

Problems of Teaching Mathematics in Modernization

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Abstract – This article is devoted to the problem of teaching mathematics in the context of modernization, where the problems and obstacles that hinder the quality and effectiveness of the teaching of mathematical sciences in secondary schools are currently sufficiently explained.

Keywords – Math, Modernization, Highly Qualified Specialists, Student, Expert.

Currently, the rapid development of economics, industry, and technology in the global community is increasing the need for next-generation professionals who can manage modern technology.

A specialist in modern times is a person who has mastered modern mathematical methods and can use them to operate with modern methods.

It is known that in each country, universities occupy an important place in the training of such specialists. Each institution of higher education develops and implements a social criterion for the development of competitive, highly qualified specialists. This is expressed in:

- ✓ Competitiveness of the labor market and services;
- ✓ Responsible approach to the work of each employee;

- ✓ Competence of their profession;
- ✓ Compliance with the requirements of international standards in the specialty;

Opportunities to independently operate on innovations in the chosen specialty; ability to work in related professions, etc.

It is well known that today in all higher education institutions the course "Higher Mathematics" is being studied, which serves as the basis for the teaching of general education, general engineering and special disciplines, the main purpose of which in the training of future specialists is: the formation and development of scientific views, mental abilities and logical thinking.

In fact, in recent years, many higher education institutions, especially higher education institutions

specializing in social and humanitarian fields, have had serious disagreements in teaching a course in higher mathematics. In many higher educational institutions, this course was removed from the curriculum.

Many questions arise: "Who is right? What is the main reason for this? Are all specialists in any field in the entire world community adequately given mathematical knowledge? Indeed, if all graduates should receive knowledge in mathematics, then what should they be?"

It is important to understand that every future specialist is required to acquire the mathematical knowledge that he needs in his professional career, regardless of what university he / she is studying. Because, as we mentioned above, it must be a modern specialist - a specialist with modern mathematical methods, who controls modern technologies.

So, the training of employees who keep up with the times is a paramount task, therefore the course of higher mathematics should be taught in all universities!

As you know, the question arises in traditional education: "What should be taught?". In today's "personality-based learning" approach, this question is difficult to answer. In fact, this is one of the main reasons for the low quality of education in our country today. The question "Why do we need to study this concept" in the course of higher mathematics, which is practiced in almost all higher education institutions.

In the context of the "Person-oriented Education" SES (state educational standards) based on the "individual needs of each person" should be developed in accordance with the curriculum. To do this, it is necessary to answer the question "What should be taught?" and "What is appropriate to teach?" That is, based on the specifics of each specialty, it is necessary to determine the content of the mathematics taught. A specialist who is trained in any field should:

*be an expert in every way;
in the future to be able to independently operate with
innovations in their profession;*

Be able to effectively manage modern technology.

Of course, in the context of modernization, the effective organization of the educational process in secondary schools is a key element in the training of specialists in higher educational institutions. However, in recent years, an increase in the content of mathematics in general secondary education and a gradual reduction in the time budgets of students has led to a sharp increase in the need for

mathematical knowledge of school graduates and the requirements for higher education. This, in turn, is associated with the knowledge needed to manage advanced science and technology, which widens the gap between existing knowledge. It is worth noting that the school course of mathematics is difficult for all classes, with the exception of classes specializing in "exact sciences", which ultimately leads to the fact that students lose interest in studying mathematical subjects. This picture can also be observed in the training of teachers in higher educational institutions. However, it should be recognized that these higher education institutions should be aimed at teacher training, however, their state educational standards are oriented towards science. This remains one of the main obstacles to the training of modern teaching staff.

In these conditions, it is important to increase the effectiveness of the educational process, in our opinion, based on the principles of "personality-oriented learning." This is due to the fact that differentiation in the organization of the learning process and the acquisition of knowledge based on the individual needs of each student increases the ability to anticipate learning objectives. In particular, the effective use of practical questions in the teaching of mathematical sciences increases the ability of students to acquire knowledge. They, in turn, encourage their desire to professionally acquire the knowledge that they need in the future.

Let's look at some problems that can be avoided.

It is well known that no matter how good school textbooks can be and each lesson can be developed at the level of modern curricula, and no matter how students know the subject, the effectiveness of the lesson is that the teacher is sufficiently trained. If the teacher is not well trained, then the educational goals are not effective. Therefore, first of all, we need to bring theoretical, practical and professional training focusing on modern requirements in order to achieve the quality and effectiveness of our education, its main driving force. First of all, it is necessary to revise the process of preparing future mathematics teachers. In the same time:

It is necessary to orient the curricula in the field of pedagogical personnel in higher education institutions specializing in the training of pedagogical personnel, that is, to direct the curriculum to true education;

Note. Of course, there is a need for scientific and pedagogical personnel who will continue to develop

pedagogical and methodological education. For this, it is desirable to classify higher education.

Achievement of theoretical preparation for the future curriculum of higher education institutions (4 years of undergraduate studies), specializing in theoretical preparation for the 3rd year and completing full-time teaching practice in the 4th year (providing mathematics teachers with modern professional education in our schools). Achieving these goals will increase the ability of people to follow the principles of "personality-oriented education" for training modern teaching staff who are perceived as a separate object, with their professional interests and abilities. This, in turn, will increase the quality and effectiveness of education and, ultimately, will provide an opportunity to provide services and personnel that will be worthy of the labor market.

1. Today, the mathematics of general secondary education needs to be reviewed on the basis of the principle of "personality-oriented learning." Because, as in the 20th century, the future "mathematician" and future "historian" are forced to learn the same mathematics. This, firstly, jeopardizes educational trends, and secondly, reduces the quality of education. Therefore, a revision of the content of mathematical education based on the principle of differentiation is a key factor in improving the efficiency and quality of education.

2. As before, the textbook for the student should be the main educational tool. In recent years, significant changes in this regard have not occurred. As a result, the organization of the educational process based on modern requirements lags behind the time-consuming need for textbooks in modern conditions. In particular, the creation of textbooks does not mean that the content of "student-centered learning" is not satisfactory. In addition, didactic principles in the preparation of textbooks do not necessarily correspond to standards such as "easy to complex", "interdisciplinary communication", "the relationship between theory and practice", "science" and "continuity". This prevents students from expanding their knowledge on their own.

3. Today, providing educational institutions with modern teaching aids plays an important role in improving the quality and effectiveness of education. At the same time, it is required that every teacher of natural sciences, including teachers of mathematics, possess the skills of the correct and effective use of modern teaching aids.

Timely resolution of these issues - improving the quality and effectiveness of education in the system of general secondary education.

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