Methods of Forming Professional Graphic Competence of Future Teachers

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ABSTRACT

This article provides presents suggestions and recommendations for future teachers' professional graphic computer design problems and their elimination

Keywords: graphic program, competence, information technologies, geometric construction, reality, criterion.

Today, due to the rapid development of information technologies and computer graphic programs, there is a need to develop new methods of developing the professional graphic competence of future teachers. One of the ways to develop the professional graphic competence of future teachers is to organize practical, laboratory classes in "Computer graphics", "Computer graphics and web design" and "Computer graphics and visualization" in mathematics, geometry, color image, It is considered appropriate to use the integration of drawing, physics and mathematical modeling. These disciplines serve as the basis for the emergence of computer graphics as a science. In this place, the formation of informatics as an independent science was formed on the basis of the interconnection of mathematics and cybernetics, and computer graphics as a structural department of informatics, the creation of modern computers and the development of their corresponding software due to which the company is developing. The creation and development of computer technologies is based on mathematical rules. Therefore, one cannot become a competent expert in the field of informatics and information technologies without good knowledge of mathematics. Therefore, it is possible to come to the following opinion, that is, one cannot be a competent specialist in computer graphics without knowing mathematics. In this regard, the question arises: what do you need to know in mathematics in order to successfully develop the fundamentals of computer graphics and become a successful specialist in this field?

Analyzing the content of the science of computer graphics, the tasks related to the creation of simple geometric shapes, that is, the modeling of lines, circles, rectangles, triangles, squares and various objects and structures to graphic primitives, coloring objects, changing their shape and learning the design of various graphic projects.

Therefore, to increase the effectiveness of teaching "Computer graphics", "Computer graphics and web design" and "Computer graphics and visualization" and to form students' graphic competence, it is necessary to organize classes by applying the subjects, future informatics. It is no exaggeration to say that it performs the main tasks in the formation of the professional graphic competence of its teachers.

The content of the tasks of graphic subjects is closely related to solving problems from the geometry course. Almost any construction problem can be solved using computer applications, packages, and programming environments that require knowledge of the solution to the problem. Geometric constructions and their solution Among the many mathematical works of one of the greatest thinkers and encyclopedists of the early Middle Ages, "The Book of Natural Secrets of Spiritual Techniques and Subtleties" has a special place.

Geometric numbers is the only manuscript kept in the library of Uppsala University in Sweden (V.V. Grinshkun, E.Y. Bidaybekov [1]). It offers unique algorithms for solving many geometric construction problems that are important in human practical activities with the help of a compass and ruler: land planning, architecture, engineering, geodesy, etc.

For many centuries, the interest in such problems is not only due to the uniqueness of their solution methods, but also, most importantly, to their great practical importance. Currently, geometric construction issues are also of great interest, because the design of construction objects, architecture, the design of various equipment and many other practical issues are based on geometric constructions. Such issues are of great importance in the development of the professional graphics of the future informatics teacher.

Therefore, forming one of the content areas of the geometry course in higher education institutions, they are an important element in teaching the subjects "Computer graphics", "Computer graphics and web design" and "Computer graphics and visualization", one of its components.

According to these arguments, the coordinate system considered in computer graphics is different compared to mathematics and geometry classes. In mathematics, different coordinate systems are represented by only one coordinate system in computer graphics, so it is important to understand the conversion between coordinate systems: from Cartesian to graphic, from polar to graphic, from parametric to graphic, and vice versa, to scale and visualize that part of the mathematical coordinate system. should also take into account the transfer to the plane of the screen [2].

Computational mathematics is of great importance for a deeper understanding of computer graphics algorithms and methods [3]. The topic of its study is the definition of computational algorithms and criteria, their quality assessment, the theoretical foundations of digital algorithms, as well as the issues of their computer implementation, including the problems of digital simulation, play a major role in the process of understanding the modern scientific understanding of the rules of fractal graphics. The direction of computational informatics is the main core of the content of teaching computer graphics. In addition to studying the rigorous mathematical theory of calculation methods, it is designed to show future teachers the wide use of mathematical tools in the study of processes. These include the phenomena of reality, the wealth of possibilities of modern computer technologies, and at the same time, it studies its main limitations [4].

Therefore, in the development of the professional graphic competence of future informatics teachers in higher education institutions, practical, laboratory training, including lecture training, based on the integration of subjects, should be based on critical educational technologies and digital educational tools.This, in turn, ensures the development of professional graphic competence of future informatics teachers.

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