Improving the Graphic Education System through Modern Graphic Programs

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Abstract: In the article, the role of graphic programs in the engineering sciences in the educational system, especially in technical higher education institutions, through them, we can see that the issues related to Build Art technologies, which are the demand of today, can be easily and conveniently solved. The ability to analyze the spatial properties and tasks of subjects is an important component of the graphic preparation of students. In the field of graphic education, development of students' spatial imagination, imaginative analysis of spatial images, activation of mental and cognitive activities of students, development of spatial thinking and imagination, imaginative observation and acceptance of spatial phenomena, shapes, and acquisition of all graphic knowledge and skills, keeping in memory creative qualities such as staying have been adding a significant share to the creation of content.

Keywords: Graphics programs, education, water storage facilities, 3D model.

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The ability to analyze the spatial properties and tasks of subjects is an important component of graphic preparation of students. In the field of graphic education, a number of psychological scientists on topics such as the development of children's spatial imagination, imaginative analysis of spatial images, division into parts, assimilation of surfaces and shapes into their minds: B.F.Lomov, B.G.Ananev, M.D.Aleksandrova, Y.N.Kobanova-Meller, K.I.Veresoskaya, V.A.Klimenko, N.N.Anisimov etc., the work experiences collected by students activate their intellectual and cognitive activities, develop their spatial thinking and imagination, imaginatively observe and perceive spatial phenomena, shapes, and acquire and retain in memory all graphic knowledge and skills is contributing significantly to content creation.

The current state of the problem under consideration. After our republic gained independence, the Law "On Education" [3], "National Personnel Training Program" [1] was adopted and put into practice in order to update and fundamentally reform the content of education began to do. In response to this, great work is being done in the field of graphics education as well as other subjects. In particular, drawing programs and textbooks of general

education schools are being re-analysed and their new generation is being created.

However, despite this, there are still a number of problems in the field of graphic education, for the purpose of their elimination, scientific research and research are still insufficient. For example, one of the most important of these is the problem of increasing the level of theoretical knowledge in teaching students graphic literacy, and during the next quarter of a century, no research work was conducted on this topic. If we analyze the research work carried out thirty years ago, L.M. Gosudarsky paid special attention to increasing the level of theoretical knowledge of students in graphic education. He conducted scientific research on this topic. He stated that "in order for students to fully master graphic knowledge, first of all, they need to thoroughly master projection drawing, which is the theoretical basis of drawing [8]. In the field of production, the system of rectangular projections drawings are used more. That is why it is extremely necessary to teach students to read and make such drawings in depth. The rules of constructing axonometric projections and their methods of execution should be considered as methods that help to read complex drawings. "Students will systematically use the knowledge gained from projection drawing throughout the course of drawing." Indeed, L.M. Gosudarsky correctly pointed out the projection drawing department as the basis of graphic literacy. Because this section forms the theoretical basis of the drawing course. However, based on the demand of that time, the drawing was able to recommend the use of some elements of theometry. It certainly cannot meet today's requirements and goals. Because today, graphic education requires teachers to develop students' spatial thinking, inventiveness and creative activity through projection drawing topics [11]. During the former Soviet system, it is difficult to show a researcher who has done more positive work than Professor A.D. Botvinnikov in the development of the field of graphic education in general education schools.

A.D. Botvinnikov in his scientific research gave a wide place to the content of teaching based on projection, and he also came to the conclusion that projection drawing is the basis of developing graphic literacy in students. He deeply analyzes the subjects of projection drawing and negatively evaluates the fact that the theoretical and practical knowledge contained in them are separated from each other. It proves the need for theoretical and practical knowledge to complement each other in the in-depth teaching of graphic literacy to students [15]. It proves the need for theoretical and practical knowledge to complement each other in the in-depth teaching of graphic literacy to students [15]. In this regard, he S.M. Kolotov, K.A. Yankovsky, A.I. Ostrovsky, P.Y. Galperin, B.F. Lomov, Ye.N. Kabonova-Meller etc., rely on the work experiences and opinions of a number of Methodist scientists. At the same time, it gives examples from the work experience of developed foreign countries, America, Germany, and Romania, and shows that the subjects of projection drawing in the textbooks created by them are composed of the integration of theoretical and practical knowledge. Stating that projection drawing is important in improving the effectiveness of graphic education in general education schools, he emphasizes that by studying the topics of this section, it is possible to form a number of positive qualities of students, such as activating mental activity and developing spatial thinking [4].

In fact, one can hear from many expert teachers that the projection drawing section is the core of the drawing course. That's why most drawing olympiad tasks content is taken from projection drawing section.

It is known that in-depth mastering of somewhat complex sections and topics included in the program in all subjects is carried out at the expense of optional training. Before analyzing the work carried out in the optional classes from drawing, let's dwell on the opinions and work experiences about the role of optional classes in the educational process. Scientists who have conducted scientific research in this field express the following points.

Pouring of matter. Therefore, without experimenting with the help of computer modeling, first creating and testing the most suitable model for certain systems significantly reduces the costs of

experimentation. Saving costs for experiments with the help of models, in turn, leads to greater economic efficiency [1].

What is 3D modeling? 3D modeling is the creation of a 3D project based on a sketch or drawing. To create a 3D model of objects, special programs are used on devices [9], for example, tablets, computers. Rendering is one of the important stages in the modeling process. Modern 3-dimensional Engineering computer graphics allows to make a model of an object or a person as realistic as possible, to create a 3D model that is difficult to distinguish from a real person or object. A professionally modeled product can be easily presented to clients, investors or partners. 3D modeling software produces three-dimensional digital effects [9]. You've seen the results of 3D modeling in movies, animation, and video games, filled with creatures and structures in this world.

3D modeling is the creation of any surface or object by manipulating polygons, edges, and vertices in a simulated 3D space. 3D is the process of creating a view. 3D modeling can be achieved manually with special 3D production software, which is an artist's polygonal allows you to create and deform surfaces or scan a real object into a set of data that can be used to represent objects digitally. 3D modeling software. 3D modeling software allows you to create basic 3D models of characters or objects. Fully customizable programs give you the tools you need to fill your designers with precise details [9]. There are many 3D modeling software on the market. Here's a look at some of the top rated ones: AutoCAD runs 3D before it's popular. This professional trading software has been around since 1982 and is considered the gold standard by many designers. Available on Windows and Mac operating systems.

The process takes a lot of time to master, so it is not recommended for beginners in 3D design. The same developers make Sculptris, a similar but simpler free 3D modeling program that 3D designers can try first. 3DS Max from Autodesk is a video game developer and visual designer. Popular with effects artists. Although the program can deal with animation and engineering, those features require extensive training to master. 3DS Max works with Windows. Sketch Up is a 3D program for designers with experience in 3D modeling. Sketch Up specializes in architectural structures and is often used to visualize architecture, interior design, urban planning, engineering, and construction. Available on Windows and Mac OS operating systems. Blender animated movies, visuals. is an open source 3D modeling software suitable for creating effects, art, interactive applications and video game. Works on Windows, Mac and Linux operating systems. Here are some examples of where 3D modeling is used: 3D modeling is used in many fields, including engineering, architecture, entertainment, film, special effects, game development, and commercial advertising. 3Dtechnology popular example is its use in mainstream movies. Just think of director James Cameron's 2009 film Avatar. The film helped transform 3D modeling into the 3D industry when it used many of its 3D modeling concepts to create the movie planet Pandora.

Results and analyses. There are many different ways to represent a topographic surface, such as the earth's surface, and each has its own merits and demerits. Before moving on to the next chapter, we will give a little information about these methods.

Relief is the most complex element depicted on general geographic maps. If simple shapes are described by reducing the width and height based on the scale, it is necessary to describe a third indicator - the height - for the relief.

In fact, 3d modeling is important in today's society. Below we will look at the steps of building a 3D model of a dam.

Based on the given plan, the topo-surface is introduced (Spatial geometry is imagined)

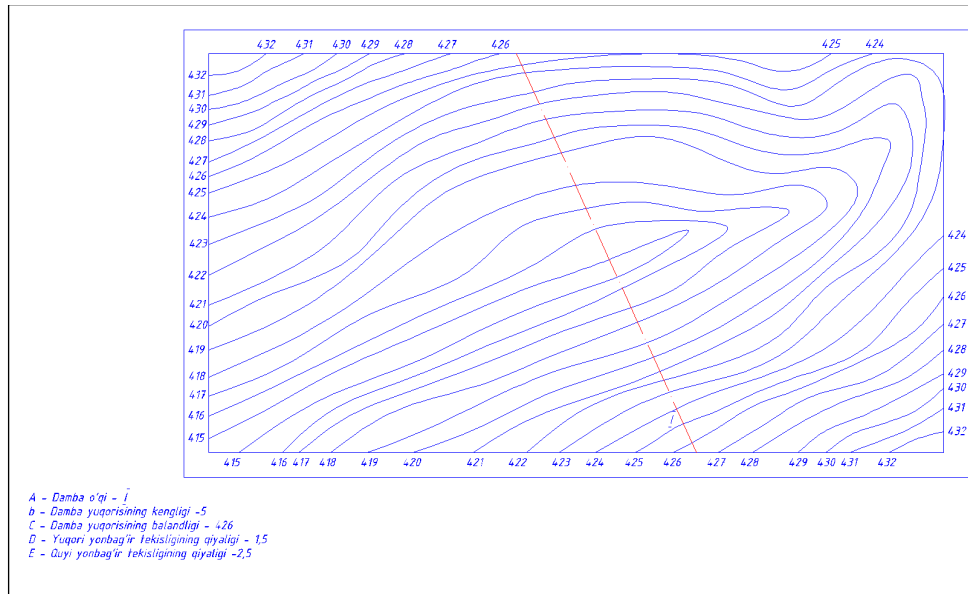The axis of the dam is selected according to the option

Figure 1

To determine the height to which the topographic surface horizontals are raised, starting from the lowest horizontal or the highest horizontal, since the scale is 1:200, height marks are shown at 5mm intervals (415=5; 416=10; 417=15...)
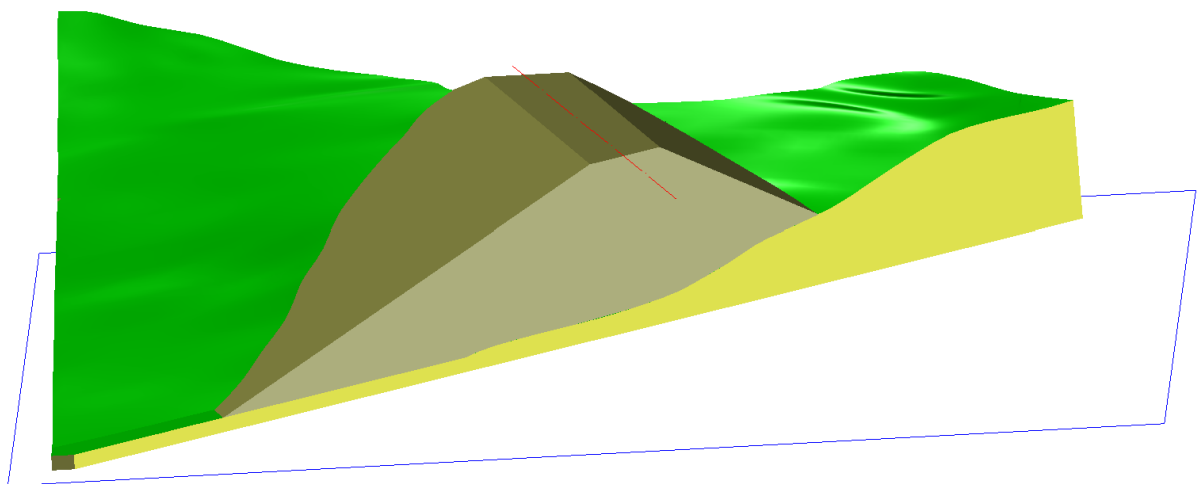

Figure 2

Summary

Students' knowledge of modeling is formed in the process of mastering the reality of the environment, drawings. In higher education, students should acquire and understand the most important three-dimensional aspects and features of the real world - two-dimensional and three-dimensional, the basic criteria of drawing and graphic software, acquire a number of skills and abilities, and follow them in practice there are the most favorable conditions for them to acquire the necessary knowledge to express their feelings accordingly.

Increasing the teacher's responsibility in the education of students by using the means of teaching engineering computer graphics, giving them pedagogical and psychological knowledge is one of the current socio-pedagogical problems of today.

They will be able to use three-dimensional modeling tools in the teaching of engineering computer graphics. Methodological developments, set of tasks, multimedia electronic guide developed on the basis of scientific analysis of research results and tested in practice are used in

all higher educational institutions of our republic, in the conditions of increasing demand for teaching graphic programs, they will not only help students, but also Engineering in computer graphics and will have the knowledge, skills and abilities to use three-dimensional modeling.

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