



VISUAL AIDS AND TECHNICAL AIDS IN TEACHING ENGINEERING GRAPHICS

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ABSTRACT

In modern teaching, visual aids and teaching aids play an important role. This article is due to the development of artistic and creative abilities of students in the visual arts. the theoretical substantiation and development of ways to activate students in the process of teaching them special disciplines, experimental verification of the effectiveness of the proposed method of using visual aids, and involving students in the design of special equipment and visual aids are considered.

KEY WORDS: *engineering, engineering graphics, support technician, artistic and creative abilities*

DISCUSSION

In recent years, the organization of the educational process in the discipline "Engineering Graphics" has risen to a qualitatively new level - now instead of a pencil, ruler and paper, students in the classroom work with specialized software. This step was due to the requirements of the modern labor market for graduates.

Renovation, new computers and laboratory furniture, the friendly attitude of teachers and the relevance of the software used increase the interest of students in studying the discipline. Complex drawings and diagrams are created on computers, displayed on monitor screens, and can be easily modified and edited.

When using modern information technologies for teaching, a printer, plotter, scanner or other peripheral devices should be provided in the office. To conduct training, student desks for a computer (computer desks) with space for a printer, scanner and other peripheral devices must be installed.

The number of computers is determined based on the area of the classroom, provided that there is at least 6 square meters per computer.

The teacher's workplace is also equipped with a computer table, a chair and a personal computer connected by a local network with students' computers. The teacher's table and equipment stand should be located 1.5 - 2 m from the front wall to enable the use of the overhead projector. The overhead projector should be placed on a stand and at the teacher's desk at a distance of at least 1.8 m from the board.

The cabinet can also be equipped with projection, video and audio equipment:

- Overhead projector;
- epiprojector;
- Overhead projector;
- Other projectors;

- color TV with a diagonal screen size of at least 61 cm with a VCR, DVD-player.

A projection screen or part of the chalkboard (or one of the doors) must be white in order to display the projection screen. Although modern projectors do not require special screens.



Sanyo PLC-XU41 with a luminous flux of 1500 lumens, 298x71x214 mm, 2.7 kg XGA resolution (1024x768 pixels). In terms of the main lighting and weight and size parameters, this projector is similar to the well-proven PLC-XE20 model, but it also has additional functions: the ability to select the Blackboard mode for projection onto a green chalkboard with automatic color correction, which ensures perception while maintaining the original color palette;

Dimmer function to automatically adjust the luminous flux depending on the displayed video signal, providing the best contrast of the projected image; on-screen menus in Russian; Key lock and PIN code functions to protect the projector from unauthorized access.

All screen, sound and screen-sound aids should be kept away from the heating system.

Audio and video tapes, floppy disks and disks should be stored in metal safe-type cabinets.

Stationary and mobile technical teaching aids (TTA) should be used in the educational process. Mobile TTAs should be installed on portable and folding or mobile stands in accordance with the requirements for stands for technical training aids.

AutoCAD offers the most advanced drawing tools, as well as convenient 3D modeling tools. This program is a platform for building CAD systems of various levels of complexity.

3ds max is a popular 3D modeling and rendering software. It includes all the necessary tools for architectural modeling: a set of standard objects (windows, doors, stairs, fences) and a library of various architectural materials. The application allows you to quickly work and, experimenting with various elements of models and spaces, you can immediately see how they look. 3ds max interacts with solutions built on the AutoCAD platform.

MAYA was developed ideologically as a professionally oriented program. Innovations in dynamics calculation and technology in hair and fluid simulation have made Maya the premier special effects tool for film and video. A high level of integration with third-party tools, both visualization and modeling, allows the world's leading studios to embed Maya into their workflow, whether it be developing computer games or creating special effects for film and television.

AutoCAD is the world's most famous computer-aided design system.

The AutoCAD system, as well as software products based on it, significantly increase the speed of working with projects of various sizes, allow you to create and update design data more efficiently.

AutoCAD2007 is a completely new level of 3D model building capabilities compared to previous versions. At the initial design stage, a conceptual model of the object is created and edited using

AutoCAD tools. The resulting result is used to build the final three-dimensional model, which serves as the basis for the formation of all output documentation: specifications, flat drawings, presentation materials.

AutoCAD 2000 drawing automation suite is a powerful drawing tool. It provides fast and accurate generation of the drawing you want to follow your instructions. It gives you the tools to easily correct mistakes made in the course of your drawing and even make major adjustments without having to re-create the entire drawing. It generates clean, accurate final designs.

AutoCAD 2000 works for you. It does not put anything "from itself" into your drawing. The completed drawing, produced using AutoCAD 2000, looks virtually identical to the drawing as if the drawing had been produced with the utmost care by hand. ("Virtually" because AutoCAD 2000, when used with the right hardware, can dramatically improve accuracy.) Your drawing is configured exactly according to your instructions, and each element is placed exactly where you want to place it.

AutoCAD 2000 is a drawing automation (DRA) application for your microcomputer. DMA applications are a very powerful tool. The speed and ease with which the preparation and modification of a drawing using a computer system can be performed, provide significant time savings compared to "hand" drawing. AutoCAD 2000 provides the microcomputer user with capabilities previously available only on large and expensive computing systems.

There are virtually no restrictions on those types of drawing work that can be performed using the AutoCAD 2000 system. If a drawing can be created manually, then it can be generated by a computer.

Here are some of the system's features:

- Architectural drawings of all kinds;
- Interior design and room planning;
- Technological schemes and organizational charts;
- Curves of any kind;
- Drawings for electronic, chemical, construction and engineering applications;
- Graphs and other representations of mathematical and other scientific functions;
- execution of art drawings.

AutoCAD DesignCenter (ADC) allows you to view or copy data from any drawing. Need to flip through the contents of a drawing? Very simple - blocks, layer definitions, layouts and xrefs are taken from many sources and inserted into the current drawing. If the block or target drawing has assigned units, then the block is automatically scaled according to the specified data. The built-in search



function allows you to search for drawings using information about their contents.

LITERATURE

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