

LEARNING GEOMETRY IN ELEMENTARY SCHOOL

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One of the most important tasks of the modern school is to develop child's intellectuality basing on the targeted formation of creative imagination. Imagination does not only help in learning, but is also important for children's cognitive development and personal growth.

The way the elementary school children learn geometry and acquire knowledge about space, makes it necessary to unite geometry learning and development of spatial representations and imagination during the first school years. However, the issue of an elementary geometry course remains questionable; the content and the sequence of learning of the geometric material are being disputed.

Children of elementary school develop spatial thinking abilities, and get basic skills and knowledge in geometry, drawing and measuring, only by chance, as the school does not address the issue enough.

In the elementary math program, geometric material can be found occasionally (only some small parts of it). It is a diminutive addition to arithmetic rather than a complete course, which in our opinion, a course of visual geometry should become.

The existing geometry introduction at school has a number of disadvantages:

1. There is no connection between the first geometric knowledge obtained at elementary school and geometry in the 5-6th grades. For example, notions «sphere» and «triangle», used in the first grade in such tasks as: «How many triangles, squares or spheres can you see in the figure?», are almost never used further at elementary school and the 5th grade. The only example of the space notion in the math book for the 5th grade, is a rectangular parallelepiped. So, a schoolchild learns only the definitions and primitive constructions in his elementary math, as the school program use neither the natural interest of pupils to geometry in this age, nor the rich geometric experience of children, which they gain in their everyday activities, it does not aim to develop their geometric intuition.

2. There is no proper system of introducing geometric facts of elementary and introductory geometry at middle school. According to our experience and observations, pupils cannot recognize segments on the rectangle sides (or other figures); they do not see the measuring of the length and width of a rectangle as measuring of the segment

length; they do not find segments in the surrounding reality. While getting acquainted with the simple geometric facts, students narrow their educational chances, as they learn the spatial relations of the material world and geometry of objects only through measuring.

3. The teaching process is not dedicated and logical enough, though it is desirable and possible at both elementary and middle school.

Moreover, teaching geometry elements in a more integral form at elementary school would be rather useful, as it could solve the difficulties, which many pupils face when they first begin to learn geometry. These problems are:

- 1) the child must realize the most essential geometric facts;

- 2) it needs to master the unusual methodology (definitions, logic proof).

If a pupil already knows the basic geometry and his geometric imagination is more or less developed, then he can understand the material of a regular geometry course much better.

The recent debates concerning the content of the school geometry are definitely helpful: during the last decades geometry courses have become «more geometric», the course books, which used to be too boring, have become more visual, and the extreme illustrative ones – more logical.

However, the observed development of geometric education is scarce. We believe that the introduction of course «visual geometry» at schools and universities, will let the future teachers explain geometry to children (provide geometric propaedeutics) in a more integral, task-oriented and systemized way, using the child's life experience and its rich imagination; and prepare for a better study of elementary geometry at the university.

In our opinion, the visual geometry course solves the following didactic tasks:

- provides a proper training for a regular geometry course (at school and university);

- helps develop spatial representations and imagination in school pupils (and students);

- gives students a practical knowledge, needed for learning of other school subjects: geography (for example, knowledge on angles, plan and scale), nature study (for example, configuration of leaves and flowers), physics (measuring areas, volumes), drawing (draw from nature);

- gives an opportunity to reason (inductive, realistic and etc.), assert hypotheses (their proof or disproof);

- develops artistic taste and esthetic culture in children (and students).

These are probably not all the educational goals that can be achieved by means of the visual

geometry, but there have been mentioned enough to assure of its benefits.

We believe that teaching visual geometry will interest the teachers, who care about the further development of children, and are willing to help their students learn geometry. We are sure that visual geometry would be attractive for teachers with wide imagination, who search for new ideas in their profession. And hopefully, the course of visual geometry will find its place in the system of professional education for elementary school teachers.

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EDUCATIONAL SPACE OF HIGHER EDUCATION

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Market period of development of Russian federation is characterized by the rising role of informative technologies, intellectualization as the most important condition and direction of development of productive powers. The base of progress while this becomes the knowledge, experience and value guideline of personality: ability of person to make his own decisions, readiness to carry out the responsibility for them, aspiration for professional promotion, to the reaching of compromise. These qualities of personality are laid at the period of studying and are improved during whole further life of person. That's why in the opinion of specialists of UNESCO the device of XXI century will be Education during the whole life that means uninterrupted education as social necessity and duty of citizens of postindustrial society. In the traditions of our country, while the importance of the process of knowledge acquisition, the education is not identical with teaching. At Russian perception education is inseparable from upbringing, forming and development of human's personality.

Federal program of development of education states that the number of educational institutions of non-traditional kind (lyceums, professional lyceums, gymnasiums, colleges) has reached more than three thousands, the number of students who study there has increased more than a third. There

is formed the new system of higher education, which includes state and private educational institutions. This promotes the access of Russian citizens to get higher education and at the same time creates a big number of critical problems that are connected with contents of education, the quality of preparation of specialists. To guarantee educational institutes on different types of expert personnel is one of the tasks of institutions of higher education. To prepare not just professional at concrete sphere of activity but to give to graduating student an opportunity to choose the field of their application on one's own this is a task of university education. Conflicting character of social-economical reforms that are held in the country negatively affects the condition of graduates of high school. The most critically behind them there stand questions of job placement: unemployment, psychological unpreparedness to it, insufficient quality of preparation, uselessness of knowledge, remuneration of labour. Practically all institutions of higher education of the country, including technical ones, continue to widen intake of students to such specialities as economy, management, business accounting, jurisprudence thereby they intensify cruel competition at the labour-market one the one hand, and they fail their own specialization in chase of profit on the other hand. Changes at the economy of the country reflected at the change of motivation of students to studies. Consequently of selective questionnaire of 200 student of institutions of higher education of Stavropol krai about motives of getting higher education there was revealed following: the motivation to the study of 30 % of students of first courses is desire for receive a diploma of higher education without connection with the choice of speciality, as the possibility of getting well-paid job, 40 % of them just want to be highly educated. For the students of graduation course on first place also stands the factor of getting high education in condition of education by «easy» speciality. About 70 % of students consider that they will get second higher education by the speciality that corresponds to the elected job, after finishing the institution of higher education. It follows from this that for the majority of students speciality that was gotten at the institution of higher education is not a base of job placement by the speciality. The reforming of Russian system of higher education and its bringing into a correspondence with generally accepted world standards is today's necessity. But the main task consists not in reforms, not in technologies, but in carrying out the whole complex of transformations, which guarantee the conditions for the development of personality of competent person, fully developed, independently thinking. Speak-