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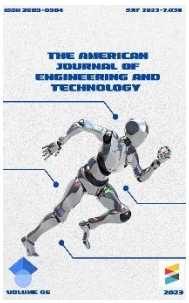

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Research Article

IMPROVING THE METHODS OF USING GRAPHIC PROGRAMS WHEN TEACHING DRAWING IN ENGINEERING GRAPHICS

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ABSTRACT

This article describes the possibilities of teaching drawing in the subjects of engineering graphics using engineering computer graphics programs, making geometric figures using the AutoCAD program, volumetric modeling of objects, cutting, applying color schemes and showing dimensions.

KEYWORDS

Engineering graphics, drawing, graphics, program, methodology, drawing, modeling, individual, stereolithography, technology.

INTRODUCTION

Particular attention is paid to filling the modern educational space with the latest software and multimedia graphics packages and complexes. Also, one of the main requirements for student competencies in the curricula of educational institutions in developed countries is mastery of engineering computer graphics. This is where it is appropriate to use the capabilities of computer tools such as exhibition, working with large volumes of data and remote access.

The widespread use of computer simulation in teaching engineering graphics has become possible for two reasons. Firstly, the problem of providing each student with a personal computer for studying and completing individual homework was solved. Secondly, as a result of the rapid development of so-called additive technologies based on a new stereolithographic method for the production of goods and products, it has become possible to create their three-dimensional forms using various materials

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based on accurate three-dimensional computer models.

In the process of teaching the subjects of engineering graphics, the principles of didactics are implemented through the introduction of interactive methods: scientific, systematic, consistent, reliable, solid assimilation of knowledge and visibility. Interactive drawing on the board allows you to fully implement these principles when teaching geometry and drawing. Solving problems in an interactive information environment improves the practical orientation of learning due to the possibility of modeling various processes, and the use of interactivity combines the functions of training, education and development of students. The science of engineering computer graphics, as an effective method and tool of cognition that strengthens mental abilities, is of fundamental importance for the development of all areas of knowledge and activity and is purposefully focused on changing human practice and life, penetrating into all aspects of human activity. , education requires its purposeful use in the process. The main goal of training in the specialty "Engineering Computer Graphics" is to teach students the order and rules for producing all types of graphic information - drawings, diagrams and diagrams in two-dimensional or three-dimensional space using a computer.

The expected results of learning activities in the educational process are the necessary actions that the student acquires and performs as a result of learning, and through these actions the teacher develops the drawing skills acquired by the students in the lessons, will know that it is suitable for the learning purpose and will be able to evaluate it honestly and transparently. In order to effectively organize the teaching of engineering and computer graphics in higher education institutions, it is necessary to plan the educational process in advance. To this end, it would be advisable to put on the agenda in higher education institutions the questions "Why are they teaching engineering and computer graphics" and "How should it be taught" to achieve new competence.

Tasks of executing geometric figures in engineering graphics using AutoCAD:

a) the ability to apply in practice the achievements of modern science, a creative approach to solving problems;

b) be able to make independent decisions when solving scientific problems in their specialty and be able to use them in their professional activities;

c) development of spatial, figurative, logical imagination and thinking;

d) have independence, initiative, hard work and other qualities;

e) draw up practical recommendations and reports on the use of scientific research results;

f) must master methods of automated and computerized modeling of solving professional problems.

Engineering allows teaching using computer graphics, three-dimensional modeling of objects, cutting, applying color schemes, and showing dimensions. Another advantage of computer technology is the simulation of processes that are very difficult or impossible to demonstrate in various real-world conditions.

Thus, considering the educational process as a system, its organizers, i.e., the influence of the teacher on students with the help of teaching aids, content and methods in a certain sequence in a certain state and computerized learning technology that evaluates the educational process. the result is realized in the control process.

As a result, the integration of computer graphics into engineering graphics led to the emergence of a new science - engineering computer graphics. This led to a change in the structure of engineering and graphic education. Computer graphics takes the process of training specialists in engineering graphics to a new

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level. To do this, it is necessary to reconsider the methods and means of teaching engineering graphics.

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