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Creativity Assessment of Primary School Children by the Tests, Teachers' Ratings and Self-estimates

Svetlana Petrova [a]*, Psychological Institute of Russian Academy of Education, 125009, 9-4 Mokhovaya str., Moscow

Elena Shcheblanova [b], Psychological Institute of Russian Academy of Education, 125009, 9-4 Mokhovaya str., Moscow

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Abstract

Development of the child's creativity is recognized as one of the main objectives in education. Our study aimed to investigate the relations of the objective and subjective indicators of creativity with intellectual and personal variables in 240 primary school children (aged 7-8 and 9-10). We used Teachers' Checklist of children's abilities; The Torrance Test of Creative Thinking; Group Inventory for Finding Talent; Cognitive Abilities Tests; school achievement. The results show positive correlation between the teachers' ratings of intelligence and creativity in both ages, but not between the intelligence and creativity test-scores. The teachers' creativity ratings also did not correspond to the pupils' creativity self-estimates because the teachers mostly orientated towards intellectual abilities and work organization skills of the children. The data demonstrate the need to integrate subjective and objective information to evaluate multifaceted children's creativity.

Keywords: creativity; intelligence; school children; teachers;

* ADDRESS FOR CORRESPONDENCE: **Svetlana Petrova,** Psychological Institute of Russian Academy of Education, 125009, 9-4 Mokhovaya str., Moscow.
E-mail address: sirenb@yandex.ru / Tel.: +(495) 695-93-63

1.Introduction

Development of the child's creativity is recognized as one of the main objectives in education. Almost all the teachers claim to value creativity in their classroom, because it is an expected answer, but they show it in their practices very seldom. Many studies demonstrate that the teacher judgment of creativity is often characterized by inconsistency. They also acknowledge the lack of ideas about how to identify, evaluate, and develop children creativity in the context of school subjects (Newton, 2013; Runco, 2014).

In current psychology, the child's creativity is usually evaluated with the ratings of experts (often teachers or parents), the tests of creative thinking, or the questionnaires about the children's interests, hobbies, activities, etc. (Long, 2014; Lubart, et al., 2013). The relationship among these estimates and their interrelationship with other cognitive and personality characteristics are still insufficiently studied. At the same time, it is important for psychological support of school children with high creativity. The present study aimed to investigate the relations between the objective and subjective indicators of creativity and their interrelationship with intellectual abilities and motivational characteristics in primary school children.

2. Methods

2.1. Participants and procedures

The sample included 240 students of the first (60 boys and 60 girls aged 7-8) and third (60 boys and 60 girls aged 9-10) grades of Moscow state primary schools. Ten teachers of these students also participated in our study.

2.2. Instruments

To evaluate the intellectual and creative abilities of the students we used the following methods previously adapted for the Russian speaking children:

1. Teachers' Checklist for Intellectual and Creative Ability Rating of the Students;
2. The Torrance Tests of Creative Thinking "Completion of Pictures";
3. The Group Inventory for Finding Talent for self-assessment of children's preferences, activity, interests, and etc., including 40 items;
4. Cognitive Abilities Tests, including verbal, mathematical, and nonverbal scales;
5. The Questionnaires of Achievement Motivation (Hope for Success and Fair for Failure, including 20 items), Quest for Knowledge, including 40 items, and Work Organization Skills, including 8 items.

All the analyses were performed by using the IBM SPSS version 22 for Windows.

3.Results

3.1.Relationships between teachers' ratings, test scores, and self-estimates of creativity

According to the results of correlation analysis, the teachers' ratings of intelligence and creativity of the pupils positively correlated with each other in both ages ($r = 0.47$ and 0.51, $p < 0.001$), whereas

the significant correlation between the test scores of intelligence (Cognitive Abilities Tests) and creativity (Torrance Tests) were not observed. The teachers' ratings of children's creativity also did not correspond to the Torrance test scores and self-assessment of children's creativity, and only in third-graders the teachers' ratings of children's creativity positively correlated with work organization skills ($r = .19$, $p < 0.05$). Any correlations between self-estimates of children's creativity and their teachers' and tests variables of creativity were not found. The exception was a low but significant positive correlation between these self-estimations and the originality scores on Torrance test of the third-graders ($r = 0.18$, $p < 0.05$). The creativity self-estimates in the two age groups correlated positively with the hope for success ($r = .34$ and 0.37, $p < 0.01$) and negatively with the fear of failure ($r = –0.19$ and $–0.22$, $p < 0.05$). In addition positive correlations were noted between the creativity self-estimates and quest for knowledge in the third-graders ($r = 0.26$, $p < 0.01$).

3.2. Differences of motivational characteristics and creative abilities in the children with various levels of creative self-assessment

The separate one-way analyses of variance (ANOVA) were performed to assess the differences of cognitive and motivational characteristic among the four subgroups of pupils with different levels of creativity self-estimates as independent measures. All participants were divided into four equal subgroups with lowest (1), lower (2), higher (3) and highest (4) levels. The descriptive statistics of these four groups are presented in the Table 1.

Table 1. Means and standard deviations for the measures

Grade	Variables / Mean (SD)	Levels of Creativity Self-Assessment			
		Lowest	**Low**	**High**	**Highest**
1	Hope for Success	7.7 (1.97)	8.7 (1.38)	8.6 (1.68)	9.0 (1.18)
1	Achievement Motivation	3.6 (3.62)	5.6 (2.47)	5.5 (3.09)	6.2 (3.08)
3	Hope for Success	6.7 (2.11)	8.2 (1.67)	8.2 (1.72)	9.0 (1.25)
3	Fair of Failure	1.8 (1.63)	1.5 (1.13)	0.8 (0.97)	0.8 (1.63)
3	Achievement Motivation	3.7 (3.18)	5.8 (2.56)	6.7 (2.84)	7.3 (3.02)
3	Quest for Knowledge	22.1 (5.82)	25.1 (5.57)	24.8 (5.80)	27.7(5.20)
3	Originality (Creativity)	23.4 (7.40)	24.9 (5.01)	23.4 (7.03)	27.8 (4.90)

According to Table 1, the results for achievement motivation of the first-graders indicated that the overall differences among the four subgroups were significant, $F (3, 117) = 4.807$, $p < 0.01$, $\eta_p^2 = 0.1106$. Post-hoc Bonferroni tests showed that the achievement motivation variables in the subgroup with the highest creativity self-estimates were stronger, than those in the subgroup with the lowest ones ($ps < 0.01$). More sound and consistent inter subgroup differences were demonstrated by the third-graders: the overall differences on achievement motivation among the four subgroups were also significant, $F (3, 117) = 6.630$, $p < 0.001$, $\eta_p^2 = 0.1442$. According the Bonferroni Post-hoc tests, achievement motivation and hope for success were more pronounced in subgroups 2 - 4 compared to the subgroup 1 ($ps < 0.001$), and lower fair of failure was pronounced in subgroups 3 - 4 compared to the subgroup 1 ($ps < 0.01$). Additionally the third-graders with the highest creativity self-estimates demonstrated the strongest quest for knowledge, $F (3, 117) = 8.138$, $p < 0.001$, $\eta_p^2 = 0.1714$; and the highest originality of the pictures (Torrance tests), $F (3, 117) = 3.376$, $p < 0.05$, $\eta_p^2 = 0.0790$, compared to their peers with the lowest creativity self-estimates.

4. Discussion

According to the results obtained in the study, significant interrelations between teacher ratings and test indicators of creativity of junior school children have not been revealed. These results confirmed that the teachers mostly orientated towards intellectual abilities and self-organization skills of the children. This is confirmed by the presence of a significant relationship between teacher's assessment of creativity and intelligence in the absence of significant interrelations between the indicators of creativity and intelligence tests in both first-graders and third-graders. Moreover, highly creative third-graders, according to teachers' assessments, demonstrated significantly higher rates of non-verbal and general intelligence, as well as work organizational skills, compared to peers who received low creativity ratings from teachers. In psychology, the connection between intelligence and creativity has long been the subject of heated discussions, nevertheless, in most studies the connection between the indicators of intelligence and creativity tests is insignificant or not at all.

The adequacy of assessing the creative abilities of children by teachers raises, especially many doubts, since the conditions of the school education rarely contribute to creative manifestations (Lubart, 2013; Newton, 2013; Runco, 2014). In this regard, it is recommended to include in Teachers' Checklist for nomination of creative students in the various examples of the most frequent manifestations of creative interests and abilities in the children's behavior and activities in order to make teachers' assessments less subjective and more versatile. However, the effectiveness of using such questionnaires without a certain psychological training of teachers still remains unproven.

Of particular interest are the data we obtained on self-estimates of creativity in junior school children. Although correlations of these self-estimates with the teachers' ratings or the tests of creativity were not revealed, third-graders with very high self-estimates demonstrated significantly higher originality of their pictures in the Torrance tests of creative thinking and the quest for knowledge than their peers with lower self-estimates. In addition, in both parallels, children with higher self-estimates of creativity showed stronger achievement motivation for due to higher hopes for success and lower the fear of failure. The diagnosis of personal characteristics of junior school children with questionnaires has limitations because of possible misunderstanding of the questions, inaccuracy of answers, aspiration to guess the desired answer, and insufficiently developed self-awareness. Nevertheless, as our data show, these methods allow us to identify some general trends and individual characteristics of children that can help in identifying their creativity.

The results obtained in the study demonstrate the need to take into account various subjective and objective information and to analyze it in all the complexity in order to value such a multifaceted phenomenon as the child's creativity. Apparently, the manifestations of student creative potential remain unnoticed by the majority of teachers, mainly focused on educational activities. This can lead to misunderstanding by teachers of non-standard-thinking children and to conflicts with them. Different creative tasks and tests, studying the interests and hobbies of children outside the school, in addition to the observations of teachers and tests of abilities, can help to find the true causes of such conflicts and contribute to the development of creative abilities in children from the beginning of school education.

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