Research Article

IMPROVING THE METHODOLOGY OF DEVELOPING GRAPHIC COMPETENCE OF STUDENTS OF TECHNOLOGICAL EDUCATION

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ABSTRACT

In this article, comments are made on the technology of raising the level of their professional level in the process of training future technology science teachers.

KEYWORDS

Competence, technology, students, information, specialist, production, research, engineering, computer graphics.

INTRODUCTION

Today's globalization process each one field from specialists high competence Demand is doing A specialist must be responsible and competitive in the labor market. A modern graduate should not only know the profession well, but also be ready for continuous professional growth, be socially and professionally mobile.

It is necessary to revise the system of higher education, taking into account the needs of modern society, on the basis of competence-based, activity-based, student-oriented and information-cybernetic approaches.

The separate elements of the issue of developing the professional psychological competence (thorough and deep knowledge, factor, high professional skills) of future pedagogues in any field were studied even by representatives of the ancient world (Democritus, Plato, Socrates, etc.). However, it can be said that research on the problems of developing the professional and psychological competence of

teachers of future technological education began relatively recently. In particular, from the academic years of 1985-86, for the first time in the pedagogical universities of the former union, the optional course "Fundamentals of Pedagogical Mastery" (Osnovy pedagogicheskogo masterstva) was introduced. It was intended to raise the professional level of future teachers of technological education.

For teachers of technological education - to be able to clearly and reliably explain theoretical materials, to be able to practically perform the methodology of introducing students to any type of instructions (instructions), to see various methods of processing in work classes at a high level It takes the development of pedagogical qualities such as knowledge, educational methodology, pedagogical tact and precision. The said ones, in turn, are manifested through professional qualities in three groups. To them:

1. Theoretical knowledge and intellectual training;

2. Special practical training and skills;

3. Personal pedagogy; that is, pedagogical skills are included.

engineering and technology, the importance of graphic competence of graduates of technical higher educational institutions is generally recognized. Its high level is necessary in almost all types of professional activity of the graduate: design, production, technology, research. Graphical methods of presenting information are clear, visual, concise, and graphic language is an important means of visual communication between people. Mastering these methods requires conscientious and systematic work from the teacher and teaching methods that correspond to the current level of technology development.

The formation of graphic competence is helped by the disciplines of the geometric-graphic block: descriptive geometry, engineering and computer graphics. Recently, the methodology of their education has undergone revolutionary changes, which is connected with the active introduction of information technologies into the educational process. Modern researchers unanimously agree that the above subjects are "ideally integrated with computer technologies and offer wide use of interactive didactic tools, automated learning systems, multimedia tools for presenting information, test management." A large number of psychological-pedagogical studies (EPVox, LVDanchenko, TIRusskikh, MASKripkina, etc.) are devoted to the formation of graphic competence, but methodological aspects of the formation of graphic competence of undergraduates in informational conditions. and is to justify, develop and experimentally test the model of formation of graphic competence in the conditions of the educational environment of the university.

Graphic competence is a component of professional competence, which allows a university graduate to engage in various types of professional activities (for example, development and execution of design and technical documents, use of technological equipment, etc.). Almost all researchers consider graphic competence to be a type of system consisting of a number of components that are interconnected and interact with each other. The analysis of the definitions of graphic competence given in pedagogical literature showed that the graphic competence of technical university students can be considered "an integral part of professional competence, one of the highest qualities." "Systematic and dynamic formation of personality" is characterized by the ability to perform and read drawings, prepare design documents, and use them effectively and rationally in professional

activities related to solving various graphic tasks. the totality of existing knowledge, skills, experience in this field.

A structural model of graphic competence

Component	Content
cognitive	A set of knowledge, skills and competencies in geometric and graphic sciences necessary for free work with terminology, basic theoretical rules of drawing, algorithms for solving graphic problems for bachelors of technical fields of education.
Operational and technological	The ability to use the system of graphic knowledge, skills and competencies: - execution and reading of drawings of different levels of complexity and purpose; - preparation of project documents; - choosing the optimal algorithm for solving various problems: typical and non-standard
personal	Positive motivation to carry out graphic activities Value-semantic relationship to the content and result of graphic activity
Diagnostics	The ability to diagnose the level of one's graphic abilities, to associate it with certain criteria

The information-educational environment of the university is "a system of tools and resources that provide conditions for the implementation of educational activities based on information and communication technologies." Modern researchers say that by combining various educational resources

into a single system, it becomes an important tool for solving various pedagogical problems . Let's consider the main conditions for the development of graphic competence components in the higher education system.

1. Development of the cognitive component of graphic competence is helped by the following: the possibility of creating educational material according to the module principle and implementing it using hypertext technologies; visualization of algorithms for graphic constructions, modeling of studied objects; increasing the set of educational tasks; the interdependence of various means, methods and forms of organizing educational activities in the educational process; automating the monitoring of the student's educational activities.

2. The development of the operational-technological component is possible by using problem-based educational technologies in the educational process, introducing practice-oriented tasks of different levels of complexity into the training course: modeling, comparison, design. , error detection, technological tasks, etc. The undoubted advantage of ITS is the possibility to implement various forms of student work in the performance of this type of tasks: individual, frontal, small group work. Conversation, forum, joint work of students to complete assignments and interactive discussion of team work results can be organized.

3. The development of the personal component of graphic competence will be helped by the use of active teaching methods and the rating system of knowledge assessment in the educational process. An important factor that contributes to the development of personal and cognitive components of graphic competence is the use of computer visualization tools in the educational

process. "Involvement in the educational process with a special pedagogical task, seeing becomes a means of forming and improving students' spatial imagination, developing their imaginative and imaginative thinking; contributes to the development of cognitive abilities, increases the motivation to study science" [9].

4. Development of a diagnostic component. The information-educational environment allows for continuous monitoring of the educational achievements and skills of students. The student's portfolio, including test results on the studied material, graphic works, essays, creative works, allows him to assess the level of graphic preparation, identify his "weaknesses", plan and organize educational activities. The following were used as criteria for the level of formation of graphic competence: knowledge of graphic terminology and concepts, ability to solve typical problems, ability to read drawings (cognitive component); fluency in algorithms for solving graphic problems (typical and advanced complexity), the ability to use the acquired knowledge individually and in a team (operational and technological component) in solving professionally oriented graphic tasks; responsible attitude to tasks, interest in solving various graphic tasks (personal component); the ability to analyze the results of graphic activities, the ability to self-organize educational activities (diagnostic component).

COCNLUSION

The information-educational environment is becoming an important factor in the formation of graphic competence of students in technical areas of teaching. When evaluating the possibilities of mixed educational technologies in teaching graphic sciences, it should be noted that this form of education allows solving a

number of pedagogical problems, for example: implementation of individual educational trajectories depending on the level of initial preparation of the student; encouraging the study of science, strengthening the student's educational activity, creating a comfortable emotional and psychological environment during the educational process, etc.

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