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DEVELOPING STUDENTS' SPATIAL IMAGINATION IN DRAWING LESSONS THROUGH DIDACTIC GAMES

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ABSTRACT

This article examines the development of students' spatial imagination through didactic games. It is possible to develop students' spatial imagination in the process of organizing various didactic games.

KEYWORDS: Students, drawing, graphic representation, spatial imagination, thinking, technologization of education, game, didactic game, detail.

INTRODUCTION

Today, along with a number of developed countries, independent Uzbekistan has accumulated extensive experience in the field of education. It is known that at the state level, attention is being paid to the work of directing young people to science, systematically encouraging them to become deeply involved in productive areas of mental activity, moral and economic stimulation. To increase the effectiveness of education, to ensure that the individual is in the educational center, and young people receive independent knowledge in educational institutions, teachers who are well-versed and knowledgeable in modern pedagogical technologies and interactive methods, the rules of their use in organizing educational activities, as well as teachers who have knowledge in their field, are needed.

Drawing is a technical discipline, the main subject of which is graphic literacy, that is, the ability to read and execute drawings.

In the process of reading drawings, spatial imagination and spatial thinking of students are inextricably linked, who, considering the view (projection), tries to imagine an image of an object (detail), synthesizes the type of detail and strives to collect all the views in one place (as a visual image). Only then will students be able to fully perceive the detail and know exactly about it.

The shape of any body (part) is made up of the sum of geometric bodies. Therefore, the shape of each part is characterized by geometric concepts.

To come to an unambiguous opinion about the shape of a part, it is necessary to have a clear understanding of geometric bodies and their interrelationships. In the process of reading the visible part (orthogonal projection) of a detail, breaking it down into separate geometric bodies and exploring their interrelationships, its volume and image appear in the reader's mind. This perception of space in psychology is considered as follows.

Space perception - it is a form of the process of cognition of the spatial characteristics of the surrounding world, the shape, quantity and relationship of objects and phenomena in space to each other. In addition, the developed period of perception is imagination and thinking.

Imagination - comes from an arabic word meaning to think, fantasize, anticipate, mentally embody in the mind. That is, first of all, information, knowledge, understanding in the human

mind of an object, phenomenon, and the like. Secondly, consciousness and imagination as a source of information, understanding, and knowledge formation. As a result of the analysis of all the manifestations of the detail in the drawing, its spatial image is embodied. The visual quality of a clear image of a part, depending on how it looks in the drawing, is called reading drawings. To achieve this result, the use of advanced pedagogical and information and communication technologies, as well as interactive methods in drawing lessons, is effective.

MAIN PART

Every teacher should be well aware of the content and practical significance of his methods for organizing our classes on these technologies. In pedagogical science and practice, there is a widespread use of terms such as "Pedagogical technology", "Educational technology" and "Technology of education".

Technology in education - this is a pedagogical direction that explores and reveals the patterns of optimal memorization and effective means of achieving educational goals based on a technological approach to the learning process. One of these learning technologies is game technology.

Through games, students learn about the world, that is, the environment, and also receive a certain level of education. Throughout the game, having entered the image of his beloved hero, he cultivates such qualities as truthfulness, ignorance, wit, dexterity, endurance, quick resourcefulness, and the desire for success.

The game is still not recognized as an advanced teaching method even in elementary schools. The games are held mainly so that students' free time is not wasted and they do not become physically constrained. Educational games, regardless of whether they are conducted in the classroom or outside the classroom, are of great importance for significantly activating the processes of involuntary memorization, increasing interest in cognitive activity, and preparing for independent work.

According to the teachers of the highest category of drawing, if a teacher plays with children taking into account their psychology, uses game elements characteristic of their age, then each lesson consists of small games, the lesson will necessarily be bright, interesting, productive.

Didactic games should be built from simple to progressively more complex, designed to enhance students' mental activity. Didactic games improve the basic thought processes – analysis, comparison, inference, and others. The rules of the game should be simple, clear and clearly formulated. Every teacher should actively participate in the entire game process, not forgetting that waiting a long time for their "turn" can weaken interest in the game.

It is necessary to approach each game as a whole and individually, taking into account the level of complexity of the tasks contained in it and how many of them are performed independently. Based on the above requirements for conducting didactic games, we will present below a number of games related to drawing up a detailed drawing and reading it. First, let's organize a game about the simplest tasks of reading a drawing, that is, identifying the missing projections of points located on the surface of the part.

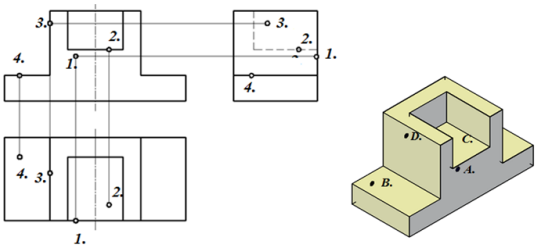

Fig.1

Answers: 1-A, 2-C, 3-D, 4-B.

Game № 1. Identify missing point projections in the orthogonal projection of the part. Figure 1 shows a visual representation of a part and a dot on it. It is necessary to determine the positions of these points in the orthogonal projection. It also develops the student's spatial imagination, detail reading and design skills.

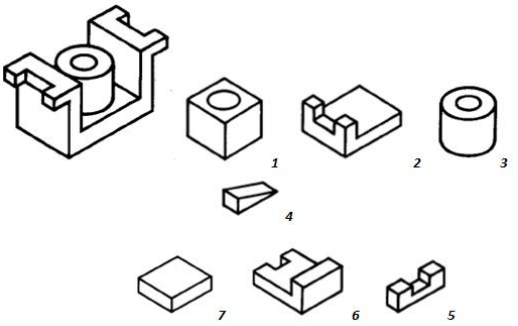

Fig.2

Game № 2. Didactic game "Who will find it faster?".

The condition of the game. Specify the elements of this technical part.

Goal. Improving students' knowledge and skills in thinking, observing the environment, drawing, and developing spatial thinking skills.

Equipment. A poster with a visual representation of a technical detail and related elements or a handout for all participants of the game. The numbers 1, 2, 3, 4... are written in the corners of each element (Fig.2).

Details of the game. The teacher addresses the students: "Indicate which elements this visual image consists of?" The students carefully follow the clear image and say that it consists, for example, of elements under the second, 3rd and 5th numbers. The teacher completes the game and announces the winners of the correctly identified participants.

Note. In drawing lessons, the teacher must break down a model of a part consisting of various geometric surfaces into specific parts and teach them how to draw clear images through written classification of details.

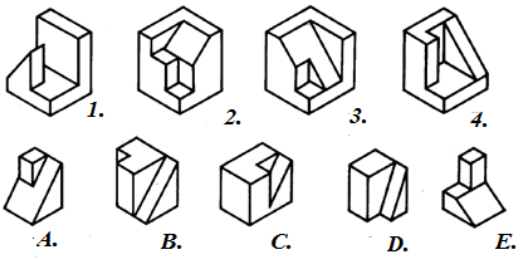

Fig.3

Game № 3. Didactic game "Cube".

The condition of the game. Defining a cube model by comparing and contrasting visual image data.

Goal. Improving students' knowledge and skills in thinking, observing the environment, drawing, and developing spatial thinking skills.

Equipment. Visual images of the details, placed in the same A1 format, or handouts, are provided for all participants of the game. Each corner of the element in the first row corresponds to A, B, C, D...., and numbers are written in the second row. 1, 2, 3, 4.... (Fig. 3).

Details of the game. The teacher calls one of the students to the blackboard and asks him to compare these visual images with each other and form a cube from the corresponding parts. Students carefully observe the visual images and answer that, for example, when combining a part under the number 1 with C, a cube is formed. The teacher completes the game and announces the winners of the correctly identified participants.

Note. In drawing lessons, the teacher must break down a model of a part consisting of various geometric surfaces into certain parts and teach them how to draw a visual image through a written classification of details.

CONCLUSION

Educational games are especially necessary for the education and development of school-age students. Thanks to the game, even the most unassisted students can be interestedThanks to the game, even the most unassisted students can be interested. Didactic games contribute to the development of students' ability to express their opinions independently, spatial imagination and thinking, and creative abilities.

REFERENCES

1. Степакова В.В, Анисимова Л.Н, Миначева Р.М. Карточки-задания по черчению 7 кл. В 2 ч. Часть 1. - М.: Просвещение, 2002. - 160 с.
2. Valiyev, A. N. Y., & Ibrahimova, D. H. (2021). Opportunities for the development of creativity skills of students in the process of teaching drawing science. ACADEMICIA: An International Multidisciplinary Research Journal, 11(3), 2201-2209.
3. Иброхимова, Д. Н., & Ортиков, О. А. (2022). Использование педагогических и нформационнокоммуникационных технологий в направлении творческого мышления учеников в общеобразовательных школах. Science and Education, 3(3), 1048-1052.
4. Д. Н. Иброхимова (2022). ПРИНЦИПЫ И УСЛОВИЯ СОСТАВЛЕНИЯ ЗАДАЧ, ТРЕБУЮЩИХ ТВОРЧЕСКОГО ПОИСКА УЧАЩИХСЯ ПО ПРОЕКЦИОННОМУ ЧЕРЧЕНИЮ. Central Asian Research Journal for Interdisciplinary Studies (CARJIS), 2 (5), 436-441.
5. Иброхимова, Д. Н. (2022). Актуальность внедрения программ компьютерной графики в дисциплины инженерной графики. Science and Education, 3(5), 606-609.
6. Иброхимова, Д. Н. (2022). ГРАФИЧЕСКОЕ НЕПРЕРЫВНОЕ ОБРАЗОВАНИЕ В ПРЕПОДАВАНИИ ИНЖЕНЕРНОЙ И КОМПЬЮТЕРНОЙ ГРАФИКИ.
7. Иброхимова, Д. Н. (2025). ТЕОРЕТИЧЕСКИЕ ОСНОВЫ РАЗВИТИЯ ПРОФЕССИОНАЛЬНО-ГРАФИЧЕСКОЙ КОМПЕТЕНТНОСТИ СТУДЕНТОВ ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЙ ПОСРЕДСТВОМ ГРАФИЧЕСКИХ ПРОГРАММ. Multidisciplinary Journal of Science and Technology, 5(6), 1831-1833.

8. Ibrokhimova, D. N. (2025). DEVELOPMENT OF PROFESSIONAL GRAPHIC COMPETENCE OF STUDENTS BY DRAWING A MODEL OF AN UZBEK SKULLCAP IN THE AUTOCAD PROGRAM. Наука и инновации в системе образования, 4(6), 95-98.

9. Иброхимова, Д. (2023). Теоретический анализ движения хлопка на сетчатой поверхности усовершенствованного конусообразного сепаратора. Общество и инновации, 4(5/S), 214-220.