



DEVELOPMENT OF ENGINEERING COMPETENCES OF WORKING EDUCATION MASTERS BASED ON MODERN APPROACHES

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Abstract: In this thesis, the engineering of production education masters the requirements for developing their competencies are briefly described. It defines the main goal of developing specialist competence by creating the necessary pedagogical conditions to ensure their professional and personal development, modernizing the content and structure of specialist training, determining psychological-pedagogical conditions, and developing a mechanism for monitoring and evaluating its quality.

Key words: competence, pedagogue, innovative thinking, knowledge, skill, competence, ability, integration, modernization, psychological-pedagogical, mechanism, communicative.

Enter. Industrial education masters play an important role in teaching basic skills to apply theoretical knowledge in production processes. They provide students with technological processes, equipment handling, maintenance and problem solving skills. Therefore, there is a need to develop the engineering competencies of production education masters.

Duties of the master of production education

The main tasks of the master of industrial education are as follows:

1. **Teaching theoretical knowledge** : Providing theoretical knowledge about technological processes, devices and materials.
2. **Development of practical skills** : Students participate in hands-on training in equipment operation, maintenance and repair.
3. **Control of technological processes** : Monitoring and control of production processes, explaining technical safety rules to students.
4. **Organization of projects and laboratory work** : Students participate in projects and laboratory work, teach them to solve technological problems.
5. **Assessment of competences** : assessment and analysis of students' knowledge and skills, monitoring their development.

The need to develop engineering competencies

Due to the fact that modern production processes are changing at a rapid pace, there is a need to develop the engineering competencies of production education masters. This is explained by the following reasons:

1. **Technological progress** : With the emergence of new technologies and equipment, there is a need to constantly update the skills and knowledge of masters.



2. **Production efficiency** : There is a great need for qualified specialists to increase the efficiency of production processes.

3. **Safety** : It is important to develop engineering skills to follow technical safety rules and prevent accidents.

Methods of development of engineering competencies

It is recommended to use the following methods to develop the engineering competencies of production education masters:

1. Interactive teaching tools

1.1. Simulators and virtual laboratories

- With the help of simulators, students have the opportunity to simulate technological processes and apply them in practice.
- Experiments can be carried out in a safe environment through virtual laboratories.

1.2. Online courses and webinars

- Organization of online courses and webinars on modern technologies and engineering sciences.

2. Expansion of practical training

2.1. Cooperation with production

- Organization of practical training and internships in cooperation with local production enterprises.
- Involve students in real production processes.

2.2. Projects and research work

- Teach students problem solving and innovative thinking through engineering projects and research.

3. Improvement of assessment and analysis methodology

3.1. Competency-based assessment

- Assess students' engineering competencies through clear and transparent assessment criteria and indicators.
- Assessment through practical tasks, projects and tests.

3.2. Analyze regularly

- Regularly analyze the effectiveness of training programs and update them if necessary.

4. Development of teachers

4.1. Training courses

- Organization of training courses for teachers.
- Updating knowledge on modern technologies and engineering sciences.

4.2. Professional development programs



- Development of special programs to familiarize teachers with innovative teaching methods and technologies.

Conclusion: Improving the methodology of development of engineering competencies of production education masters is an important part of the modern education process. Effectiveness of the educational process can be improved through interactive learning tools, hands-on activities, competency-based assessments, and teacher development. At the same time, this approach ensures that production enterprises are provided with qualified personnel and serves to increase the overall production efficiency.

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