

METHODOLOGY FOR DEVELOPING ROBOTICS SKILLS OF STUDENTS MAJORING IN TECHNOLOGICAL EDUCATION

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Abstract. *This article discusses effective methods for the formation and development of robotics skills among students majoring in technological education. The study analyzes the use of modern pedagogical technologies, project-based learning, practical training, and digital tools in teaching robotics. In addition, the importance of robotics education in developing students' creative and problem-solving thinking is substantiated.*

Keywords: *robotics, technological education, methodology, practical skills, project-based learning, STEM.*

Introduction

In the context of rapid development of science and technology, robotics has become one of the most important strategic fields. In particular, preparing students of technological education for working with modern technologies and automated systems is a pressing task. The development of robotics skills equips students not only with theoretical knowledge but also enhances their practical abilities, creativity, and engineering thinking.

The Role of Robotics Education in Technological Education

Robotics is an interdisciplinary field that integrates mechanics, electronics, programming, and automation. Teaching robotics within technological education provides the following opportunities:

- familiarizing students with modern industrial technologies;
- developing skills for independent problem-solving;
- ensuring interdisciplinary integration based on the STEM approach;
- strengthening preparation for future professional activities.
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Methods for Developing Robotics Skills

To achieve effectiveness in robotics education, the following teaching methods are recommended:

1. Project-Based Learning Method

This method develops students' independent and teamwork skills. During the process of designing, assembling, and programming robotic models, students integrate theoretical knowledge with practical application.

2. Practical and Laboratory Classes

Training sessions conducted using robotics kits (Arduino, LEGO Mindstorms, Micro:bit, etc.) enhance students' technical thinking and help consolidate acquired knowledge.

3. Problem-Based Learning Method

By presenting students with specific problems or tasks, this method encourages independent thinking, analysis, and the search for innovative solutions.

4. Digital and Interactive Technologies

The use of virtual simulators, online platforms, and programming environments increases the effectiveness of robotics education and makes the learning process more engaging.

The Role of the Teacher in Robotics Education

In the robotics education process, the teacher acts as a facilitator, consultant, and motivator. The instructor should organize lessons considering students' individual abilities and apply innovative teaching approaches.

Conclusion

The development of robotics skills among students majoring in technological education is an essential component of modern education. Through properly selected methods and pedagogical approaches, it is possible to prepare competitive, creative, and technically competent specialists. Robotics-based education contributes to the comprehensive development of students' knowledge, skills, and competencies.

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