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THE ROLE OF SUBJECTS IN TEACHING FUTURE ENGINEERS TO SOLVE PROBLEMS RELATED TO PRODUCTION PRACTICE

Movlonov Maruf Qalandarovich*

*Higher Mathematics Department,
Karshi Engineering-Economics Institute,
UZBEKISTAN
Email id: mavlonov.maruf@mail.ru

ABSTRACT

In this article, it is argued that at all stages of educational development, teaching should be linked to production practices. At present, the need for training in the field of science, mathematics, general and special disciplines in connection with the practice of production is defined in the qualification requirements for graduates of higher education institutions.

KEYWORDS: *Engineer, Professional, Methodology, Referral, System, Production, Practice, Training.*

INTRODUCTION

In recent years, great attention has been paid in the field of science and technology in our country. This attention requires qualified specialists in modern techniques and technologies. The training of such a specialist is the responsibility of higher education. Therefore, graduates of higher education must have serious training in natural sciences, mathematics, general and special sciences in order to master and manage modern techniques and technologies. Therefore, in this article we present the methods, forms and tools for the training of engineers in higher education in the natural sciences, mathematics, general and special disciplines.

Main part

The presence of the oretical knowledge of students studying in higher education institutions does not mean that they have knowledge focused on industrial practice. Only when students are able to apply the knowledge they have acquired in a variety of situations does it indicate that they have some knowledge, skill, and competence. This focused ability can only be formed in the

learning process, which provides a broad understanding of the relationships of all subject blocks in the curriculum. The possibility of these connections dependson:

- In the use of technology is wide lyused many methods mastered in the disciplines taught in higher education;

- At present, it is impossible to conductthe educational process without relying on the knowledge acquired in higher education;

- Modern techniques requireusers to have a deep theoretical knowledge, as well as an understanding of the theoreticallaws and principles of action that form the basis of the creation and operation of this technique.

One of themeans of applying the acquired knowledge to production practiceis to teach students to solve practical problems related to production practice. At present, the theoretical basis of them ethodology of using practical issues in the teaching of special subjects has become relevant.

We will consider the solution of practical problems as a basis for the implementation of practical training of the engineer, as well as the connection with the production practice. If we focus on the implementation of did actic functions, it is to prepare students for the acquisition of new knowledge, to streng then the subject, to developskills and abilities to use the subject, to describe the practical application of the subject. This, in turn, indicates the need to clarify the classification of issues according to their didactic functions. After a clear study of problem-based teaching methods, we identified two types of preparation tasks, with the help of which different methods of preparing students to learn a new topic were implemented. The first method is based on activating students 'knowledge (traditional in higher education methodology), the second involves the use of problem-based research methods and requires problem identification and formulation. In the learning process, great attention will be paid to the independence of students, and it will be necessary to differentiate tasks related to research and creative approach.

Thus, to summarize the views expressed, the clear classification of problem groups is as follows:

1. Preparatory issues - preparing students to study a new topic.

2. Reinforcement issues are issues that combine the materials studied, i.e. definitions, concepts, formulas, proof methods, and so on.

3. Trainings - issues aimed at the formation of skills and competencies. In solving these types of problems, students must use a specific algorithm, a common method, and a traditional solution.

4. Research-related issues are issues that contribute to the consolidation and in-depth study of a topic, requiring students to use non-standard solutions, a combination of several traditional methods, and the use of certain algorithms in non-standard situations.

5. Creative issues - issues that contribute to the formation and development of research skills. In these types of issues, the goal may be defined. Identifying them is done in the process of solving the problem. The set of conditions, methods and tools required to achieve this goal should be determined independently by the students.

6. Supervision tasks are issues needed to determine the level of mastery of the material studied by students. These types of issues are provided for control, independent work.

At present, in the process of training future engineers, it is observed that science and mathematics courses are separated from technical sciences. This separation is so profound that learners cannot see objects known to them in a real situation, so they cannot use the mastered natural-scientific and mathematical knowledge to describe the situation. Issues related to internships are rarely addressed in practical training, so graduates do not develop the skills to address such issues. Here are a few that hinder the active use of issues related to manufacturing practices:

- Insufficient space for them in textbooks and manuals;

- lack of time to address them in the learning process;

- Insufficient preparation of students for the school mathematics course;

- We can point out the reasons why the current stereotype of teaching mathematics does not always allow teachers to adapt to changing requirements and to include practical issues in the learning process.

CONCLUSION

Summarizing all of the above, we can draw the following conclusions:

1. The analysis of the main stages of the development of education has shown that the purpose of education is a category of social significance, because it depends on social conditions. The history of higher education testifies to the fact that at different stages of development, educational goals have changed and supplemented in accordance with the prevailing social goals and worldview.

2. Many researchers have raised the issue of the need to use the most advanced ideas at all stages of the development of education, including the practice of teaching mathematics. At present, the problem of linking mathematical training with production practice has reached a high level, which is defined in the State Education Standards in the qualification requirements for graduates of higher education institutions.

3. Based on the principle of directing education to production practice, the main ways to implement the transfer of mathematical training of an engineer to production practice have been identified.

4. It has been found that a combination of methods, forms, and tools at different stages of teaching mathematics contribute to the practical orientation of an engineer’s mathematical training.

5. One of the means of linking mathematical training with the practice of production in higher education is the use of interdisciplinary links of mathematics with general and special disciplines.

6. The use of practical issues related to all types of production practices in the context of mathematical training of an engineer helps to apply them systematically and purposefully in the learning process.

We consider it important to create a system of applied issues related to production practice and justify its use in various audiences and extracurricular activities.

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