

# RECOMMENDING MEASURES TO ENSURE PEDAGOGICAL MECHANISMS FOR THE DEVELOPMENT OF PROFESSIONAL COMPETENCE OF FUTURE ENGINEERS

**Badalov Utkirbek Nomoz Ogli.**

*Jizzakh Polytechnic institute, assistant, independent researcher*

*Orcid: [0000-0003-4983-6805](https://orcid.org/0000-0003-4983-6805)*

**Abstract:** As the world witnesses unprecedented technological advancements and societal challenges, the demand for highly competent engineers continues to grow. The engineering profession plays a pivotal role in shaping our future, requiring professionals with a strong foundation of technical knowledge, critical thinking abilities, and problem-solving skills. To meet these evolving demands, it is essential to focus on providing effective pedagogical mechanisms to nurture the professional competence of future engineers. This article explores the significance of these mechanisms and how they contribute to producing well-rounded and proficient engineers.

**Keywords:** engineer, pedagogical mechanism, reflection, evaluation, cooperative education, mastered education, projects.

As the world witnesses unprecedented technological advancements and societal challenges, the demand for highly skilled engineers continues to grow. The engineering profession plays an important role in shaping our future, requiring professionals with technical knowledge, critical thinking skills and problem-solving skills. In order to meet these evolving demands, it is necessary to focus on providing effective pedagogical mechanisms for training the professional competence of future engineers. This article explores the importance of these mechanisms and how they contribute to producing well-rounded and skilled engineers [1]. The field of engineering is different from other fields. Engineers create new ideas, solve problems, and innovate. This requires engineers to have professional competencies. Pedagogical mechanisms should be improved to develop the professional competence of future engineers. It requires the development of professional competence of future engineers, the selection and implementation of changes in the world. Professional competencies such as faster problem solving, finding innovative

solutions, working with the community and retraining are of great importance for engineers to achieve great success. Therefore, we need to further improve educational systems in the field of engineering and use innovative pedagogical methods. In this model, students will have the opportunity to learn theoretical knowledge in practice. They develop professional skills through hands-on problem-solving, laboratory work, and practical training. Such a method helps to introduce the real life of engineering. 2. Integrative learning model is also important. In this way, different subjects are connected and give students additional skills. In engineering problem solving, it is important for students to make connections between multiple disciplines and find innovative solutions to common problems. 3. Reflection and evaluation play an important role in the development of professional competences. It is necessary to use reflection and evaluation to ensure a regular relationship between students, teachers and training specialists, to analyze the problems they have mastered and to consider ways of solving them. In this process, students develop themselves further and it also helps in mastering the learning process. 4. Research and innovation are also important in the development of professional competences. The use of the latest pedagogical technologies and methods allows learning and introducing new experiences. Educators and training professionals need to find innovative ways to develop themselves and learn how to apply innovations in engineering education. Cooperation with organizations and training centers is of great importance for the development of professional competences of engineers. Organizations play an important role in identifying and demanding new areas, desirable disciplines, and fields of professional training in engineering. Learning centers are important in developing innovative learning methods and providing additional learning resources to students [2].

Pedagogical mechanisms of professional competence development of engineers should be further improved. Methods such as active learning, integrative learning, cooperative learning, reflection and evaluation, research and innovation, collaboration with organizations and learning centers are important in developing professional competencies in engineering. These mechanisms help the students to

develop their professional skills in accordance with the basic fundamentals and to move along with the requirements in the field of engineering. You can develop future engineers in the process of professional training using pedagogical mechanisms. This helps to train them to acquire the necessary skills for faster professional development and to perform useful tasks for the public. Also, the voluntariness of each student is very important in the process of improving pedagogical mechanisms. There was a need for students to research and provide feedback on career-oriented tasks. All of the pedagogical mechanisms presented here are very useful for developing the professional competence of future engineers. Therefore, do them correctly and remember that you need to provide special education for each student.

As I say in conclusion, further improvement of educational systems in the field of engineering, development of professional competences and preparation of more successful students in the field of engineering is the key basis. To implement these, it is necessary to improve pedagogical mechanisms. This will lead to more qualitative and innovative development of the engineering field, renew the engineering processes on the world surface and open to progress without construction. To do this, every teacher and organization should be able to easily join the news about the development of professional competences and be close to the students. At the same time, the engineers of the future will participate in new ceremonial processes and strengthen global tasks. And also, the provision of effective pedagogical mechanisms is instrumental in nurturing the professional competence of future engineers. Active learning, interdisciplinary approaches, industry partnerships, technological innovations, ongoing assessment, and a culture of lifelong learning collectively contribute to producing proficient and adaptable engineers. As engineering continues to play a vital role in shaping our world, investing in these mechanisms ensures that our future engineers are well-prepared to tackle complex challenges, drive innovation, and contribute positively to society. By prioritizing professional competence development in engineering education, we pave the way for a brighter and more sustainable future.

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