



TECHNOLOGICAL EDUCATION METHODS AIMED AT DEVELOPING STUDENTS' CREATIVE ABILITIES

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ABSTRACT

This article explores technological education methods aimed at developing students' creative abilities in higher education institutions. From theoretical and practical perspectives, the study analyzes innovative pedagogical approaches, digital technologies, project-based learning, and problem-based learning as key factors in fostering creative thinking. The effectiveness of technological teaching methods in enhancing students' creativity is substantiated, and practical recommendations for their implementation in higher education are provided.

KEYWORDS: Creativity, technological education, innovative methods, digital learning, project-based learning, competency-based approach.

INTRODUCTION

The rapid development of modern society and the continuous renewal of science and technology require higher education to respond to new challenges and expand opportunities. After preschool and secondary education, the tasks facing higher education programs become even more complex. Today, the purpose of the educational process is not limited only to providing instruction and transmitting knowledge. The main focus is on shaping students as creative individuals who think independently and can approach problems in unconventional ways. Such an approach requires the development of skills that are essential in a dynamic and highly competitive technological environment.

By its nature, technological education is distinguished by its strong orientation toward practical activity. This approach is aimed at developing students' innovative thinking, generating new ideas, and forming the ability to apply acquired theoretical knowledge in practice. In higher education, the teaching-learning process plays an important role in preparing students for practice by integrating modern technologies—such as digital tools, simulations, and interactive learning materials. This process supports students' individual growth and strengthens their independent thinking ability.

Developing creativity within the technological education process is a pressing issue, since it requires the use of effective methods to renew students' approaches to problem solving and to form the necessary competencies. By organizing this process in an optimal way, students gain opportunities not only to expand their knowledge, but also to become specialists capable of solving real problems through practical work. Thus, developing creativity in technological education contributes not only to students' personal growth, but also creates a foundation for their success in professional and social life.

Therefore, methods based on creativity and innovation in technological education are essential for enabling students to express their ideas freely and creatively, generate new ideas, and apply them in practice. By combining new pedagogical approaches, modern technologies, and

innovative thinking, the education system can obtain the key to successfully shaping future generations.

1. The Concept of Creativity and Its Role in Technological Education

Creativity is defined as a person's ability to generate new ideas, apply existing knowledge and skills in new ways, and solve complex situations through unconventional and effective solutions. This concept includes not only the process of creative thinking, but also the skills necessary for achieving success in various areas of life. Creativity plays an especially important role in higher education as students prepare for future professional activity, because the modern labor market demands specialists who can offer not only existing knowledge, but also new solutions.

Technological education creates a favorable environment for developing creativity. The main characteristics of this approach include the following:

1. Reliance on Practical Training: Technological education is characterized by an increased focus on practical activities. Students gain the opportunity to apply theoretical knowledge in practical processes, which strengthens their creative abilities. Through practical work in the learning process, students test their knowledge in solving real-life problems.

2. Working with Problem Situations: Technological education requires searching for innovative solutions and adopting new approaches to problem situations. While solving specific problems, students can develop skills in creative thinking and critical analysis. This approach encourages students to draw on personal experience and develop new ideas.

3. Applying Innovative Technologies: The use of modern and innovative technologies in technological education creates broad opportunities for creative thinking. Through technologies such as programming, robotics, and distance learning platforms, students can create concepts and test their ideas. This process helps transform knowledge into practice and prevents learning from remaining purely theoretical.

The role of creativity in technological education is aimed not only at strengthening students' theoretical knowledge, but also at increasing their creative potential. Such an approach prepares them to solve complex problems, encourages the development of new ideas, and creates a basis for becoming successful specialists in future professional activity. In this way, technological education functions as an important platform for developing creativity and expanding students' future opportunities.

2. Technological Education Methods Aimed at Developing Creativity

2.1. Project-Based Learning Method

The project-based learning method is an approach that motivates students to work independently or in groups on a specific problem. This methodology is effective for developing creativity because it includes several important aspects. First, it activates creative thinking: students are involved in generating ideas, discussing them, and evaluating them. As a result, students become ready to express their opinions openly and solve problems through innovative solutions.

In addition, the project-based learning method encourages students to take initiative. Students gain opportunities to participate actively in the process of creating new ideas and solving problems, and they broaden their perspectives by exchanging experiences with one another. This approach connects theoretical knowledge with practice, allowing students to see how their

knowledge can be applied in real-life situations. During a project, students engage in creative activity through planning their ideas and presenting results, which also develops their teamwork skills.

2.2. Problem-Based Learning Method

Problem-based learning is an effective approach that encourages students to engage in independent inquiry and is one of the main tools for developing creativity within the technological education process. Problem situations proposed by the teacher motivate students to analyze and think creatively. Through this method, students gain the opportunity to apply their knowledge in solving practical problems.

Problem-based learning helps students develop a critical approach in complex situations. They are able to compare different solutions, generate innovative ideas, and test them. This, in turn, strengthens students' independent thinking skills and prepares them for future creative activities. The problem-based learning method also encourages students to share their ideas and exchange opinions with one another, which supports the development of their social skills as well.

2.3. Digital and Interactive Technologies

Digital and interactive technologies play an important role in developing creativity in the technological education process. Virtual laboratories, simulators, digital platforms, and multimedia tools make the learning process more engaging and effective for students. Through these tools, students can receive explanations of theoretical knowledge in a visual format, which improves understanding and increases interest in learning activities.

With the help of virtual laboratories and simulators, students have opportunities to conduct experiments. Such opportunities contribute to deepening their practical knowledge, testing new ideas, and applying innovative approaches. Digital platforms create conditions for students' independent work, thereby enhancing self-management and creative abilities.

2.4. Practical and Experimental Activities

Practical and experimental activities are among the most effective methods for preparing students for real-life situations. These activities allow students to test their theoretical knowledge through practical work. By solving problems in authentic conditions, students demonstrate their creative potential, while also developing professional responsibility and innovative approaches.

Practical learning activities provide students with the skills and experience necessary to apply their knowledge in real life. This enables them to combine theoretical knowledge with practical skills and prepares them to address professional challenges in their future careers.

3. Pedagogical Conditions for Developing Creativity Through Technological Education

To develop creativity effectively, it is important to follow several pedagogical conditions in the technological education process:

1. Creating a Free and Creative Environment: A supportive environment should be created in which students can openly express their ideas and conduct creative experimentation with a

sense of psychological safety. Such a free environment promotes creative thinking and guides students in integrating their ideas.

2. Encouraging Students to Make Independent Decisions: Students strengthen their sense of responsibility by making decisions independently. By motivating them, educators help students reveal their creativity and develop innovative solutions.

3. Considering Creative Approaches in Assessment: When assessing students' creative work, it is necessary to consider not only traditional evaluation criteria but also creative approaches. This allows students to feel freer and more confident about their contributions.

4. Building a Collaboration-Based Relationship Between Teacher and Student: Active cooperation between teacher and student should be established. The teacher's role should include providing motivation and guidance. This becomes an essential condition for students to further develop their abilities.

In this way, pedagogical conditions should support the development of creativity in the educational process and assist students in generating new ideas and solving problems. Such conditions within technological education create a foundation for strengthening the creative thinking of future generations and enhancing their ability to interact creatively.

Conclusion

In conclusion, technological education methods serve as an important pedagogical tool for developing students' creative abilities. Project-based and problem-based learning methods, digital technologies, and practical activities activate students' creative thinking and provide them with essential skills for solving real-life problems. These approaches enrich students not only with theoretical knowledge but also with practical experience, preparing them successfully for their future professional careers.

Such methods within technological education contribute to shaping students as competitive and innovation-oriented specialists. Thus, for the higher education system, these approaches not only help achieve expected outcomes, but also encourage students to develop their creative potential and build a foundation for their future success. This process also helps meet the demands of modern society and enables the development of new ideas and solutions, thereby supporting creativity and innovation.

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