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EFFECTIVE METHODS FOR DEVELOPING PROFESSIONAL SKILLS IN FUTURE DRAFTING (TECHNICAL DRAWING) TEACHERS

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Abstract
This article describes some pedagogical aspects of developing the professional competence of future teachers and their effective impact on the education system.

Keywords: Competence, teacher, multimedia, component, method, qualification, skill.

Introduction

Today, considerable attention is being devoted to the education sector in Uzbekistan, and favorable conditions are being created for its development. Education has increasingly become a matter of state policy. In particular, the President of the Republic of Uzbekistan, Sh. M. Mirziyoyev, places special emphasis on supporting teachers in educational institutions. Teachers are expected to continuously improve themselves, introduce innovative ideas into the education system, properly educate future generations, enhance the efficiency of the educational process, and nurture morally mature and well-rounded individuals [2].

Significant efforts are also being made to improve the effectiveness of education in the field of engineering graphics. Special attention is given to designing educational content, structuring professional graphic competencies, developing new teaching methods, and implementing them in practice. In the context of modernizing the curriculum, future drafting teachers are required to acquire professional graphic knowledge, skills, and competencies and apply them effectively in practice. The Development Strategy for the Advancement of the Republic of Uzbekistan identifies as a priority the "further improvement of the continuous education system, expansion of access to quality educational services, and the continued training of highly qualified personnel in

accordance with the modern needs of the labor market" [1]. Therefore, enhancing the methodology for developing professional graphic competence in teachers and providing them with opportunities to master all levels of professional graphic activity is an urgent task. The development of society depends on its ability to align with technology, innovation, and novelties.

Competence can be defined as the ability of a future professional to effectively use theoretical knowledge in practice. It reflects a high level of professional skill and the capacity to demonstrate talent in practical tasks. Within a competence system, professional competence is a key methodological phenomenon, referring to the acquisition and high-level application of the knowledge, skills, and qualifications required to perform professional activities [8].

Competencies are generalized methods of action that ensure effective performance in professional activities. They include not only problem-solving skills but also motivational factors, the ability to locate and analyze information sources, knowledge and skills specific to certain types of activities, and the theoretical and practical understanding necessary to comprehend and address problems. According to psychologists I. N. Shpilrein, S. G. Gellershteyn, E. A. Klimov, V. D. Shadrikov, K. K. Platonov, and N. V. Kuzmina, competence encompasses the qualities and abilities that help individuals navigate various situations and solve problems. Professional competence implies adherence to established standards within a specific occupation.

Working based on spatial representations and completing various educational and production tasks is a fundamental aspect of intellectual activity. In forming the professional competence of future drafting teachers, developing students' spatial imagination and related skills—through accurate graphic representation and description—is an essential component of graphic activity. No subject can cultivate spatial imagination and reasoning as effectively as technical drawing.

Scientific and methodological literature often uses terms such as spatial imagination, spatial reasoning, spatial concept, and spatial thinking. Each term carries a distinct meaning, as imagination differs from reasoning, and reasoning from conceptual understanding. In drafting lessons, these concepts are applied to help students visualize the spatial form of objects through projection construction. Understanding objects, their spatial relationships, and properties is not accidental; it develops through the study of graphic literacy with the guidance of drawing teachers.

Many details in technical drawing are composed of geometric solids or their combinations. For a student to accurately understand the shape of an object, they must have a clear mental representation of geometric forms and their interrelationships. In psychology, imagination is defined as the mental reconstruction of past experiences, perceptions, and phenomena. When determining the shape of details, initial conclusions are drawn by following rules for sufficient visual information. If a student cannot mentally combine multiple views of a detail, the three-dimensional structure cannot be accurately visualized.

Technical details often consist of components such as holes, recesses, or cuts, which are treated as constructive elements. Current educational content offers varying approaches to these elements. Constructive components are formed based on geometric surfaces and their interrelations, performing different functions accordingly. Correct naming and application of these components in teaching is essential for methodically organizing technical drawing lessons. This approach also fosters students' creativity and interdisciplinary integrative thinking. Disciplines such as labor education (or technology), visual arts, mathematics, and geometry play a crucial role in developing students' polytechnic skills. They provide a strong foundation for teaching students to read, analyze, and create technical drawings at a high-quality standard. Completing drawings according to standard requirements cultivates aesthetic appreciation, cleanliness, diligence, and discipline among students.

It is recommended that the first drawing assignment be titled "My Examples of Graphic Representations". This task is given after the introductory lesson on technical drawing. Students are asked to create applications on drawing paper using cut-out graphic illustrations from newspapers and magazines, based on their personal interests. This approach allows teachers to understand students' preferences, while encouraging oral and written commentary, thus increasing engagement.

A lack of self-directed work outside class negatively impacts the quality of teaching and learning. Competency-based teaching strategies are required to ensure that students and teachers can apply their acquired knowledge, skills, and competencies in daily practice. The experience of foreign countries is also beneficial; for example, in Russia, monitoring and evaluating the development of engineering graphics teachers' competencies is emphasized. Today's students are developing faster and have different learning needs compared to previous generations. Traditional methods using wall charts or static visual materials fail to maintain attention. Working at the board and drawing manually is time-consuming. Therefore, modern methods using innovations, multimedia, graphics, video techniques, and new software are essential in technical drawing and engineering graphics lessons.

The use of multimedia tools in engineering graphics and technical drawing has several advantages:

- Enables the use of colored graphics, animations, hypertexts, videos, and slides;
- Allows continuous updating of information;
- Reduces publishing and reproduction costs;
- Facilitates working with tests, new methods, lesson plans, and interactive web elements;
- Provides access to electronic libraries and resources;
- Offers distance learning opportunities for students with limited mobility;
- Provides economic efficiency for teachers and students through online platforms such as Zoom;
- Enables visualization of processes that are difficult or impossible to observe in real time.

In conclusion, it is essential to further develop the structure and components (motivational-value, practical-activity) of professional graphic activity for future teachers of engineering graphics. The use of electronic educational resources, such as AutoCAD, 3D Max, video lessons, and the integrated application of design-construction and graphic assignments, has a significant positive impact on developing the professional graphic competence of engineering graphics and technical drawing teachers.

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