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The Intellectual Readiness of Children for School

/some aspects of the mathematical education at the kindergarden and the primary school/

associate-professor Dimitar G. Dimitrov PhD
South-West University, Blagoevgrad

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Summary

In the offered publications it has been interpreted the intelectual preparation of the children for school. It has been established their level in the case of (regard to) their skills of using of paradigm for defining their form and colour. It has been examined 195 children from different regions of the country.The conclusions are results from the examination (research).

The intellectual readiness of children for an organized education at school, on the one hand, is determined by their level of information about quantitative notions, their orientation into space and time, their knowledge about geometrical figures, etc. On the other hand, we have the level of the development of cognitive processes – attention, perception, memory, thought, the formation of abilities for educational work, the understanding of the tasks which the teacher gives, performance and verification of the individual preparation, training for the writing down of figures and their elements, computing habits, etc.

Until recently, there was a conception that the intellectual development of the child is determined by the stock of knowledge, which every child has. In addition, nowadays there are some parents and teachers who think that the development of children depends on their knowledge. This is not absolutely true. The children's vocabulary and their knowledge about the mathematical notions can enhance significantly, but this does not mean that thought develops at the same rates. It is incorrect to think that the knowledge about language, mathematics, the environment and other areas, skills and habits are an index which determines the intellectual readiness of children for school.

According to the present curriculum for 2-7 year-old children in Bulgaria, made up by E. Russinova and a group of experts in under school age at this stage "an intensive development of thought, based on sensory information" is registered. Some elements of the logical thought develop at the same time. With the help of concrete and general notions the child finds out some skills to uncover ratios, mathematical subordinations and to form elementary notions for the numbers, shapes and time. / 3, 17/

The child builds up a positive attitude towards its new social position as a pupil, with an external and an internal readiness for school, by accumulating a store of mathematical knowledge manifested in:

- understanding the purpose of the workbook in mathematics and wanting to write the figures and their elements.
- distinguishing and naming the spatial directions and relations

- locating the objects into space and estimating the distance between them, using the comparative degree.

- comprehending and naming the sides and the angles of the objects /workbook, sheet of paper, etc. /.

- using figures, to express quantity and the order of objects into space.

- learning the arithmetical operations, expressed by figures and by the signs: “>”, “<”, “+”, “-”, “=”.

- apprehending and measuring objects - their length, height, width- with a linear unit of measurement. /2, 56-57/

The level of the cognitive work of children is determined in the process of the accomplishment of the tasks, which the teacher gives. Their mental activity can be established by the tasks and exercises, which include grouping and classification. Here the teacher can use different geometrical shapes of every possible colour and size, /for example the cubes of Deniesh, etc. /.

The level of the intellectual readiness of children for school is determined in the following areas:

1.Evaluationof the children’ skills for using shape and colour paradigms.

2.Evaluation of the children’ skills for classifying objects.

3.Mathematical problems.

4.Some tasks on special orientation. /1, 55-58/

We interpret the findings of our research in reference to the evaluation of the children’ skills for using shape and colour paradigms,. The research* was organized in May 2003 with 195 children, entering school in September 2003. They are from different districts of the country:

School:	Settlement:	Children investigated:
1. All-day kinder garden №1 -	Kjustendil	29 children
2. All-day kinder garden №2 -	Kjustendil	20 children
3. All-day kinder garden №11-	Dupnitza	15 children
4. Half-day kinder garden in The Primary school “Luboslovie”-	Radomir	15 children
5. All-day kinder garden –	Yardgilovci /Pernik/	15 children
6. All-day kinder garden №1-	Sandanski	15 children
7. Combined kinder garden-	Ustina /Plovdiv/	15 children
8. All-day kinder garden -	Devin	17 children
9. All-day kinder garden -	Dospat	19 children
10. All-day kinder garden –	Barutin /Dospat/	11 children
11. Half-day kinder garden –	Zmeica /Dospat/	10 children
12. All-day kinder garden –	St. Petka /Velingrad/	14 children

Of all the children participating in the research, 25 visit a half-day kinder garden, 15- a combined kinder garden and 155 – an all-day kindergarden.

During the research, the children work with different geometrical shapes. We determine their skills for using shape and colour paradigms with the following tasks and exercises:

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* The research is accomplished in co-operation with students at the master’s educational degree, who work as teachers in the kinder garden and in the primary school.

1.Look at the shapes and name them.

2.Point a finger at some object in the study room which looks like a: square, rectangle, triangle and circle.

3.Try to find at home some objects with a geometrical shape.

4.Search for such objects in the yard.

5.Look at the shapes in different colours /red, green, blue, rose, yellow/.

6.Find room some objects with the same colour in the study.

The results are presented in the folloing table:

School /Settlement/ Children	Children, who know the names of all the shapes	Children, who do not know:			
		A square number /%	A triangle number /%	A rectangle number /%	A circle number /%
1.All-day kinder garden №1Kjustendil 29 children	29-100%	—	—	—	—
2.All-day kinder garden №2,Kjustendil 20 children	18-90,00	2-10,00	2-10,00	2-10,00	2-10,00
3.All-day kinder garden №11,Dupnitza 15 children	8-53,33	2-13,33	3-20,00	2-13,33	—
4.Half-day kinder garden in The Primary school "Luboslovie"-Radomir 15 children	15-100%	—	—	—	—
5.All-day kinder garden,Yardgilovci /Pernik/ 15 children	15-100%	—	—	—	—
6.All-day kinder garden №1,Sandanski 15 children	15-100%	—	—	—	—
7.Combined kinder garden-Ustina/Plovdiv/ 15 children	12-80,00	—	—	1-6,67	2-13,33
8.All-day kinder garden - Devin 17 children	14-82,35	—	2-11,76	1-5,88	—
9.All-day kinder garden - Dospat 19 children	19-100%	—	—	—	—
10.All-day kinder garden– Barutin,/Dospat/ 11 children	11-100%	—	—	—	—
11.Half-day kinder garden – Zmeica /Dospat/ 10 children	10-100%	—	—	—	—
12.All-day kinder garden – St.Petka/Velingrad/ 14 children	14-100%	—	—	—	—
Total number:	180-92,31	4 -2,05	7-3,59	6-3,08	4 -2,05

From this table we can see that 92,32% of all the informants distinguish and know the names of the different shapes /the square, the rectangle, the triangle and the circle /. Only 4% cannot recognize the square and the circle. Just 3,08% cannot distinguish the rectangle and the triangle. Some children from All-day kindergarden №1 in Sandanski and All-day kindergarden in St. Petka /Velingrad/ mix up the circle with the ellipse.

In comparison with a longitudinal research from 1985/86 to 1993/4 /1, 142-147/, here we have a tendency towards an improvement of the results for all indicated geometrical shapes, that is to say,the level of assimilated knowledge is high. Children do the first exercise very well; they look at the shapes and call them by name.

With the following exercises: point to some object in the study room, in the yard, or at home, which looks like a: square, rectangle, triangle and circle, we verify the children' ability for a transfer of their knowledge about the geometrical shapes.

At first, the child points to the objects with geometrical shape in the study room and then it must remember such objects in the yard or at home, without any visual help.

According to the results we can say that the future first grade pupil identifies scorrectly the different objects with a rectangular, triangular, round, or square shape.

The children frequently give the following objects:

- In the study room: a notebook, a window, a door, a ceiling, a table, a carpet, a ball, a clock, and some elements of the Dominoes or a piece of the game "Tangram", etc.
- At home: a door, a cupboard, a ball, a carpet, a television, a plate, a cooker, a fruit dish, a curtain, a washing machine, a globular lampshade, etc.
- In the yard: a roof, a bench, a tile, a house, a ball, a playground, a bike, etc.

All informants cope very well with these exercises. They are quick in the uptake of this problem. Every child can point to some objects, which have a geometrical shape. Only a small percentage of the children cannot apply their knowledge of the geometrical shapes to real objects.

We have good results with the tasks and exercises on colour, too. The children look at the shapes in different colours and find them in the study room; only a few children find it difficult to distinguish the colours. The objects, most frequently used for this exercise are coloured in red, rose, green, blue and yellow

Based on the results of our research, the following conclusions can b drawn:

1. The results thus obtained can indicate the level of the children's knowledge and skills.
2. The usage of different shapes and colours can determine the mathematical readiness of children for school.
3. The results show that children understand the tasks set by the teacher. This means that they are ready for an organized educational process.
4. The tasks and exercises offered can be a basis for the accumulation of the mathematical knowledge in primary school.