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THE ROLE OF HIGHER MATHEMATICS IN TECHNICAL UNIVERSITIES AND PROSPECTS FOR ITS DEVELOPMENT

Abstract: This article discusses the goals and tasks, modern methods, problems and shortcomings of teaching higher mathematics to students of higher educational institutions. Also, the article reflects on the various goals of higher mathematics education and shows ways to develop higher mathematics in the student's personality. It depends on the development of students' outlook, ability to think logically, formation of creative activity, mental development, self-awareness, growth of intellectual potential.

Key words:oily mathematics, knowledge, space, form, logical, differential, integral, trigonometry, methodology, thinking, memory.

Decree of the President of the Republic of Uzbekistan dated July 9, 2019 "On State Support for the Further Development of Mathematics" - Decision No. 4387 of the President of the Republic of Uzbekistan Decision PQ-4708 dated May 7, 2020 "On measures to improve the quality of education in the field of mathematics and development of scientific research", PQ-4851 dated October 6, 2020 of the President of the Republic of Uzbekistan "Information technologies "Decision on measures to further improve the education system in the field, develop scientific researches and integrate them with the IT industry". Mathematics-the science of numbers and shapes, scientifically speaking, mathematics-the science of numerical relationships and spatial shapes. Mathematics as a science never stands still. Life, experience, developing technology and other sciences are putting more and more new tasks before him. Old knowledge is lacking to solve them. Mathematics (Greek: thematike, mathema-knowledge, science) is the science of knowledge based on clear logical observations. Since its original object was counting, it was often considered "the science of calculation" (in today's mathematics, calculations, even operations on formulas, occupy a very small place). Mathematics is one of the oldest sciences, has a long history of development, and correspondingly, "what is mathematics?" the answer to the question has also changed and deepened. In Greece, mathematics meant geometry. Algebra and trigonometry expanded the concept of mathematics in the 9th-13th centuries. After analytical geometry, differential and integral calculus took the main place in mathematics in the 17th and 18th centuries, until the beginning of the 20th century, it was defined as "the science of quantitative relations and spatial forms". At the end of the 19th century and the beginning of the 20th century, various geometries (such as Lobachevsky geometry, projective geometry, Riemannian geometry), algebras (such as Boolean algebra, quaternion algebra, Keli algebra), infinite-dimensional spaces, which are very diverse in content, are often The above definition of mathematics has become too narrow as soon as the natural objects are studied. Later, he introduced the definition of "Mathematics-higher mathematics is the science of structures". Although this approach is broader and more precise than the previous definitions, it was still limited - the relations between structures (for example, family mathematics, theory of series, algebraic topology).[1]

Higher mathematics is a course taught in secondary and higher education institutions and includes mathematical areas such as algebra and mathematical analysis. Higher mathematics is not a separate field of science, but a subject of the field of education. Higher mathematics is a course consisting of mathematics departments taught in technical, economic, agricultural and other special

[1] O'zbekiston Respublikasi Prezidentining 2019 yil 9 iyuldagi "Matematika ta'limi va fanlarini yanada rivojlantirishni davlat tomonidan qo'llab-quvvatlash, shuningdek, O'zbekiston Respublikasi Fanlar Akademiyasining V.I.Romanovskiy nomidagi Matematika instituti faoliyatini tubdan takomillashtirish chora-tadbirlari to'g'risida"gi PQ-4387-sonli qarori.

educational institutions. The higher mathematics course mainly includes analytic geometry, some parts of higher algebra, differential calculus, integral calculus, and differential equations. In the 70s of the 20th century, mathematical statistics, probability theory, linear programming and other fields were added to Higher Mathematics. Sometimes, the part of mathematics that is not included in the high school curriculum is understood as Higher Mathematics. This is incorrect because the high school mathematics curriculum includes many areas of mathematics, including analytic geometry, mathematical analysis, and certain parts of probability theory (see Elementary Mathematics).

The following can be taught in the higher mathematics course:

Higher algebra

Analytical geometry

Mathematical analysis

Analytical geometry

Linear algebra

Derivative Integral

Differential equation

Theory of sets

Probability theory

Mathematical statistics.

The road to modern science and technology, just to modern life, goes through mathematics. This element of scientific knowledge is an important part of mathematics education. Elementary mathematics is also a science with an independent content, which is built on the basis of elementary data obtained from various branches of higher mathematics, namely, theoretical arithmetic, number theory, higher algebra, mathematical analysis, and the logical course of geometry. The science of mathematics deals with finding mathematical laws that fully and deeply reflect the spatial forms of the real world and the quantitative relationships between them. Elementary mathematics forms the basis of the school mathematics course. The purpose of the school mathematics course is to deliver the system of mathematical knowledge to students in a certain way (methodology), taking into account their psychological characteristics. (The word methodology is a Greek word meaning "way"). Mathematical methodology is one of the main branches of pedagogy and didactics, and it is an independent science that studies the laws of teaching and learning mathematics that are compatible with educational goals at the level of development of our society. Mathematical methodology answers the following three questions related to the educational process.

Higher mathematics The purpose of teaching science:

• development of students' intelligence, logical and algorithmic thinking forming;

• to provide students with solid fundamental knowledge, modern application of the acquired knowledge teaching to apply to problem solving;

• the results obtained by conducting experiments, various natural processes, events and making mathematical models of devices, basic analysis, technical and economic in search of optimal solutions to problems, it is best to implement them teaching students the basic mathematical methods necessary for choosing their path;

• specialization and general professional in the curricula of students in Higher Mathematics from the development of the ability to apply mathematical methods in science issues consists of Economic and technical indicators, monitoring of them formation of results in one system, interaction of factors affecting them use modern mathematical methods and models to determine the relationship its place is incomparable. [2]

Therefore, in terms of modern personnel training practical in organizing the educational process in higher educational institutions of our country Special attention is paid to the important subject of Higher Mathematics. According to V.K.Tsybikova, the development of family mathematics is the most important science that accompanies the creation of new technologies, the improvement of the quality of high-level education, and accompanies it at all stages of the development of the intellectual activity of students. All modern sciences - physics and chemistry, biology and economics, linguistics and sociology not only use mathematical methods, but are built according to mathematical laws. The road to modern science and technology, just to modern life, goes through mathematics. This element of scientific knowledge is an important part of mathematics education Arousing interest in higher mathematics depends on the high level of the teaching method and how skillfully the educational work is constructed. In the lesson, it is necessary to pay attention to the deepening of interest in learning, using as a starting point the emergence and development of each student's activeness, working with pleasure, and the desire for knowledge. This is especially important for teenagers, it is necessary to determine their permanent interest and interest in this or that subject. At this time, the aspects that attract to mathematics should be applied quickly. In the process of higher mathematics education, mathematical proverbs also serve as a factor in educating students in the spirit of humanitarianism and hard work. Higher mathematics helps students develop thinking, attention, memory, creative imagination, observation. Also, the science of higher mathematics prepares the ground for improving students' logical thinking skills, for their clear, correct and understandable presentation of their thoughts. The task of the teacher is to be able to effectively use these opportunities in teaching mathematics to students. According to I.G. Tokhtabayeva, mathematical thinking and formation of mathematical culture. Every mathematical conclusion studied in mathematics classes requires rigor, which in turn is represented by many mathematical concepts and laws. During the gradual study of these laws, their logical thinking develops, the culture of making mathematical conclusions is formed.

Interrelationship with other studies in the Fanning curriculum, methodological coherence a sequence Fundamentals of Higher Mathematics (Mathematics is considered the main specialty subject and is taught in the 5-7 semesters. The teaching of mathematics is higher mathematics because it is related to the teaching of the fundamentals of mathematics It makes sense to start after the basic concepts have been learned. High the successful teaching of the fundamentals of mathematics in a high school mathematics course is inextricably linked with what is acquired. The connection between subjects is correct it is important to take this into account in the structure of the curriculum in order to increase it. The role of science in education Basics of higher mathematics Mathematics is one of the specific subjects to students the importance of mathematics in the formation of the worldview and the environment reveals its place in the study of existence. Fundamentals of higher mathematics for students teaches the theoretical foundations of the course, in which they master the course of higher mathematics forms necessary skills and competencies for Modern information and computer-pedagogical technologies used in science teaching. classes should be equipped with various educational visual aids and technical materials. Textbooks, teaching and methodical manuals, lecture materials, handouts, and Internet sites are used in the teaching of science.

[2] Цыбикова В.К. "Преподавание математики в различных профильных направлениях" Вестник бурятского государственного университета 2010/15. 118-122.

In conclusion, the development of memory, thinking, creative imagination, and observation during the teaching of higher mathematics in higher education institutions helps students to learn science. Also, the science of higher mathematics creates a basis for improving the logical thinking skills of students, for their clear, correct and comprehensible expression of their thoughts. The task of the student is to be able to effectively use these opportunities in teaching higher mathematics to students.

References:

1. O'zbekiston Respublikasi Prezidentining 2019 yil 9 iyuldagi "Matematika ta'limi va fanlarini yanada rivojlantirishni davlat tomonidan qo'llab-quvvatlash, shuningdek, O'zbekiston Respublikasi Fanlar Akademiyasining V.I.Romanovskiy nomidagi Matematika instituti faoliyatini tubdan takomillashtirish chora-tadbirlari to'g'risida"gi PQ-4387-sonli qarori.

2. O'zbekistonRespublikasiPrezidentining 2020 yil 7 maydagi "Matematikasohasidagita'limsifatiniosMrishvailmiy-tadqiqotlamirivojlantirishchora-tadbirlarito'g'risida"gi PQ4708-sonli qarori.

3. O'zbekiston Respublikasi Prezidentining 2020 yil 6 oktyabrdagi PQ-4851-son "Axborot texnologiyalari sohasida ta'lim tizimini yanada takomillashtirish, ilmiy tadqiqotlarni rivojlantirish va ularni IT-industriya bilan integratsiya qilish chora-tadbirlari to'g'risida"gi qarori.

4. Цыбикова В.К. "Преподавание математики в различных профильных направлениях" Вестник бурятского государственного университета 2010/15. 118-122.

5. To'xtaboyeva I. G'. "Matematika o'qitish metodikasi" Pedagogs international research journal. b-135-139.ISSN 2181-0842 / Impact Factor 3.848 436A