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METHODOLOGY OF GRAPHIC COMPETENCE DEVELOPMENT OF FUTURE ENGINEERS BASED ON AN INNOVATIVE APPROACH

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A B S T R A C T	***K E Y W O R D S***
This article talks about the development of graphic competence based on an innovative approach, the use of effective methods of computer graphics, geometric modeling of objects.	material-technical, scientific potential, OpenGL, trajectory, automatic design, electronic drawing

INTRODUCTION

It should be recognized that the 21st century is truly the age of information technologies, because the flow of information is developing at such a rapid pace that we cannot ignore this process, and each of us has become a certain participant of this process.

It is not difficult to observe that computer graphics and design are inextricably linked with every field based on the demands of the times and industrial needs, and the need for it is increasing. It is known that in information exchange, the information received with the help of a person's sense of sight is the most effective, and it also leaves a deep mark on the memory. Audio information also has a positive effect. but the exchange of information is carried out not only with words and sounds, but also with images, colors and shapes. As a clear proof of this, various books, notebooks and magazine covers, advertisements posted on the sides of the streets and on the facades of buildings, various movies, clips and other socio-cultural programs broadcasted on television, which is a mass media, newspapers andWe can also see how well-designed our resources are, which are provided through the Internet, from the platforms of mobile communication tools. Of course, at the core of these works is higher education in connection with tasks such as the training of highly qualified specialists who demonstrate their intellectual abilities in order to further strengthen the economy of our country in the domestic and foreign markets and ensure the well-being of the peoplescientific potential and material and technical support of the institution is of great importance.

MAIN PART

Computer graphics are graphics on a computer or graphics created with the help of a computer. Computer graphics is used as a drawing and modeling tool. if computer graphics is understood as a picture on the monitor, then it can be said that computer graphics appeared at the same time as the computer. Sometimes, the birth of computer graphics is associated with the year when computer games appeared. in other words, computer graphics is considered one of the rapidly developing directions of new information technologies, and it forms the content of the automatic design system. "A modern automatic design system not only turns a drawing into an "electronic drawing", but computer technology is distinguished by the breadth of its database and the ability to use effective methods of geometric modeling of objects. 7 Working with information in graphic programs is focused on the organs of sight, hearing and perception of a person, that is, images and sound are widely used to provide information. The main goal is to convert information into images and sounds. Although there are many computer graphics programs available today, they differ from each other depending on the areas of mutual application. Specialists in each field choose a graphic program that is convenient for their activities. the capabilities of the programs are also focused on a specific field. Therefore, when choosing a graphic program, it is necessary to take into account its capabilities. In most cases, it is necessary to master other programs or disciplines before using a graphics program.

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The scope of application of computer graphics and design is very wide, first of all, the visual and design of this field is noteworthy. Size, shape, color texture, composition, copy and fonts are important in graphic design. to perform the given task in existing graphic programs and to work with shapes, fonts and sizes to achieve the desired result, to have an idea of color models and texture when coloring them, to know composition, to display the image on the computer screen and with itperforming the related operation requires a certain level of geometric knowledge from the user.including, information about object replacement in plane and space, projection, spatial imaging, invisible line and surface removal, painting, tracking its direction, color models are reflected in the manual. based on the

presented theoretical data, the OpenGL environment, which is considered one of the common practical software interfaces for creating real objects, creating applications in the field of two- and three-dimensional graphics 4, was considered. Vertices are the unit of information in openGL, and complex objects are built using them.the programmer creates the vertices and shows how to connect them (via lines or polygons), sets the camera and lamp coordinates and parameters, and OpenGL takes care of creating the image on the screen. openGL is very useful for developers to build small three-dimensional scenes. There is no need to think about the implementation of three-dimensional graphics algorithms. The library is also useful for 3D programming professionals, as it exposes the underlying mechanisms and performs specified automation. OpenGL is a hardware-independent library. Using openGL, you can easily create a three-dimensional scene, add textures, light sources, transparency, fog effect, color mixing, as well as placing stencils, scene objects, cameras and lights along a defined trajectoryyou can move, just make an animation.

CONCLUSION

It is known that before coming to OTM, if students have the necessary basic knowledge and skills in the subject of "Computer graphics", then they will develop the spatial imagination and the ability to read drawings, which are necessary in the field of graphics. this indicates the expediency of starting related courses from the secondary special vocational education system. Thanks to the scientific research of a number of researchers in this regard, scientific results are being achieved, the practical application of which can give great results to the educational process

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