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APPLICATION OF THE THEORY OF INVENTIVE PROBLEM SOLVING (TRIZ) IN TEACHING THE SUBJECT "PEDAGOGICAL MASTERY"

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Abstract. This article explores the theoretical and practical aspects of using the Theory of Inventive Problem Solving (TRIZ) in the process of teaching the subject "Pedagogical Mastery." The TRIZ methodology plays a crucial role in developing teachers' creative and analytical thinking, as well as their ability to effectively solve pedagogical problems. The results of the study demonstrate that the application of TRIZ methods enhances the innovativeness of the educational process and contributes to the development of teachers' professional competence.

Key words: *TRIZ, pedagogical mastery, creativity, innovative education, contradiction, teacher competence.*

Introduction

In the modern education system, a teacher's pedagogical mastery encompasses not only professional knowledge and methodological skills but also creativity, analytical thinking, and the ability to effectively solve problems. Therefore, it is necessary to introduce innovative approaches into the educational process. One of such approaches is **TRIZ** (Theory of Inventive Problem Solving), which serves to develop the creative thinking of teachers and students.
The implementation of TRIZ in pedagogical education helps teachers analyze problem situations, use resources effectively, and optimize the teaching process. Thus, applying TRIZ approaches in the study of pedagogical mastery is a relevant and promising scientific-practical direction today.

Methods.

The study examined and implemented the following key principles of TRIZ in the educational process:

1. **Identifying and resolving contradictions** – recognizing contradictions in pedagogical situations and finding creative solutions.

2. **Ideal Final Result (IFR) principle** – developing a model of the "ideal lesson" or "ideal teacher" and determining ways to achieve it.
3. **Identification of resources** – using available resources (time, experience, environment, technology) efficiently.
4. **The 40 inventive principles of TRIZ** – applying them to generate new pedagogical ideas and teaching methods.
5. **Systematic analysis** – studying the teaching process as a system and introducing changes to increase its effectiveness.

The research applied observation, problem-based learning, training sessions, interviews, and reflection methods.

Results.

The application of TRIZ in teaching "Pedagogical Mastery" produced the following pedagogical and psychological outcomes:

- **Enhanced creative and critical thinking** among students. Through the principle of identifying and resolving contradictions, students learned to analyze pedagogical problems, detect contradictions, and find innovative solutions.
- **Improved analytical skills** in solving pedagogical problems. Based on the "systematic approach" and "resource identification" methods, students examined problems as systems and developed effective solutions by studying internal and external factors.
- **Development of teachers' ability to design innovative lessons.** Following the "Ideal Final Result" principle, each lesson concept was aligned with the model of an "ideal lesson," encouraging creativity, motivation, and effectiveness.
- **Increased motivation and interactivity** in the learning process. Using the TRIZ "fantogram" method—thinking through imagination and scenarios—students became more engaged, active, and confident in expressing their ideas.
- **Improved resource management skills.** Based on the TRIZ principle of maximizing existing resources, students learned to use time, space, materials, experience, and technology effectively.

Among the most effective TRIZ-based training activities were "Pedagogical Idea Generator," "Contradiction Table," and "Ideal Result Model." During these sessions, students approached pedagogical problems creatively and presented their ideas as practical action plans.

When the seminar "The Concept and Objectives of Pedagogical Mastery" was conducted using TRIZ principles, students mastered the following theoretical foundations:

Pedagogical mastery is the teacher's ability to effectively organize the educational process based on the unity of professional knowledge, skills, competencies, and personal qualities. Using TRIZ, each component of pedagogical mastery was connected with creative activity:

- **Pedagogical knowledge and expertise** – enriched through the TRIZ principle of "systematic analysis," enabling scientific lesson design.
- **Didactic mastery** – guided by the "Ideal Final Result" principle, helping teachers aim for maximum lesson efficiency.
- **Psychological sensitivity** – developed through the "contradiction identification" principle, enhancing understanding of students' needs and appropriate pedagogical solutions.
- **Communicative competence** – aligned with the idea of "effective use of resources," transforming every interaction into a valuable learning resource.
- **Ethical and moral position** – strengthened by the TRIZ principle of "balanced decision-making," ensuring socially and morally sound choices.
- **Readiness for innovation** – promoted through the "system of inventive principles," motivating teachers to create and test new ideas in practice.

The integration of TRIZ into pedagogical mastery not only enriched students' theoretical knowledge but also developed their professional and creative competence. As a result, teachers and future educators gained the ability to organize the learning process in an innovative, reflective, and effective manner.

Discussion.

TRIZ introduces a systematic and creative approach into the educational process. It enables teachers to analyze pedagogical situations not only logically but also creatively. Moreover, TRIZ:

- Shapes teachers as **innovators**;
- Develops students' **active thinking and independent decision-making skills**;
- Transforms lessons into **creative laboratories**.

Thus, the TRIZ approach directly contributes to the main goal of the "Pedagogical Mastery" subject — preparing teachers who are competent, creative, and adaptable professionals.

Conclusion.

Teaching the subject “Pedagogical Mastery” through the TRIZ methodology encourages both teachers and students to think creatively, solve problems effectively, and use available resources efficiently. This approach enhances teachers’ professional skills and significantly improves the effectiveness of the educational process. Therefore, integrating TRIZ into teacher education is a vital condition for preparing modern, innovative, and creatively thinking educators.

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