DIDACTIC POSSIBILITIES OF IMPROVING FUTURE TEACHERS' TEACHING METHODOLOGY BASED ON MODERN PROGRAMS

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ABSTRACT

The idea put forward in the article is that pedagogical processes of developing educational and didactic competencies of future teachers in higher education institutions using computer graphics, didactic tools of teaching, methodical system model of the educational process have been developed, at the same time, students It is explained by the improvement of the methodical system and model of the subject in order to increase the quality and effectiveness of the design activity and teaching with the help of computer graphics.

Keywords: Methodology, study, information technology, computer graphics, programming, technology, education.

INTRODUCTION

It is known that in the developed countries of the world, in the conditions of informatization of the society, great importance is attached to the improvement of the methodological foundations of the formation of information competence of future teachers, the development of a practical-technological system for the development of digital competence in students, and the modernization of computer education software. The use of information technologies, the development of integrative didactic tools for the organization of cooperative research and creative activities are of great importance in preparing future teachers for the design, implementation and forecasting of the processes of prospective development of enterprises. Today, project activity in technical higher education institutions has a professional direction, a creative description, and requires the creation of a free environment for students to make independent decisions, taking into account their individual characteristics.

LITERATURE REVIEW

In modern conditions in our Republic, great importance is attached to accelerating the practical training of future teachers with the help of advanced pedagogical and information technologies, establishing an information-project environment in technical higher education institutions, and improving the methodological support of teaching specialized subjects. "Creating wide opportunities for the implementation of innovative projects in all areas, introducing modern mechanisms for supporting research and innovative initiatives" is defined as the priority goal of improving the position of the Republic of Uzbekistan in the global innovation index. This requires the development of a model for the development of the design competence of future teachers in the information environment, the methodical conditions for its implementation, and the improvement of the didactic algorithm.

Decree of the President of the Republic of Uzbekistan No. PF-60 of January 28, 2022 "On the Development Strategy of New Uzbekistan for 2022-2026", No. PF-5847 of October 8, 2019 "Uzbekistan Decree of the Republic of Uzbekistan "On approval of the concept of development of the higher education system until 2030", PQ-4391 of July 11, 2019 "Measures to introduce new management principles into the system of higher and secondary special education", Resolution No. PQ-4699 of April 28, 2020 "On Measures for Widespread Implementation of

Digital Economy and E-Government", Resolution of the Cabinet of Ministers No. 824 of December 31, 2020 "Higher Education This scientific article serves to a certain extent in the implementation of the tasks specified in the Decision "On measures to improve the system related to the organization of the educational process in institutions" and other regulatory legal documents related to this field [1-6].

RESEARCH METHODOLOGY AND EMPIRICAL ANALYSIS

The document defining the requirements for the training of teachers of technical higher education institutions in various specialties in the conditions of the modern economy, production is rapidly developing - this is the state educational standard and qualification requirements of higher education. The current SES (State Education Standards) includes the following in terms of professional activities of teachers in the field of technology and engineering:

- Accounting and software design work;
- Design and construction work;
- Production, industrial and technological works;
- software-project technological works;
- experimental research works;
- scientific research works;
- organizational and management work.

In our opinion, graphic competence is an intellectual activity related to spatial thinking processes aimed at knowing the standards and rules of drawing, the skills and competencies of their practical application, and the level of working with various graphic programs or graphic packages.

From the point of view of the competence approach, we consider graphic competence as a science, and focus on competence in the field of computer technologies in production and industry.

Students' willingness to use computer graphics designing (CGD) in the educational process, to know the logical-didactic structure, motivational-valuable, and theoretical aspects of using CGD, to demonstrate relevant emotional and volitional qualities, and to learn a set of professional skills includes.

Professional graphic competence has three levels of formation: motivational-valuable, cognitive-active and creative-volitional.

The motivational-value approach is characterized by the need to successfully use computer technologies in the course of training and further professional activity. As a result of this, the student not only has a general understanding of the subject, but also understands their importance and use in the educational process, not without having an empty idea about the technical means of computer technologies in construction.

The use of a personal computer is considered the most important component of education today. Presentation of information in the form of graphic images, issues of specialist training: presentation of drawings, diagrams, working drawings, sketches, presentations, visualization, modeling, design, animation, virtual world, etc. remain relevant. In the conditions of professional training of future teachers in the field of computer graphics, the growing pace of education informatization, the creation of a unified information environment and the rapid development of software, intellectual products and solutions, from social order, society to

teachers Based on the requirements of the industry, it should be directed to the training of a competitive specialist [8]. For this purpose, it is necessary for the future teacher to be able to choose optimal design solutions, to be able to apply design activities in dual education, to have spatial imagination, programming and design competence, and to know how to use graphic programs of computer technologies.

According to Y. Vox [7], it is recommended to teach graphic subjects using the method of specific situations for students of higher education institutions. That is, in the context of the formation of general professional and programming-design competencies of future teachers, the actual aspects of teaching graphic sciences to students of higher educational institutions were considered. The problems that are an obstacle in the training of teachers of graphics education are shown. In solving these problems, the method of analyzing specific situations is proposed as one of the tools that help to strengthen and raise the level of graphic science education. Various types of implementation of this method are presented, with evidence that it is useful in combination with traditional and innovative teaching methods.

We will touch on some shortcomings in the training of specialists who can meet such complex requirements in higher education institutions [8]:
   • state and society orders for the professional training of teachers, high requirements set by the employer, and insufficient theoretical and methodological justification of the process of teaching project activities to future teachers with the help of computer graphics;
   • insufficient level of scientific and practical potential in the process of forming project activities using computer graphics and training teachers in the higher education system;
   • methodological and technological aspects of the implementation of the development model and program that help to improve the quality of education and use these opportunities in the training of future teachers are insufficiently developed;
   • the need for creative, self-awareness of future teachers through meaningful, research, active - creative, informative and practical projects, and the limited ability to organize this process based on existing pedagogical conditions and computer graphics technologies.
   The analysis of scientific and pedagogical literature allows to determine the following composition of graphic competence of future teachers [10]:
   - motivational-value component (personal qualities that determine the place and direction of a person as an object of activity;
   - active - creative (the presence of theoretical knowledge that ensures conscious activity);
   - practical component (knowledge and skills mastered by a person, tested in practice are considered the most effective);
   - reflexive-evaluation component (independence, activity, creativity, creativity and self-evaluation of a person in the implementation of professional graphic work).

Table 1: **Components of the structure of the competence of designing future teachers by means of information and communication technologies and a set of actions aimed at their development**

Competence is a component of the structure	Designing with the help of computer graphics is a set of practical actions of students in the process of applying competencies in practical activities

Motivational valuable	understands the uniqueness and social importance of professional graphic activity in education; individual, practical qualities and abilities that are important for the activity of a person in the field of programming graphics are shown; motivation to acquire competencies necessary for project activity is formed; teachers show a steady interest in design activities, their imagination and analysis; emotional and volitional relationships are formed in designing activities; the results of technical objects and processes created on the basis of individual and personal experiences in designing activities are manifested in the form of a portfolio; shows interest in working with information (searching, identifying, sorting, systematizing, applying, planning); Having a realistic vision of social and professional opportunities can eliminate professional difficulties.
Kognitiv (intellektual)	can fully demonstrate possession of theoretical knowledge and graphic competence qualities in designing; graphic literacy and spatial visualization in design, and the culture of dispersion analysis; knowledge of drawing standards and rules, their effective application, acquires skills and qualifications; the future teacher understands himself as a creative subject of professional graphic activity; the project based on graphic knowledge understands the design tasks, the difference between types of graphic activities; analyzes the nature of design and construction activities, relying on graphic knowledge during the design process; can show priority solutions on the basis of the project; knows graphic and project construction methods;
Practical	graphic literacy, can understand and express ideas and information in graphic form; the ability to quickly create a graphic design product with the help of graphic programs is consistently demonstrated; the ability to freely create graphic-design products based on computer programs is manifested in necessary situations; can create sketches and working drawings; can perform technical and economic calculations; different views of graphics (desktop, 3D can use mobile application software, scientific construction, etc.) and technical documents in practice; is able to repeat, practice, perform sample assignments of learned information on graphic activity; makes a selection of based graphic and construction, design solutions;

Reflexive assessment	-	the content of graphic competences is used statically, i.e. reflects the level of development of techniques and technology, which systematically develops continuously; will have intellectual activity related to spatial thinking processes aimed at knowing the level of working with graphic programs and graphic programs; the formation of graphic competence in designing can design the educational process based on innovative educational technologies and interactive methods; performs research and creative graphic assignments; performs productive creative graphic activity with subjective and objective news; participates in design circles and contests such as computer graphics, computer design, technical creativity; creative approach to problem solving, analysis in graphic design work; can recommend solutions for creating technical objects; a modern package combining computer technology with graphics and can use programs; formed personal quality: a person independently evaluates his professional graphic and construction activities; demonstrates the ability to create design-construction products using digital (3D-sized) technologies; design, research, creativity, technical and economic calculations, makes decisions, manages graphic activities.

RESULTS

To determine the content and operational components of software design competence of future teachers [12]:

　　• first, we analyzed the activity of the teacher, which showed that the design of new technical equipment is aimed at achieving a common goal. To achieve this goal, the teacher must perform the following tasks in sequence. For example, it includes the technical task of design, technical proposal, technical project, working project (draft construction documents).

　　• secondly, based on the active approach, practical skills are the working form of his theoretical knowledge.

Integrating the content of educational activities in designing activities using computer graphics graphic programs at any age stage, including knowledge and skills on various topics aimed at developing students' creative abilities, taking into account important factors. allows to connect with the use of directed laws, development, growth of creative abilities.

Software design and construction implies the presence of knowledge, skills and qualifications in students. It assumes the ability to define technical features, justify economic efficiency, work on information, creative generalization and freely imagine projects of various forms, independently develop constructions and documents corresponding to them, and apply new projects.

CONCLUSION

It is desirable to maintain fundamentality and universality in the content of the standard of professional pedagogical education. As one of the methodological solutions to this problem, it is proposed to include the following in the logical structure of teacher training [13]:

　　1) content design technology;

　　2) the part defining the role and place of humanitarian, socio-economic knowledge, skills and qualifications;

3) the part that determines the main competence reflected in the content of the future teacher's professional training.

These parts cover the following four elements of preparation [14]:
• experience of perception, knowledge that is its reflection;
• activity implementation experience (in the form of skills to act on the basis of a sample);
• experience of creative activity (in the form of ability to make non-standard decisions in difficult situations);
• the experience of establishing emotional-valuable relationships (in the form of personal direction).

The content of education, as mentioned earlier, students' skills are formed on the basis of social experience, which is mastered on the basis of the organization of personal activity and acquires meaning. Perception is carried out by applying the type of activity that corresponds to the phenomenon being studied, the experience of reproductive, creative activity and establishing emotional-valuable relationships.

Thus, in the content of education, not only the knowledge of existence, but also existence itself appears as a pedagogical object that needs to be studied.

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