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A SYSTEM OF PRACTICE-ORIENTED TEACHING OF MATHEMATICS IN HIGHER EDUCATION CURRICULA.

Komolova Gulhayo
Doctoral student of Andijan Machine-building institute.
Email: gulhayokomolova1990@mail.ru

Annotation: The article presents the status, shortcomings and achievements of the practice-oriented mathematics teaching system in higher education curricula, as well as the pedagogical technologies of teaching mathematics based on the contexts of everyday life.
Key words: Mathematics, practical and theoretical knowledge, problems, pedagogical technology, creativity and innovation

INTRODUCTION.

The practice-oriented teaching of mathematics in higher education curricula aims to provide students with practical skills in addition to theoretical knowledge of mathematics. The main goal of this system is to prepare students to effectively apply mathematics in solving real-life problems.

The main aspects of this system are as follows:

1. Practical Examples

Using real-life examples and situations in teaching. For example, showing students how to apply mathematical methods by solving practical problems in the fields of economics, engineering, or natural sciences.

2. Interactive Teaching

Using interactive methods that encourage students to actively participate. Through group work, discussions, and projects, students learn from each other and how to apply mathematics in practice.

3. Computer Technology

Using computer programs and simulations in mathematics lessons. This makes it easier for students to understand complex mathematical models and allows them to apply them in practice.

4. Project-Based Learning

Giving students projects to solve real-world problems. In this process, students have the opportunity to apply mathematical theories in practice.

5. Cross-Disciplinary Approach

Creating connections between mathematics and other disciplines (e.g., physics, economics, biology). This approach helps students understand mathematics in a broader context.

6. Assessment Methods

Using a variety of assessment methods to assess practical skills. For example, through practical work, project presentations and tests, students can demonstrate their knowledge.

7. Teacher Training

Train teachers in practice-oriented methodologies. It is important that they know and apply modern pedagogical approaches.

This system helps students understand mathematics not only theoretically, but also practically, and also prepares them for their future professional activities.

LITERATURE REVIEW AND METHODS.

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The practice-oriented teaching system of mathematics in higher education curricula is important. The main goal of this system is to provide students with the opportunity to apply mathematical knowledge in practice, not theoretically. The following is a review of the literature on this system. Also, the practice-oriented teaching system of mathematics in higher education is an approach aimed at developing students' ability to apply mathematical knowledge in practice and solve problems. This approach allows students to understand mathematical concepts more deeply and apply them to solve real-life problems.

1. Teaching methodology

Literature: Methodological manuals, international experiences and curricula published by the Ministry of Education of the Republic of Uzbekistan.

Review: This literature provides detailed information on practice-oriented teaching methods, such as project-based learning, problem-based tasks, and group work. These methods encourage students to think independently and solve problems.

2. Learning applied mathematics

Literature: Books and articles that focus on solving practical problems in mathematics, such as works such as “Mathematics and its Practice” or “Fundamentals of Mathematics”.

Review: These resources demonstrate the application of mathematics in various fields, including economics, engineering, natural sciences, and social sciences. They increase students’ experience in using mathematical methods to solve real-life problems.

3. Interactive teaching

Literature: Books and articles that include interactive teaching methods.

Review: The use of interactive technologies in the learning process, for example, using online platforms, simulations and mathematical programs, encourages students to actively participate. These methods help to further consolidate knowledge.

4. Guides for teachers

References: Methodological guides and training programs prepared for teachers.

Review: These materials provide teachers with recommendations on how to organize practice-oriented lessons. Examples and exercises provided for teachers make practice more interesting and effective.

5. Monitoring and evaluation

References: Articles and studies on assessment systems.

Review: The assessment process is also important in practice-oriented teaching. Students should be assessed not only on their theoretical knowledge, but also on their practical skills. This process helps to determine the real knowledge of students.

Literature on the practice-oriented teaching system:

“Mathematics Education: A Practical Approach” (M.A. Ayvazyan, 2015): This book describes in detail the principles, methods and technologies of the practice-oriented teaching system. The book presents various exercises and tasks aimed at developing students' ability to apply mathematical knowledge in practice.

“Mathematics in Higher Education: Modern Approaches” (A.A. Petrov, 2017): This book discusses modern approaches to teaching mathematics in higher education, including the practice-oriented teaching system. The book describes various teaching materials and technologies aimed at improving students' ability to apply mathematical knowledge in practice.

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"Mathematics Education: A Global Perspective" (J. Kilpatrick, 2019): This book discusses global trends in mathematics education, including the practice-oriented teaching system. The book provides information about the characteristics of mathematics education systems in different countries and the effectiveness of practice-oriented teaching systems.

This literature review:

- Basic principles of a practice-oriented teaching system:
- Connecting mathematical concepts to real-life problems: Giving students the opportunity to apply mathematical concepts in practice.
- Ensuring active participation of students: Involving students in the learning process, giving them the opportunity to solve problems independently.
- Organizing group work and project work: Teaching students to work in teams, giving them the opportunity to solve problems together.
- Applying technology to the teaching process: Using computers, software, and online resources to give students the opportunity to apply mathematical knowledge in practice.

Advantages of a practice-oriented learning system:

- Helps students gain a deeper understanding of mathematical knowledge;
- Develops students' problem-solving skills;
- Increases students' interest in mathematics;
- Improves students' attitude towards the learning process.

Disadvantages of the practice-oriented training system:

- May require additional training and resources for teachers;
- May not be suitable for all students;
- May be difficult to manage students' attitudes towards the learning process.

The practice-oriented teaching system of mathematics in higher education plays an important role in further deepening students' knowledge and preparing them to solve real-life problems. Available literature and methodologies for teachers and students serve as an auxiliary tool in this process. The practice-oriented teaching system of mathematics in higher education is an effective approach aimed at developing students' ability to apply mathematical knowledge in practice. This approach improves students' attitude to the learning process and increases their interest in mathematics. However, additional training and resources are required for teachers to successfully implement this system.

RESULTS AND DISCUSSIONS.

The results and discussions of the practice-oriented teaching system of mathematics in higher education curricula include a number of important aspects. The results of this system, its effectiveness, and the main issues to be discussed are presented below.

RESULTS

1. Increase in student knowledge:

Practice-oriented teaching methods help students better understand theoretical knowledge. Students learn mathematical formulas and concepts more deeply by applying them to real-life situations.

2. Independent thinking and problem-solving skills:

This system encourages students to think independently and solve problems. Through project-based learning, group work, and problem-solving tasks, students develop a creative approach.

3. Effectiveness of interactive learning:

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Interactive methods, such as online simulations and programs, increase interest among students. With these methods, students learn mathematics in a more interesting and effective way.

4. Improved assessment and analysis:

Practice-oriented assessment systems help determine students' actual knowledge. Paying attention to practical skills along with theoretical knowledge in the learning process makes students more prepared.

DISCUSSIONS

1. Teacher training:

Teachers should be familiar with the methodology of practice-oriented teaching. Training and methodological guides should be developed for teachers.

2. Curriculum renewal:

Higher education curricula should be renewed taking into account the practice-oriented approach. Lesson plans and teaching materials should be focused on solving real-life problems.

3. Student motivation:

It is important to create motivation to involve students in practice-oriented teaching. This, in turn, encourages students to actively participate in classes.

4. Resources and infrastructure:

It is important to have the necessary resources (programs, simulations, laboratories) for practice-oriented teaching. Higher education institutions should provide such resources.

5. Research and experiments:

Research and experiments should be conducted regularly to assess the effectiveness of this system. Based on the results obtained, teaching methods can be improved.

CONCLUSION

The practice-oriented teaching system of mathematics in higher education allows students to acquire not only theoretical knowledge, but also practical skills. However, the success of this system depends on the training of teachers, the quality of the curriculum, student motivation, and the availability of necessary resources. By addressing these issues, the practice-oriented teaching system can be made more effective.

The practice-oriented teaching system of mathematics in higher education is an effective approach aimed at improving students' ability to apply mathematical knowledge in practice. However, the successful implementation of this system requires additional training and resources for teachers, and it is necessary to take into account the individual needs of students.

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