

Development of Creative Imagination of Pedagogical Students of Higher Educational Institutions on the Example of Graphics of Fine Arts and Engineering

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Abstract

This article is mainly about the ways through which we can improve the creative thinking of our young generation. In the process of modern education, the importance of higher education is considered important. Focusing on the strategies of any developed countries, we can see that the beginning of the achievements, undeniable intellectual opportunities are realized through the reform of the education system. The global processes, the need for an innovative society, the development of Science and technology, along with the creation of many opportunities for young people, put before them such pressing demands as rapid decision-making, the formation of innovative thinking, the development of intellectual potential.

Keywords: education, intellecting, intellectual, competent, creative, creativity, teacher, talent, science, imagination, creative thinking.

The demand for the form and content of education is radically changing in the conditions of today's innovative pedagogical educational cluster, where fundamental reforms are being carried out in the field of education throughout the Republic. Also, the development of methods for the development of creative competence in the process of teaching innovative education is a requirement of the period. The peculiarity of growing students' creative competence is that they, like other abilities, develop during the period of activity. So, in solving this problem, the main task of the teacher is the search for forms, paths and means of organizing the activities of the development of creative competence of students in the process of teaching the drawing geometry module. In this article, we will focus on the importance of issues developing students' creative competence in the teaching of "Engineering and computer graphics" at the faculties of Tashkent State transport University. It is known that the development of Student Creative competence cannot be achieved in one or more lessons. An absolutely independent, developing education, a special approach to this issue will be necessary. Otherwise, only the ability of students to memorize information will develop. Relying on world experience, we can agree that students' creative competence is more developed by approaching through non-standard questions, specific issues. At the time of drawing up such questions and issues, it is necessary that professors take into account the individual-oriented education, that is, the individual characteristics of each student. The conduct of the study organized the process in such a way that creative thinking, talented students, able to build three projections of a given point with any, coordinates, became interested in such issues. We offered such students to solve issues on the required condition of the detail projection given in the next projection drawing. At the same time, the need for acquaintance with the same topic through the literature was definitely emphasized. Drawing is necessary for drawing up drawings on the subject of geometry and engineering graphics and gaining knowledge and skills that allow winter, as well as developing spatial imagination. The

ability to compose and learn drawings is based on the knowledge of the method of making drawings, the solution of various positional and metric issues and a number of conditions adopted in drawing geometry and construction drawing. Spatial imagination refers to the property of a person to mentally bring the shape, dimensions, proportions, color, surface texture and qualities of various objects, including buildings, structures and structures. The projection method DSB is the so-called image making method drawing general for geometry and engineering graphics. Drawing is studied in geometry if the theoretical basis of this method is studied, then its practical application in engineering graphics is studied. In the course "drawing geometry and engineering graphics", the rules for making drawings and their implementation, which are used in drawing geometry, are adopted. The qualifications from building drawing were applied in engineering graphics and drawing geometry. Therefore, drawing geometry and engineering graphics are studied at the same time. The main style of work of a superficial student is the independent study of the material using a textbook, teaching aids, as well as a CSR (the unified system of CSR documents state standards was introduced from January 1, 1971 and updated in 2006 is called Uzds). This research work allows the student to get acquainted with the issues of studied drawing geometry and projection drawing, such as the issuance and application of it to the production of a sequence of execution according to the standard requirement, and to find new issues for himself. This method, which was used to find orthogonal projections of a point given by its coordinates, has been stated in simple language in conjunction with a stay on a very wide range of subjects, and examples have also been solved. During the analysis of their solutions, the spatial position of any point is determined, and some given drawing is divided with a deeper knowledge of solving geometry problems faster. In addition, the student will be familiarized with the level of his knowledge as well as with his fellow students. A creative student receives answers to many of his questions by studying and using this news, his thinking skills, problem solving skills and qualifications increase. To date, in all developed countries, Science and technology, means of production, as well as technological processes are almost completely computerized. Computer is also used in all production enterprises of the world, as well as in the educational system, on the basis of graphic programs with great potential for automating design work in the creation of new techniques and technologies. To train specialists in accordance with the requirements of the present time, the great importance on the computerization of educational subjects in all branches of the state, the system of continuing education, especially in schools, vocational schools, higher education institutions, was borne by the ministries of public and higher education and pedagogical scientists of higher educational institutions.

Improving the creative thinking of students in fields like graphics of fine arts and engineering can be achieved through the following ways:

1. Encourage brainstorming sessions: Teachers can encourage students to participate in brainstorming sessions where they can share their ideas and thoughts. This helps in promoting creativity and generating new ideas.
2. Provide opportunities for experimentation: Students should be given opportunities to experiment with different materials, techniques, and tools. This helps them to explore their creativity and develop new skills.
3. Encourage collaboration: Collaboration with peers from different backgrounds can help students to gain new perspectives and approaches to problem-solving. This promotes creativity and innovation.
4. Provide feedback and critique: Feedback and critique are essential in promoting creative thinking. Students should be encouraged to give and receive feedback on their work, which helps them to improve their skills and generate new ideas.
5. Engage in reflective practice: Students should be encouraged to reflect on their work and identify areas for improvement. This helps them to develop their creative thinking skills and become more self-aware.

6. Incorporate technology: Technology can be used to enhance creative thinking by providing tools for visual thinking, collaboration, and experimentation. Teachers can incorporate technology into their teaching methods to provide students with opportunities to develop their creative thinking skills.

7. Provide exposure to diverse perspectives and experiences: Exposure to diverse perspectives and experiences can help students to develop their creative thinking skills by promoting empathy, understanding, and innovation. Teachers can provide opportunities for students to explore different cultures, ideas, and perspectives.

The development of creative imagination among pedagogical students in higher educational institutions, particularly through the use of graphics in both the fine arts and engineering disciplines, underscores the integration of artistic and technical skills. This interdisciplinary approach is pivotal in fostering innovation, problem-solving abilities, and a holistic perspective on learning. Let's explore how the convergence of graphics in fine arts and engineering can enhance the development of creative imagination among pedagogical students:

In fine arts, graphics play a central role in fostering creativity and imagination. Through drawing, painting, and other visual arts, students develop an understanding of visual representation, artistic expression, and the ability to convey emotions, ideas, and narratives through images.

The study of graphic arts in fine arts education encourages students to critically analyze visual compositions, explore various artistic techniques, and appreciate the aesthetic dimensions of visual expression. This process helps cultivate imagination through the exploration of diverse artistic styles and genres.

Pedagogical students can leverage these insights to incorporate visual arts-based activities and exercises in their teaching practices. Encouraging students to engage in art-based projects can foster imagination, innovation, and emotional expression, creating a dynamic and engaging learning environment.

In engineering, graphics and visualization are pivotal in conceptualizing, designing, and communicating technical solutions. This involves the use of drafts, diagrams, and visual representations to innovate and solve complex engineering problems.

Through the study of engineering graphics, students develop design thinking, problem-solving abilities, and the capacity to creatively translate ideas from concept to tangible solutions. Visualization becomes essential in engineering education for understanding spatial relationships and mechanical concepts.

Pedagogical students can integrate principles of technical visualization and design thinking in their teaching methodologies. By incorporating engineering-based visualization exercises, they can nurture students' spatial reasoning, inventive problem-solving skills, and creative thinking, preparing them to approach challenges from multifaceted perspectives.

The integration of artistic expression with technical visualization can lead to collaborative projects that merge artistic sensibilities with engineering principles. This interdisciplinary approach fosters a deeper understanding of the connections between creativity, innovation, and problem-solving.

Pedagogical students can encourage collaborative projects and interdisciplinary experiences that promote innovative problem-solving approaches. This can involve envisioning cross-disciplinary solutions to real-world challenges, incorporating artistic and technical perspectives to develop well-rounded, imaginative solutions.

By introducing interdisciplinary projects that fuse artistic and technical elements, pedagogical students can inspire their own students to think critically and creatively, fostering a holistic approach to learning that emphasizes imagination and innovation.

Incorporating graphics from both the fine arts and engineering disciplines into pedagogical education paves the way for a more robust and imaginative learning experience. By facilitating a

convergence of artistic and technical skills, students can foster a multidimensional approach to problem-solving, innovation, and creative expression, shaping them into well-rounded educators capable of nurturing creativity in their future students.

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