

**The phenomenon of spontaneous formation
of the foundations of theoretical thinking as an indicator
of the development of high intellectual abilities
in primary school pupils**

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One of the tasks of modern school education is the formation of students' academic knowledge, formulated in the form of scientific concepts. The native psychologist V.V. Davydov noted, that from the very beginning of schooling, children «encounter the previously systematized and generalized experience of other people, reflected in textbooks and in purposeful explanations of the teacher, that is, in a “theory”» [4. C. 24]. According to V.V. Davydov, theoretical (scientific) thinking is a «reasonable thinking, internally connected with the study of the nature of its own basis - with the study of concepts» [5. C. 62] and subject to the specific organization of learning, based on the theory of meaningful generalization [7], there is the possibility of students developing an initial level of theoretical thinking already in the junior classes of general schools [5].

Sometimes pupils of primary classes show the ability to enter the initial level of theoretical thinking without the organization of special education, in the course of working on school tasks or in the process of assimilating educational material. We assume that the phenomenon of the spontaneous formation of the foundations of theoretical thinking in the primary classes is in itself is a predictor of the high academic achievements of students, both in a situation of pronounced intellectual abilities and in the case of an unmanifested, potential intellectual giftedness.

The aim of our study was to determine the connection between the phenomenon of spontaneous formation of the foundations of the theoretical way of thinking and the level of development of intellectual abilities.

As methods for diagnosing the theoretical level of thinking, we used:

- Tasks for diagnostics of theoretical thinking on non-subject material. The series «Difference», «Games in 3» and «Postman». (The author is A.Z. Zack [6]).
- «The method for the subject diagnosis of the fundamentals of theoretical thinking of junior schoolchildren on the material of the topic of adding multivalued numbers with a transition through the discharge» (hereinafter «Digit number») and «The method with incomplete data in the content of the conditions of the problem» (hereinafter «Tower») (author of both methods. V.A. Guruzhapov) [1, 2].

To diagnose the level of development of intelligence we used:

- Test «Standard progressive matrices plus Raven» (hereinafter Raven's «SPM+») (The author is J.K. Raven) [8].

Our sample was made by students from the 1st to 4th grades of the Moscow Gymnasium №1514 (270 pupils).

It is important to note that training in the elementary classes of Gymnasium №1514 is aimed at the development of abstract-logical thinking, but special training in the basics of the theoretical way of thinking in the system of developmental learning by D.B. Elkonin - V.V. Davydov is not held.

According to the diagnostic methods, we analyzed the connection between the current level of development of the intellect and the degree of formation of the initial level of theoretical thinking among the students in the 1st and 4th grades.

The data of the correlation analysis (the Pearson correlation coefficient was used) are presented in Table 1.

Table 1.

Analysis of the correlation between the number of correctly solved problems on theoretical thinking and test results of Raven's standard progressive matrices plus

TEST METHODS	Gymnasium №1514							
	1 class		2 class		3 class		4 class	
	r	α	r	α	r	α	r	α
The tasks of the series «Differences», «Games in 3», «Postman» and the results of the Raven's «SPM+» test	0,287	0,01	0,333	0,01	0,341	0,01	0,424	0,01
The tasks of the series «Digit number» and the results of the Raven's «SPM+» test			no significant correlation		no significant correlation		0,348	0,01
Total students (N)	81		67		63		59	

Based on the results of the diagnosis, we identified pupils with the high level of development of the foundations of theoretical thinking. Further, from this group of students we identified those who, according to the Raven's SPM+ test, were at the first and second levels of development of intellectual abilities (Table 2).

Table 2.

**Data on the number of students with
a high level of solving problems on theoretical
thinking and I-II levels in the SPM + Raven test**

School	Gymnasium №1514		
	1	2	3
Classes			
Number of students with a high level of solving tasks on theoretical thinking on non-subject material.	12	40	48
Number of students with a high level of solving tasks on theoretical thinking on non-subject material and I-II levels of intelligence using the Raven's «SPM+» test.	58%	60%	56,3%
Number of students with a high level of solving tasks on theoretical thinking on subject material (task «Tower»).	11	22	41
Number of students with a high level of solving tasks on theoretical thinking on subject material (task «Tower») and I-II levels of intelligence using the Raven's «SPM+» test.	45,5%	54,5%	51,2%
Total students (N)	80	67	63

The obtained results show that, in general, pupils with a high level of development of the foundations of theoretical thinking in more than half of the cases will also have a high level of development of common intellectual abilities.

On the basis of the results of the study, it can be concluded that the spontaneous formation of the foundations of theoretical thinking among primary school students without special training largely determines the development of a high level of general intellectual abilities. At the same time, there is a need for further research aimed at revealing the specific influence of specific factors on the formation of the foundations of theoretical thinking among pupils in primary classes. To such factors, in our opinion, in the first place are: the features of the curriculum (lessons on extended and enriched programs) and the pedagogical style of conducting training sessions.

References

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