



PROBLEMS OF DETERMINING THE LEVEL OF SPATIAL IMAGINATION OF STUDENTS IN THE PROCESS OF TEACHING THE SCIENCE OF DRAWING GEOMETRY AND ENGINEERING GRAPHICS

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Abstract:

We bring test questions that will help determine the level of spatial imagination of students. The tests are based on the materials of high school geometry and drawing science and consist of issues that are performed on the plane and in space.

Keywords. spatial imagination, creative imagination, memory images and imaginary images

A characteristic feature of the scientific approach to the ridge of continuing education in our republic is that it is seen as a full-fledged, continuous and continuous, that is, as a single system.

Today, the radical reform and improvement of the T'alim system in our country, which is taking steps towards progress, is expected to the level of public policy to increase educational competence.

Until recently, in education, the priority was to build students with ready-made knowledge, while to date, the need to strengthen the focus on the development of creative thinking skills and striving for new knowledge, relying on the process of managing kura cognitive activity, that is, existing knowledge, has become a first-class task.

In order for the educational process to be productive and productive, students are obliged to have a certain degree of cognitive activity. This in turn is one of the main components of cognitive activity, the development of spatial imagination in students the goal should also be a tool in drawing education.

Imagination is also a holistic reflection among objects and phenomena in being, such as perception, with the characteristics and characteristics of the object that we need at the same time.

It reflects the properties of what directly affects the sensory organs (vision). In contrast to perception, however, in imagination there is an image of something that influenced the human sensory organs in the past. Imagination is the secondary image of something (or the host).



What is spatial imagination? We will give the following description to this phrase. The thought-provoking reconstruction of the shape, dimensions, parts of a given body and its position in space is called "spatial imagination". In other words, it is called "spatial imagination" that a body is reconstructed in the mind of a person who thinks through an image or fantastic images formed in memory.

Spatial imagination is recreated in the mind of a thoughtful person through an image or a fantastic image that is shaped in memory. According to this feature, psychologists divide spatial representations into "memory images and imaginary images".

Visualizing the object in an approximation without thought processing through existing concepts in memory is called a "memory image".

In the case of a fantastic image, it is different from a memory image. In this case, the existing images in memory about the body are thought out and the body is imagined enriched with new hypotheses. In turn, fantastic images are divided into two, depending on their formation:

- a) fantastic images of imagination formed in the nature of thought-processing;
- b) images of creative imagination.

Fantastic images of imagination are new images formed in the nature of the thoughtful processing of the given materials (drawing, interpretation, vivid image). In drawing lessons, the thought-provoking of The Shape of a body on the basis of its drawing is carried out on the basis of imaginary images formed on the basis of natijasi, imagining the image, visualizing the detail on two given projections, generating its third projection on the thought, the imagination formed on the natijasi.

In higher education, too, in the process of teaching drawing and drawing geometry, it is important to develop both "memory" and "fantastic" images of the imagination. First of all, it is necessary to determine the advanced level of the student's spatial imagination. This can be achieved by performing tests that require the students ' spatial imagination to work under strain.

It is known that in students of the first stage, the ability to spatial imagination is developed to different degrees according to objective and subjective reasons. This in turn has a negative impact on the assimilation of new material and the organization of the course process. In order to eliminate this drawback, first of all, it is necessary to determine the level of spatial imagination of students and focus the lessons on the development of their spatial imagination. Because spatial



imagination is one of the leading factors in the effective acquisition of graphic Sciences.

In the article, we will cite test questions that will help determine the level of spatial imagination of students. The tests are based on the materials of high school geometry and drawing science and consist of issues that are performed on the plane and in space. They will have to be solved by students in their imagination without the use of paper and pencil. The implementation of these issues in the plane requires students to have a two-dimensional spatial picture. Despite the fact that the issues are of medium complexity, it requires students to mentally "know" the figures and the relationship between them. In natiyja, it is determined to what extent students will be able to study these issues correctly in their imagination. In the case of students with a developed spatial imagination, they can read these issues in their imagination. If a student, without being able to correctly fulfill these issues in his imagination, performs them using drawings and Real figures, this testifies to the emptiness of his spatial imagination.

Experimental Education is carried out in two stages.

- 1) phase of determining the level of spatial imagination;
- 2) corrective stage.

Based on the concepts of Experimental Education, we conditionally divide the level of spatial imagination of students into three groups:

1. High level;
2. Middle level;
3. Low level.

Each level is based on criteria below:

Advanced degree: if the student can correctly answer the test questions in his imagination within the specified period;

Intermediate level: if the student correctly performs issues within the specified period using pen and paper;

Low level: even when students are allowed to use paper and geometric shapes, if the test results are partially performed incorrectly.

In order to obtain objective and comprehensive information about the level of spatial imagination of students at the first stage of the pilot Test, test control work is organized in the students of the 1st stage of educational integration of architecture, engineering communications and the construction of highways and airfields. Three groups, a total of 60 students, took part in the pilot work. Control work was organized separately in each group.



The results turned out that in groups the spatial imagination of students is shaped to varying degrees as long as Table 1.

References

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