						1	1
Total	5	3	8	2	5	1	151

As depicted in this table, families with only one child showed unanimous high appreciation for their child's creative abilities. Among parents with two children, 19 (approximately 63%) rated the creative

ability of the first child, and 11 (37%) rated the second child. In families with three children, 36 (43%) parents acknowledged the creative ability of the first child, 24 (29%) of the second child, and 23

(28%) of the third child. However, the situation changes significantly for families with four children. Out of 27 parents with four children, 5 (19%) recognized the creative ability of the first child, 7 (26%) of the second child, another 7 (26%) of the third child, and 8 (30%) of the fourth child. This indicates that families with four children tend to overestimate the creative abilities of the later-born

children, especially the fourth child, rather than the first child. Conversely, parents of five or more children treated all their children equally without making distinctions.

The subsequent question addressed the age at which parents first noticed their children's creative ability, revealing the following outcomes (Table 2).

Table 2: Information regarding the age at which parents first noticed their children's creative abilities

Age	Amount	Percent
1 year old	2	1,3
2 years old	8	5,3
3 years old	21	13,9
4 years old	16	10,6
5 years old	30	19,9
6 years old	23	15,2
7 years old	28	18,5
8 years old	15	9,9
9 years old	5	3,3
10 years old	3	2,0
Total	151	100,0

According to the data presented in Table 2, two parents noticed their child's abilities at the age of one, while eight parents noticed their child's abilities at the age of two. Twenty-one parents observed their child's abilities at the age of three, followed by 16 parents at the age of four, 30 parents at the age of five, 23 parents at the age of six, 28 parents at the age of seven, 15 parents at the age of eight, and another 15 parents at the age of nine. Three parents noticed their child's abilities at both the ages of five and ten. This suggests that most parents begin to notice their children's creative abilities around the age of 5-7, just before reaching school age.

Regarding the questions "Do you want your child to achieve dreams that you can't achieve?" and "Do you think my child should do what I want?", the analysis of parents' answers showed the following results. While 98% of parents want their child to achieve dreams they could not, 93.4% of them disagreed with the idea that "my child should do what I want."

These opposing positions indicate that parents, on one hand, want their children to fulfill dreams they couldn't achieve, and on the other hand, they do not expect their children to fulfill these dreams based on their parents' desires; instead, parents expect their children to achieve their own dreams through their interests and efforts.

In response to the question "Are there conditions in the family for the formation and development of the creative abilities of your children?", 98.7% of parents answered "yes," and only 1.3% of parents answered "no." This implies that the majority of parents strive to create conditions that foster the development of their children's abilities.

Regarding the factors influencing the development of creative abilities in children, 41 (19.3%) parents mentioned heredity, while 113 (53.3%) parents attributed a significant influence to the family. Additionally, 38 (17.9%) parents cited school as a reason for the development of creative ability, and 20 (9.4%) parents cited the media as a factor influencing children's ability. This suggests

that most parents believe that family is one of the most important factors contributing to the development of creative abilities in children.

In conclusion, after analyzing the results of the socio-psychological questionnaire administered to parents of primary school-aged children, several conclusions can be drawn. Psychodiagnostic methodologies were conducted on primary school students, and the initial statistical analysis of the obtained data is presented below.

The statistical analysis of the Jensen Creativity Survey scale results (Table 3) for 151 pupils revealed the following: the minimum score is 8, the maximum score is 40 points, and the average value for creativity is 31.13. The scales of asymmetry (-0.872) and excess (1.552) on the statistical distribution of this scale indicate a slightly sharp tip, but overall, the data obtained conform to the normal distribution law ($Z = 1.16$; $p > 0.05$).

Table 3: Statistical distribution of Jensen's creativity survey scale (Kolmogorov-Smirnov criterion, N = 151)

Scales	Minimum	Maximum	Average	Statistical deviation	Asymmetry	Excess	Z	p
Creativity	8	40	31,13	5,36	-0,872	1,552	1,16	0,138

Table 4: Indicators of statistical distribution of scales of PARI methodology (Kolmogorov-Smirnov criterion, N = 151)

Scales	Minimum	Maximum	Average	Statistical deviation	Asymmetry	Excess	Z	p
Verbalization	8	20	15,37	2,94	-0,373	-0,681	1,48	0,025*
Extreme caution	8	20	15,05	3,07	-0,347	-0,514	1,50	0,022*
Dependence on family	7	20	14,60	3,00	-0,344	-0,494	1,46	0,027*
Suppression of will	7	20	14,90	3,03	-0,424	-0,393	1,46	0,029*
Feeling of devotion	7	20	14,99	3,35	-0,440	-0,713	1,49	0,024*
Fear of offense	7	20	14,92	3,36	-0,489	-0,641	1,51	0,021*
Family conflicts	5	20	12,86	3,54	-0,065	-0,757	1,20	0,112
Irritability	7	20	14,28	3,18	-0,177	-0,573	1,32	0,061
Excessive persistence	5	20	12,24	3,62	0,056	-0,811	1,12	0,164
Exclude extra-familial influences	7	20	15,76	3,00	-0,88	0,431	2,06	0,000*
Excessive parental authority	7	20	16,38	3,32	-0,837	-0,265	2,10	0,000*
Suppression of aggression	7	20	14,91	2,79	-0,332	-0,213	1,09	0,185
Dissatisfaction with the role of housewife	5	20	12,85	3,52	-0,32	-0,46	0,98	0,288
Partnership	8	20	14,95	2,84	-0,442	-0,242	1,76	0,004*
Develop the child's activity	7	20	15,71	3,04	-0,868	0,198	2,31	0,000*
Avoiding conflicts	5	20	13,63	2,98	-0,431	0,28	1,08	0,194
The negligence of the land	6	20	14,26	3,17	-0,295	-0,574	1,45	0,029*
Suppression of libido	5	20	14,61	3,62	-0,426	-0,736	1,80	0,003*
The superiority of the mother	5	20	13,48	3,54	-0,199	-0,535	1,17	0,129
Excessive intervention in the child's world	7	20	16,05	3,63	-0,861	-0,215	1,88	0,002*

Balancing relationships	8	20	16,56	3,15	-1,027	0,394	2,11	0,000*
Striving to accelerate a child's development	5	20	13,23	3,75	-0,041	-0,866	1,09	0,190
Lack of maternal independence	7	20	15,27	3,33	-0,644	-0,235	1,51	0,021*

Note: * - p <0.05.

The results of the statistical distribution analysis of the scales of the PARI methodology are presented in Table 4. The scales "Verbalization" (Z = 1.48; p <0.05), "Extreme caution" (Z = 1.50; p <0.05), "Family dependence" (Z = 1.46; p <0.05), "Suppression of will" (Z = 1.46; p <0.05), "Feeling of selflessness" (Z = 1.49; p <0.05), "Fear of offending" (Z = 1.51; p <0.05), "Exclusion of extra-family influences" (Z = 2.06; p <0.001), "Excessive parental authority" (Z = 2.10; p <0.001), "Partnerships" (Z = 1.76; p <0.01), "Development of Child Activity" (Z = 2.31; p <0.001), "Land Indifference" (Z = 1.49; p <0.05), "Suppression of libido" (Z = 1.80; p <0.01), and "Excessive interference in the child's world" (Z = 1.88; p <0.01) scales deviated from the normal distribution rules. Consequently, in the later stages of

the study, it would be advisable to use non-parametric criteria for processing the scales of the PARI methodology. Similarly, the analysis of the statistical distribution of scales of the "Talent Map" methodology yielded the following results (Table 4). The scales "Intellectual" (Z = 2.15; p <0.001), "Creative" (Z = 1.61; p <0.05), "Academic (scientific)" (Z = 1.50; p <0.05), "Fine Arts" (Z = 1.55; p <0.05), "Art" (Z = 1.45; p <0.05), "Technical" (Z = 1.39; p <0.05), "Leadership" (Z = 1.87; p <0.01), and "Sport" (Z = 1.64; p <0.01) scales were also found to deviate from the law of normal distribution. Therefore, in the later stages of the research, it would be appropriate to utilize non-parametric criteria for processing the scales of the "Talent Map" methodology.

Table 5: Statistical Distribution Indicators of Scales in the "Talent Map" Method (Kolmogorov-Smirnov Criterion, N = 151)

Scales	Minimum	Maximum	Average	Statistical deviation	Asymmetry	Excess	Z	p
Intellectual	-8	16	9,23	5,86	-0,955	0,099	2,15	0,000*
Creative	-8	16	8,34	5,69	-0,86	0,201	1,61	0,011*
Academic	-8	16	7,36	5,69	-0,531	-0,495	1,50	0,022*
Fine arts	-8	16	7,80	6,32	-0,52	-0,794	1,55	0,016*
Musical art	-8	16	5,21	6,11	-0,081	-0,865	0,90	0,392
Fine arts	-8	16	6,07	6,21	-0,379	-0,782	1,45	0,029*
Artistic ability	-8	16	6,30	6,35	-0,23	-0,925	1,12	0,166
Technician	-8	16	5,10	6,61	-0,188	-1,022	1,39	0,042*
Leadership	-8	16	8,66	6,74	-0,703	-0,686	1,87	0,002*
Sport	-8	16	8,54	6,39	-0,595	-0,807	1,64	0,009*

Note: * - p <0.05.

Table 6 shows the statistical distribution indicators of E.S Hyubner's methodology "Determination of life satisfaction of pupils".

Table 6: Statistical Distribution Indicators of Scales in the E.S Hyubner's Method "Determining the level of life satisfaction of pupils" (Kolmogorov-Smirnov criterion, N = 151)

Scales	Minimum	Maximum	Average	Statistical deviation	Asymmetry	Excess	Z	p
Family	4	6	5,79	0,44	-1,885	2,697	5,97	0,000*
School	2	6	5,53	0,76	-1,781	3,366	4,83	0,000*

Teachers	2	6	5,40	0,87	-1,542	2,006	4,23	0,000*
Myself	1	6	5,55	0,84	-2,362	6,763	5,00	0,000*
My friends	2	6	5,55	0,75	-2,531	8,593	4,51	0,000*

Note: * - p < 0.05.

As observed in the table, the data for "Family" (Z = 5.97; p < 0.001), "School" (Z = 4.83; p < 0.001), "Teachers" (Z = 4.23; p < 0.01), "Myself" (Z = 5.00; p < 0.001), and "My Friends" (Z = 4.51; p < 0.001) do not adhere to the rules of normal distribution. Therefore, in the later stages of the study, it became necessary to use non-parametric criteria when developing scales for E.S. Hyubner's "Determination of life satisfaction of pupils" methodology.

Table 7 presents the results of the statistical distribution of the scales of Warteg's "Circles" method. It can be observed that the scales for "Thinking speed" (Z = 4.37; p < 0.001), "Thinking divergence" (Z = 2.43; p < 0.001), and "Thinking originality" (Z = 3.08; p < 0.001) do not conform to the rules of normal distribution. When dealing with such a series of non-parametric numbers, it is, indeed, appropriate to use non-parametric criteria.

Table 7: Indicators of statistical distribution indicators of Warteg's method "Circles" (Kolmogorov-Smirnov criterion, N = 151)

Scales	Minimum	Maximum	Average	Statistical deviation	Asymmetry	Excess	Z	p
Speed of thinking	0	20	13,35	8,37	-0,605	-1,488	4,37	0,000*
Divergence of thinking	0	8	2,26	1,98	0,289	-1,035	2,43	0,000*
Originality of thinking	0	12	2,24	2,68	1,409	1,821	3,08	0,000*

Note: * - p < 0.05.

Table 8 shows the statistical distribution indicators of the "Detection of external disturbances" method (adaptation of A.M. Prikhojan).

Table 8: Indicators of statistical distribution indicators of the "Detection of external disturbances" method (adaptation of A.M. Prikhojan) (Kolmogorov-Smirnov criterion, N = 151)

Scales	Minimum	Maximum	Average	Statistical deviation	Asymmetry	Excess	Z	p
Anxiety	3	42	21,58	7,59	-0,23	-0,431	1,04	0,233
False scale	0	10	5,91	1,96	-0,196	-0,458	1,49	0,024*

Note: * - p < 0.05.

The primary scale of this method, known as "Anxiety," conforms to the normal distribution of the Kolmogorov-Smirnov criterion (Z = 1.04; p > 0.05), whereas the false scale (Z = 1.49; p < 0.05) is found to be inconsistent with the rules of distribution.

The study also analyzed gender differences in creative abilities among young school-age children. No statistically significant difference was found in the gender characteristics of the Jenson Creativity Survey indicators (Table 9).

Table 9: Gender Differences on the Jenson Creativity Survey Scale (Mann-Whitney Criterion)

Scale	Average		U	p
	Boys (N=61)	Girls (N=90)		
Creativity	72,5	78,4	2529,5	0,413

However, when examining the results of the "Talent Map" methodology, notable gender differences were discovered (Table 10).

Table 10: Gender difference indicators of the "Talent Map" methodology (Mann-Whitney criterion)

Scales	Average		U	P
	Boys (N=61)	Girls (N=90)		
Intellectual	67,1	82,1	2200,5	0,038*
Creative	70,3	79,9	2397,5	0,187
Academic	65,5	83,1	2105	0,015*
Fine arts	63,5	84,5	1981,5	0,004*
Musical art	65,9	82,9	2126,5	0,019*
Fine arts	65,7	83,0	2117,5	0,017*
Artistic ability	66,8	82,3	2182	0,033*
Technician	85,0	69,9	2196	0,037*
Leadership	67,2	82,0	2207,5	0,041*
Sport	75,7	76,2	2726,5	0,944

Note: * - $p < 0.05$; ** $p < 0.01$.

As shown in the table, significant differences between boys and girls were observed in terms of "Intellectual" ability ($U = 2200.5$; $p < 0.05$). In our study, girls exhibited higher "Intellectual" abilities than boys, which could be attributed to the age-related characteristics of the subjects. Scientific literature suggests that girls in primary school tend to have higher levels of mental, emotional, physical, and physiological development compared to boys.

Furthermore, girls also outperformed boys in "Academic" abilities ($U = 2105$; $p < 0.05$). Their interest in various fields of knowledge and overall curiosity are distinguishing characteristics among girls in primary school.

When examining the "Fine Arts" scale, girls' abilities significantly exceeded those of boys ($U = 1981.5$; $p < 0.01$). This difference can be attributed to the psychological and physical maturity of young school-age girls, which positively affects the development of aesthetic abilities and psychomotor skills in them. The heightened sense of aesthetics is also evident in the way girls dress and present themselves.

Girls also exhibited higher performance in "Musical" abilities ($U = 2126.5$; $p < 0.05$) and "Artistic" abilities ($U = 2117.5$; $p < 0.05$) compared to boys. Overall, girls demonstrated a higher level of artistic and creative skills, reflecting their age-related psychological characteristics. Surprisingly, girls also outperformed boys in "Leadership" skills: $U = 2207.5$; $p < 0.05$. This finding challenges the common perception of leadership as predominantly a male characteristic. Girls' advantage in leadership abilities can be attributed to their physiological and psychological maturity.

The only area where boys showed higher confidence levels than girls was in "Technical" skills ($U = 2196$; $p < 0.05$). This result aligns with the general understanding that boys tend to display a greater interest in technical thinking and problem-solving related to technology.

In the subsequent analysis, gender differences were explored using ES Hyubner's "Determining the level of life satisfaction of pupils" methodology. However, no significant gender differences were found in the level of satisfaction in family life, school life, cooperation with teachers, activities, and relationships with friends (Table 11).

Table 11: Gender difference indicators of the E.S Hyubner's method "Determining the level of life satisfaction of pupils" (Mann-Whitney criterion)

Scales	Avarage		U	p
	Boys (N=61)	Girls (N=90)		
Family	73,4	77,8	2587	0,38 7
School	77,5	75,0	2652	0,67 3
Teachers	75,5	76,4	2711, 5	0,88 5
Myself	79,8	73,4	2511	0,27 0
My friends	70,6	79,7	2414	0,13 5

During the analysis of gender characteristics using Warteg's "Circles" methodology, it was observed

that there are differences in the level of statistical confidence (Table 12).

Table 12: Gender differences in Warteg's "Circles" methodical scales (Mann-Whitney criterion)

Scales	Avarage		U	P
	Boys (N=61)	Girls (N=90)		
Speed of thinking	63,9	84,2	2009	0,002* *
Divergence of thinking	60,7	86,4	1811	0,001**
Originality of thinking	71,3	79,2	2457, 5	0,249

Note: ** p <0.01.

As indicated in the table, there are statistically significant differences in the level of confidence between boys and girls on the "Thinking speed" scale (U = 2009; p <0.01). Thinking speed is a vital indicator of creative thinking, and quick thinking often positively influences the development of quick-witted and creative qualities. The exact speed of thinking is a critical factor that impacts the development of creative abilities in girls.

A comparative examination of gender differences on the "Thinking divergence" scale revealed statistically significant distinctions in confidence levels (U = 1811; p <0.01). Divergent thinking is widely known as the ability to generate multiple solutions to a problem. This suggests that girls hold a significant advantage over boys in terms of their ability to creatively find numerous solutions to any given problem, as evidenced by their higher scores on this scale. Although girls also outperformed boys on the "originality of thinking" scale, the difference was not statistically significant. In other words, while this

relatively rare trait is slightly more developed in school-age girls than in boys, there are still boys who can think originally and produce "untouched" thoughts.

4 CONCLUSION

1. The assessment parents give to their children's creative abilities is largely influenced by the birth order of the children. Parents tend to believe more in the high abilities of their first child and, to some extent, in the abilities of their subsequent children. However, as more children are born, these hopes may diminish.

2. The perception of how many children in the family possess creative abilities is influenced by the family size. Families with up to 3 children often focus more on the first and second child's creative abilities, while families with four children tend to overestimate

the creativity of the later-born children, especially the fourth child, rather than the first child. Families with five children treat their children more equally, without distinguishing between them based on creative abilities.

3. According to the majority of parents, one of the most significant factors influencing the development of creative abilities in children is the family environment. "Heredity" and "school" are considered the second and third most influential factors, respectively. The media is seen as having the least impact on the development of children's creative abilities.

4. It has been established that the intellectual, academic (scientific), fine art, musical, artistic, and leadership abilities of primary school-age girls are significantly higher than those of boys. Only in technical skills do boys outperform girls. There were no significant differences between boys and girls in sports skills or in creative abilities of a more general nature.

5. Girls have been noted to outperform boys significantly in terms of thinking speed and divergence, which are underlying aspects of creative abilities.

6. The level of attention and care parents give to their children's upbringing is positively correlated with their appreciation of their children's creative abilities. Parents who take child-rearing more seriously tend to value and acknowledge their children's abilities in various areas more.

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