

ACHIEVING QUALITY EFFICIENCY BY ORGANIZING THE LESSON PROCESS IN DRAWING GEOMETRY WITH ELECTRONIC LEARNING RESOURCES

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ABSTRACT

In the field of descriptive geometry, organizing lessons effectively, encouraging creative thinking, and teaching spatial visualization skills are of significant importance. This article discusses how modern e-learning tools can be utilized to enhance the teaching of drawing geometry.

KEYWORDS: PowerPoint, AutoCAD, drawing geometry, engineering computer graphics, electronic programs.

INTRODUCTION

The educational reforms in our country demonstrate that, in today's era of globalization, the emphasis placed on education is essential for preparing competitive professionals for the global market.

In this regard, our leadership has been carrying out extensive awareness and advocacy efforts in education.

The goals are to deepen the reforms in education, organize educational institutions' activities based on advanced international practices, improve the system of training pedagogical staff, and provide additional support for non-state educational organizations.

To enhance the potential of personnel in the education sector, reorganize educational processes and services based on new principles, raise the quality of educational services to international standards, and accelerate the reforms, a "Center for Educational Project Office" has been established as a state institution (hereinafter referred to as the Project Office) was organising.

To revise the curriculum and syllabi of higher education institutions, aligning the educational process with general secondary education programs. In doing so, ensure that the share of subjects allocated to students' methodological training in pedagogy curricula reaches at least 50 percent .

Modern information technology provides students with limitless access to resources, enhances the efficiency of independent study, and opens up new opportunities for creativity, creation, and the reinforcement of various professional skills. It also enables the implementation of new teaching forms and methods by using tools to develop conceptual and mathematical models of events and processes.

The use of information technology in teaching allows instructors to apply various combinations of specific educational activities and quickly update the content of educational and control programs in line with new knowledge and technologies, using adaptable instrumental tools.

It provides teachers with additional means to organize collaborative learning and support students in selecting the most comprehensive curriculum options, guiding and facilitating the learning process.

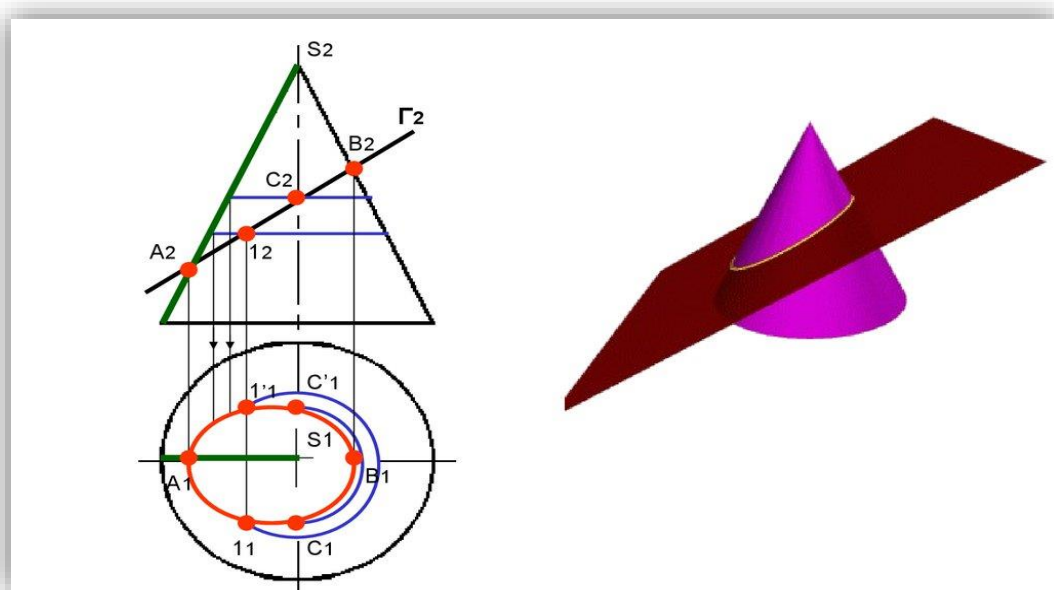
Teachers remain responsible for conveying the primary learning objectives, considering the distinctiveness and importance of each subject. Their role shifts from traditional methods to more intellectual forms of work. Information technology relieves teachers from explaining outdated routines related to students' mastery of academic content and skills, enabling them to focus on higher-level educational tasks. In the field of descriptive geometry, it is effective to enhance students' creativity and spatial imagination by integrating multimedia and software tools like AutoCAD and PowerPoint into the lessons.

If the developed teaching methodology is logically accurate and methodologically sound, theoretical and practical knowledge can be absorbed easily and conveniently, thus saving time in the learning process. Each teacher is expected to have a deep understanding of the theoretical foundations of this subject, as well as practical skills, such as:

In descriptive geometry, when selecting lesson topics to teach using computer software, students can practice using AutoCAD for various commands. For instance, in the graphical task involving the intersection of a cone with a plane in a particular position (figure 1), students learn to create a 3D drawing and its orthogonal projection, differentiate line types, draw circles, create tangents, delete extra lines, save drawings, add text, edit drawings and text, and add dimensions.

By executing these tasks in sequence, the goal is to improve students' drafting skills on the computer. The tasks involving the use of these commands can serve as exercises in "Geometric Drawing" topics, producing flat contour drawings as computer graphic exercises, which is methodologically sound.

This not only helps students develop spatial imagination in performing graphical tasks in descriptive geometry but also gives them a clear and creative understanding of the given assignments.



(1figure)



In the study of descriptive geometry, the skills developed through drawing 2D geometric constructions in AutoCAD enable the transition to 3D modeling. Using AutoCAD modeling tools to demonstrate algorithms for a cone intersecting a plane in a specific position enhances the understanding of educational content and helps students acquire skills in creating electronic models of objects. These models contribute to constructing projection drawings consciously and allow students to independently verify the accuracy of their work by comparing it with the drawing created in AutoCAD.

CONCLUSION

In conclusion, applying AutoCAD, PowerPoint, and Compass in the teaching of descriptive geometry is practical not only for pedagogical higher education institutions but also for technical universities, where using graphic software as part of introductory graphical instruction proves effective. Additionally, it should be noted that in higher education's engineering graphics courses, utilizing drawn graphic designs to solve educational tasks contributes to developing stable skills in using modern information technologies to address production-related challenges.

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