



IMPROVING THE METHODOLOGICAL PREPARATION OF FUTURE TEACHERS IN STEAM SUBJECTS

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Abstract

This thesis highlights the issues related to improving the methodological preparation of future teachers in STEAM (Science, Technology, Engineering, Art, Mathematics) disciplines. The necessity of incorporating modern educational technologies, implementing integrated approaches, and developing creative teaching competencies is substantiated.

Introduction

The modern education system requires the training of pedagogues who are creative thinkers, equipped with comprehensive knowledge and skills that meet labor market demands. Particularly, the methodological preparation of teachers in STEAM subjects is a key factor in developing students' innovative thinking.

1. The Essence and Advantages of STEAM Education

STEAM is an approach that integrates science, technology, engineering, art, and mathematics into a unified system, enabling students to develop critical thinking, problem-solving, and hands-on project-based learning.

2. Methodological Training of Future Teachers

The methodological training of future educators should focus on the following areas:

- Integrated Approach: Teaching not only theoretical knowledge but also guiding students to apply concepts in solving real-life problems.
- Methodological Competence: Developing skills to design lesson plans, apply interactive methods, and create STEAM-based projects.
- Use of ICT Tools: Enhancing teaching content through digital labs, simulators, and graphical software.
- Creativity and Design Thinking: Teachers must be creative themselves in order to encourage independent thinking among students.

3. Practical Recommendations

- Introduce specialized methodology courses on STEAM subjects in higher education institutions.
- Provide opportunities for pre-service teachers to develop and implement real STEAM projects during their teaching practice.





- Conduct methodological seminars, webinars, and trainings to strengthen pedagogical technology skills.

Conclusion

Teachers who instruct in STEAM disciplines must continuously improve their professional and methodological competencies in line with contemporary demands. Developing methodological approaches that foster innovative thinking, interactive teaching methods, and the use of modern technologies plays a crucial role in preparing effective future educators.

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