

**EFFECTIVENESS OF TEACHING USING MULTIMEDIA COMPUTER GRAPHICS IN
TEACHING "VIEWS, CUTS, SECTIONS"**

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Abstract. *The article provides recommendations on teaching the subject of views, cuts, sections in engineering and computer graphics with the help of modern computer programs.*

Key words: *cutting, sectioning, view, multimedia technologies, engineering and computer graphics, graphic sciences, design compendium.*

As a result of the development of today's techniques and technologies, the reduction of manual labor has led to the development of production, construction, automobile industry and other important sectors of the economy. Qualified personnel make a great contribution to the development of the economy. The training of such personnel requires great skill from pedagogues so that they can meet the requirements of the world standard. It is required to approach world experiences in the training of competitive personnel. During the years of independence, our country made important changes and updates in the field of education, as well as in all areas. From school to higher educational institutions, the material technical base and teaching-methodical support were brought to a high level. The development of the education system has risen to the level of state policy. This is the opportunity created for the young generation. Special attention is paid to the training of engineers. In the training of engineers, first of all, it is necessary to increase graphic literacy. For this, it is important to study drawing geometry and engineering graphics taught in higher education. It is known that this subject is in the block of general engineering subjects and is a subject that is difficult to master. One of the main problems is that as a result of the reduction of teaching hours of this subject, it became necessary to provide students with a large amount of information in the 1st semester and to develop students' knowledge and skills in this subject. In order to master the science of engineering and computer graphics, first of all, it is necessary to develop imagination (spatial and geometric). As a result, teaching in science leads to retention of the intended knowledge and skills in the memory of students and development of creative thinking skills based on them. Detailed models, visual aids, information, graphic images help in the development of design skills. Today, with the help of modern computer technologies, computer graphics can be used in the teaching of graphic subjects. As a result of the penetration of computer graphics into all fields today, the need to teach this subject to students of higher educational institutions is increasing day by day. The use of computer graphics in the teaching of drawing geometry and engineering graphics, engineering graphics is highly effective. As an example of this, you can see the software-pedagogical tool in Figure 1. The volume of information provided on the topic of cuts, sections, views is large, and it is impossible to fully explain it in 1 or 2 academic hours. Therefore, it is convenient to use computer graphics in solving such a problem.

Practical work on the computerization of the educational process is being carried out. The purpose of this is to achieve effectiveness and efficiency in the educational process. Dzhanabaev J.J. According to [1], "To speed up the educational process, computerization is required for informational training aimed at a specific goal." Use of new pedagogical technologies in teaching, computerization, provides the basis for accelerating the educational process. As a result:

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- previous education saves and uses experience in system development;
- learns the new curriculum;
- Modern computer technology is used in the educational process.

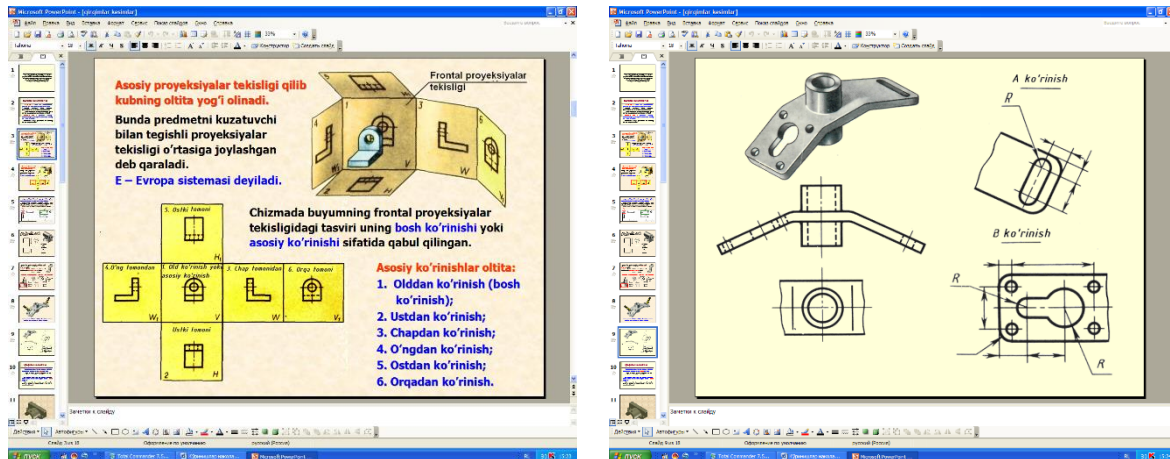


Figure 1. Multimedia software-pedagogical tool created on the topic.

Khamrakulov A.K. [2] stated that when planning the use of software-pedagogical tools in the teaching of drawing geometry and engineering graphics, attention should be paid to:

- students' cognitive abilities;
- not to use DPVs at the entrance of the science;
- to the sequence of topics;
- to give instructions on the use of DPVs before using them in each lesson;
- to ensure proportionality of traditional teaching methods and computerized teaching methods;
- to use computer games (in science).
- it is necessary to ensure taking measures not to let students get tired.

When using software-pedagogical tools, the professor-teacher will have the opportunity to use new pedagogical technologies together with traditional methods. Experiments have proven that the use of software-pedagogical tools in the teaching process gives high results.

It was observed that as a result of the application of the created software-pedagogical tools to the educational process, the knowledge and skills of students increase to high levels, and the information they acquire has an effective effect on their creative thinking abilities.

In conclusion, it should be noted that the use of modern computer programs in the teaching of engineering and computer graphics serves as an important factor in the high level of student achievement and lesson efficiency.

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