TECHNICAL PROBLEMS OF GEOMETRIC-GRAPHIC EDUCATION IN HIGHER EDUCATIONAL INSTITUTIONS.

Otabekov Ulug‘bek G‘ayrat O‘g‘li

TASHKENT STATE TRANSPORT UNIVERSITY

Annotation: this article examines the theoretical and practical aspects of the formation of a graphic culture of students of engineering specialties in modern conditions.

Keywords: AutoCAD, Adobe Illustrator, REVIT, 3DS MAX, Corel Draw, Adobe Photoshop, graphic culture.

Education is currently being transferred to a new level of quality that reflects innovation in the engineering profession. Therefore, the need for training specialists in the field is growing. Taking into account the modern concepts and innovative technologies found in all aspects of human life, the requirements for the level of professional training of graduates of higher educational institutions, the ability to independently learn and think, optimize their activities and make sound decisions are increasing. Academic science educational design activity-consists in the formation of relevant scientific and methodological knowledge and practical skills in the process of training engineers of various fields. [1]. Currently, engineering project drawing collections are being implemented in modern computer graphics applications AutoCAD, Adobe Illustrator, REVIT, 3ds MAX, Corel Draw, Adobe Photoshop, etc. Thanks to this, objectionable opinions arose in higher education about the need to study drawing geometry and technical drawing. It is suggested that drawing is outdated as a science of geometry and technical drawing, and that modern computer technologies have taken its place on the computer, which make it possible to perform all engineering drawings qualitatively and completely.

Educational programs on the problems of geometric-graphic education take into account the peculiarities of the future specialist, and for this, after graduating from the subject "Drawing geometry", students perform drawings that are directly

related to their future specialty. Students should always see the main idea of science, its connection with future practical professional activities, since this gives graphic work a vital character, indicates the purposefulness of mastering the experience of professional activity. Drawing geometry is the first engineering discipline in which the technical education of the future engineer begins. The difficulties in its study depend on a special combination of logical thinking with spatial imagination. The combination of these two possibilities forms a new level of thinking - spatial thinking, which allows you to increase the ability to work with images in space. Without them, however, there cannot be any kind of engineering activity and creativity. When studying drawing geometry, the following basic readmission tasks are solved:

- study of basic concepts of drawing geometry;

- creation of a graphical database of images of geometric elements;

- study of methods and rules for constructing images of spatial forms in the plane;

- development of skills to create spatial images of objects on the basis of a logical analysis of their images;

- development of spatial thinking;

- study of methods and algorithms of graphic action for solving various practical metric and positional problems in the plane;

- To have the skills to apply methods and concepts of drawing geometry in the practical solution of geometric costracking problems, automated execution of drawings and engineering computer 3D modeling.

Graphic culture is one of the most important components of the professional culture of an engineer. Currently, the presence of a graphic culture is necessary for any educated person. This is due to the widespread use of computer graphics, the emergence of large volumes of graphic, pointing and symbolic information in all

areas of social and production life. Graphic images are one of the main tools for knowing the world around them, a means of creative and spatial thinking of an individual.

In the process of teaching" geometro-graphic education in technical higher education institutions", it will be more difficult for students to master the subject perfectly than in other subjects. This is due to the fact that in order for students to know the science perfectly, they will first need spatial imagination and practical knowledge. With this in mind, the organization of classes by students using various didactic processes, methods and pedagogical technologies in mastering the subject is one of the most basic tasks of this modern educator. But if this is the case, the students ' knowledge and assessment from the subjects is not limited to the perfect organization of pedagogical classes, that is, it is a subjective factor that also depends on the student's interests in science and their own acquisition. Provides for the presence of two mandatory components: Test assignments are given to students so that they can work independently, check the level of formation and formation of knowledge, which students perfectly master the subject, that is, control the knowledge, skills of students. The most effective control tools in strengthening Geometro-graphics and engineering graphics are the performance of practical tasks, independent training and, of course, test tasks. Let's dwell on the method of test tests, the tests are not only a practical form of control, but also an indicator of strengthening the degree of assimilation of drawings, acquired knowledge of students to increase interest in science by the test method. In the science of Geometro-graphics and engineering graphics, practical forms of control take a lot of time, it takes a lot of time to check the results. The main difference of the test from the practical control work is that the test always includes a measure of the degree of assimilation. Thus, testing evaluation has more objectivity and independence than evaluation of practical control work. Thus, the test has obvious advantages. Currently, there are many types of various tests, but for teachers working with students of technical specialties, the lecture should be independently compiled test assignments due to the originality of the materials. Therefore, the teacher must have

access to the methodology for preparing test assignments, the basics of testing spatial comfort and practical knowledge and skills, their application in practice, knowledge of the requirements for preparing test assignments. To date, the transition to new curricula will lead to a significant reduction in students ' audience hours with the teacher. As a result, many sections of the curriculum are defined by students for independent learning. This will clarify the issues of management and development in the system. In relation to the independent work of students, automated teaching systems are developed.

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Conclusion

Drawing geometry with geometric images develops spatial imagination and thinking, which will be necessary for the professional activity of an engineer in solving various technical problems, performing and reading drawings. In recent years, in connection with the transition of education in higher educational institutions to a modular-credit system, it is required to provide a new type of Education, which is characterized by large-scale independent work of students and their active involvement in specific projects. Their successful implementation is impossible without a stable formed Project culture of future specialists.

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