

INTEGRATION OF THEORY AND PRACTICE IN TRAINING ELECTRICIAN SPECIALISTS

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Abstract

This article discusses the importance of integrating theoretical knowledge and practical skills in the training of electrician specialists in vocational education institutions. Effective professional activity in the electrical field requires students to master both the theoretical principles and practical skills. The study examines the interrelation between physics and specialized technical subjects, as well as the role of laboratory work and industrial practice in developing professional competencies. Furthermore, the article explores modern pedagogical technologies to strengthen the integration of theory and practice in vocational education.

Keywords: vocational education, electrician training, theory-practice integration, professional competence, laboratory work, technical education.

Introduction

The development of modern industry and energy sectors increases the demand for highly skilled electrical specialists. The generation, transmission, and use of electric power require extensive technical knowledge and practical skills. Therefore, the training process for electricians in vocational education institutions must ensure a harmonious integration of theoretical instruction and practical activities.

Studies show that students' professional competence cannot be fully developed through theory alone. Applying knowledge in real technical processes is essential. Consequently, the integration of theory and practice is a fundamental pedagogical principle in vocational education.

Importance of theoretical knowledge

All processes in electrical engineering are based on the laws of physics. Concepts such as electric current, voltage, resistance, electric power, and electromagnetic induction are critical in the professional activities of electricians.



Theory and practice integration model

Theoretical knowledge plays a key role in understanding technical processes such as:

- Operation principles of electric motors
- Energy transfer in transformers
- Energy losses in electrical networks
- Efficiency of electrical devices

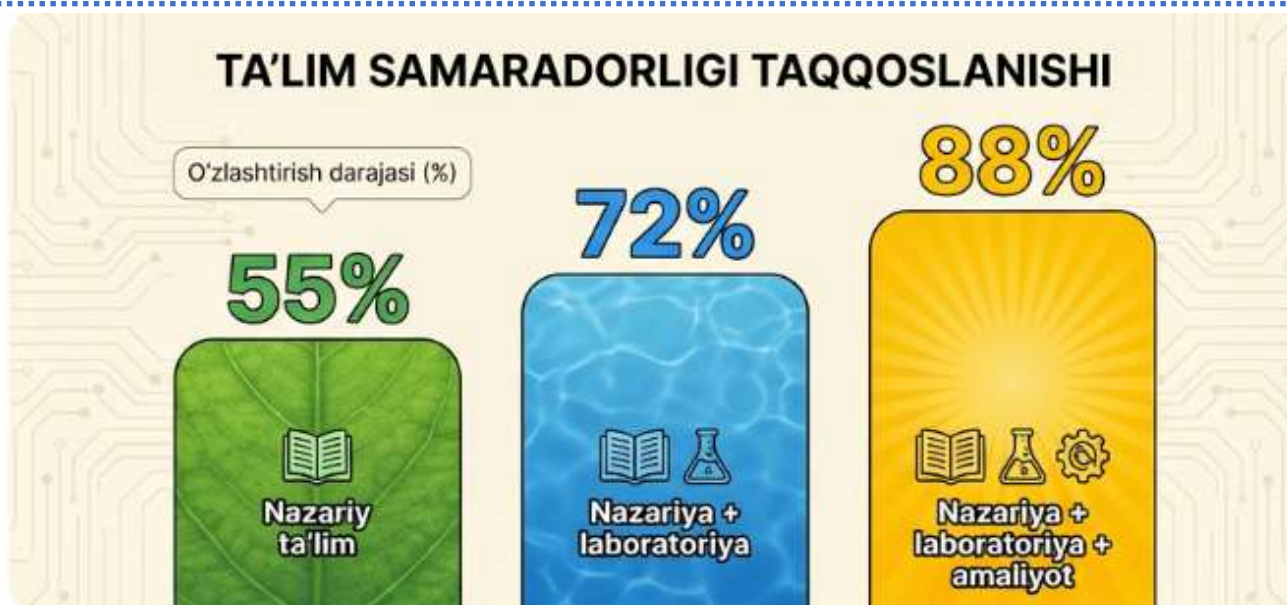
Strong theoretical knowledge allows students to perform practical activities more effectively.

Role of practical training

The professional activity of electricians largely depends on practical skills. Therefore, vocational education includes laboratory exercises, workshop training, and industrial practice.

During practical training, students:

- Assemble electric circuits
- Operate measuring instruments
- Connect and configure electrical equipment
- Apply electrical safety regulations

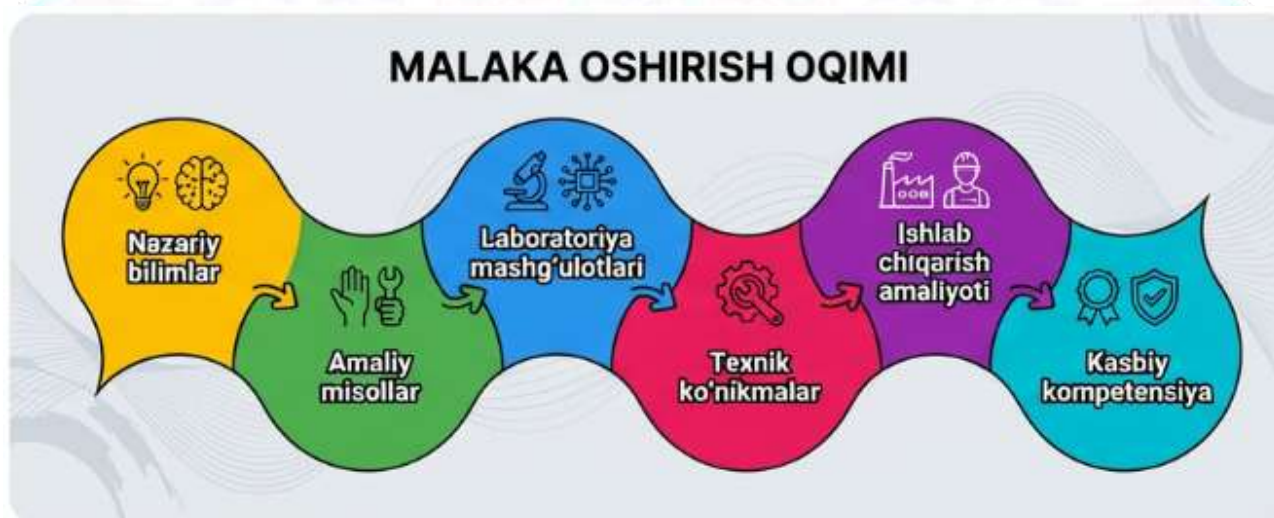


Statistical analysis of education effectiveness

Modern pedagogical technologies

Effective methods in electrician training include:

- Project-based learning
- Problem-based learning
- Virtual laboratories
- Simulation software



Integrated training flow

Conclusion

Integrating theory and practice is essential in training electricians. Combining theoretical knowledge with practical exercises enhances students' professional competencies and prepares them for modern industrial environments.

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