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THE EDUCATIONAL DIRECTION "FINE ARTS AND ENGINEERING GRAPHICS" IN THE FORMATION OF THE SCIENTIFIC WORLDVIEW OF STUDENTS THE ROLE OF COMPUTER GRAPHICS ENGINEERING SCIENCE

Hakberdiev Bakhtiyor Rustamovich
(PhD), Associate Professor at the General Professional department at Alfraganus University, Uzbekistan

Rustamov Umrzak Qabiljanovich
Teacher of the Department of visual Arts and music education, Faculty of social and Humanities, Andijan State Pedagogical Institute, Uzbekistan

Abstract
The sources covered in the article are quite full of information about the existence of a large number of computer graphics programs today, their capabilities, their application during the lesson and the formation of students' scientific worldview through them, the possibilities of modern computer tools and technologies, the successful formation of professional competencies, graphic training, independent and free student development and development his creative abilities.

Keywords Fine art, engineering graphics, teacher, engineering computer graphics, technology, integration, design, geometric shapes, competence, interactive, optimal, psychophysiological, drawing animation.

INTRODUCTION

Modern teaching staff are taking a new position, the task of which, first of all, should be aimed at organizing independent cognitive activity of students, at independently acquiring knowledge and developing skills for their application in practice. Although there are a huge number of computer graphics programs today, they differ from each other depending on the areas of their mutual application. Specialists in each industry choose a graphical program that is convenient for their activities. The capabilities of the programs are also focused on a specific area.

Therefore, when choosing a graphics program, first of all it is necessary to take into account its capabilities. In most cases, it is necessary to master another program or discipline before using a graphics program. In the educational direction ”fine arts and engineering graphics", it is necessary

to ensure the formation of a scientific worldview among students, enriching them with knowledge and concepts about ways to depict geometric shapes located in three-dimensional space, on a two-dimensional plane or surface and their properties, as well as the study of interrelated situations of geometric shapes, the formation of a flat drawing of geometric shapes in space, and also theoretical and practical knowledge in the field of computer graphics engineering. it is necessary to develop skills for the formation of practical significance [1,2]. The knowledge, skills and abilities of students are determined by their ability to independently solve practical problems, understand the essence of the work of the studied object (form, subject, process, situation), and assimilate the necessary information.

When evaluating creative thinking skills and qualitative indicators developed by students, such criteria as the transformation of knowledge into skills, the systematic nature of knowledge within the framework of state educational standards and the ability to creative thinking, spatial imagination are used [3,4].

In the modern education system, which is rapidly developing at the present time, new forms of educational organization have appeared. One of the new directions of the organization of training is a computer graphics-oriented approach using traditional streaming (AutoCAD) [5]. Since the interface of the modern AutoCAD system (Auto Computer – Aided Design – automatic design using a computer) was created taking into account the capabilities of the most modern computer tools and technologies, it guarantees high quality of drawings and diagrams, design tasks. Conducting classes using graphical programs allows you to expand the amount of information transmitted to students and enrich it. In addition, students acquire the skills to master programs independently in the process of identifying the advantages and disadvantages of programs, similarities and differences.

For the successful formation of students' professional competencies and graphic readiness, it is necessary to use computer technologies and an innovative approach based on interactive lectures and independent learning, says L.N.Apsimova. In order to effectively organize the teaching of computer graphics engineering in higher educational institutions, it is necessary, first of all, to plan the educational process in advance. The results of the practical application of modern computer technologies, animation engineering computer programs and tools for the development of students' spatial imagination in a short period of time have shown that graphic learning is becoming more effective [6].

The conditions for the organization of course work on the educational basis of modern lessons are as follows:

1) Creating conditions for the independent and free development of the student's creative abilities so that he is conflict-free and the most convenient (optimal) leader of his profession;

2) the realization of the student's abilities of a new order;

3) acceptance of the student's personality as equal, i.e. taking into account the motivational interests of the student, his attitude to new knowledge, faith in the abilities, thinking and abilities of the student to draw drawings.

4) forecasting the positive results of the transformation of new knowledge and skills acquired by students in the discipline “engineering and computer graphics” in their competence in the application of educational technologies and the growth of the general culture of students;

5) taking into account the age - related psychological and physiological characteristics of each student

6) adaptation of the influence of learning on the development and variability of the student's thinking to the level of his personal capabilities based on educational programs;

7) to provide constant assistance to the student on the way to independent acquisition of knowledge, understanding, development and convince him of this;

8) identification of development prospects and interest in their profession that each student may have, impartial monitoring and timely diagnosis and correct orientation [7,8].

Given the specifics of all students in the learning process, the chances of passing the lesson will not be as high as with an individual approach to performing educational and graphic work. Therefore, the teacher can realize with the students the opportunities that he could not take advantage of during the lesson by doing independent and graphic work [9]. Long-term observations show that students mostly acquire solid knowledge and skills by doing individual educational graphic work. The essence of computer graphics engineering is understood differently in modern scientific literature. A number of researchers consider computer graphics engineering as a branch of computer science dealing with the problems of obtaining various images on a computer (drawings, drawings, graphics, animations, etc.).

CONCLUSION

Computer graphics engineering is also considered as a tool. On the one hand, as a means of forming a graphical information environment using special equipment. On the other hand, as a means of developing personality and its abilities (imagination, creativity, development of aesthetic culture, etc.). At the same time, the teacher must constantly explain the connections between theory and practice. In the initial classes, it is necessary to explain to students the importance of computer graphics engineering in the national economy and technical development. Students should acquire knowledge and skills in the field of computer graphics engineering, which will be necessary for modern production and subsequent training.

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