

PROBLEMS OF TEACHING THE DIFFERENTIAL EQUATIONS MODULE IN HIGHER EDUCATION INSTITUTIONS

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Abstract: *this article provides analytical information on the current state of teaching mathematics, ways to expand the use of innovative technologies and information technology tools in improving the teaching methods of sciences, theoretical and methodological, methodological bases of systematization of teaching and problems in improving forms, methods and tools of teaching. Also, a number of problems in the teaching of differential equations in higher education institutions, suggestions and recommendations on how to overcome them.*

Keywords: *mathematics, differential equations, innovative technology, case-study, information technology, tool.*

ПРОБЛЕМЫ ПРЕПОДАВАНИЯ МОДУЛЯ ДИФФЕРЕНЦИАЛЬНЫХ УРАВНЕНИЙ В ВУЗАХ

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Аннотация: *в статье представлена аналитическая информация о современном состоянии обучения математике, способах расширения использования инновационных технологий и инструментов информационных технологий в совершенствовании методики преподавания наук, теоретико-методологические, методологические основы систематизации обучения и проблемы совершенствования форм, методов и инструментов обучения. Также ряд проблем при преподавании дифференциальных уравнений в высших учебных заведениях, предложения и рекомендации по их преодолению.*

Ключевые слова: *математика, дифференциальные уравнения, инновационная технология, пример из практики, информационные технологии, инструмент.*

Particular attention is paid to improving the methods of teaching mathematics in higher education, increasing the effectiveness of teaching science on the basis of innovative technologies, developing didactic materials on science and using them to increase the effectiveness of teaching, increase students' creative thinking [1].

Improving the methodology (tools, methods, technologies and forms) of teaching the differential equations module in higher education institutions, improving the teaching of science using modern teaching aids and technologies, developing didactic materials and increasing the effectiveness of teaching, developing students' creativity became a demand. Therefore, the use of modern technologies and information technology tools in improving the methodology of teaching the differential equations module in higher education is one of the urgent problems.

In this regard, including the application of modern educational technologies in improving the methods of teaching mathematics, in our country A.A. Akmalov, I.T. Aliyev, S. Alikhonov, G.R. Alimatova, Z.A. Artikbaeva, A. Azamatov, M.Barakaev, K.S.Jumaniyozov, I.U.Ibragimov, F.M.Kasimov, I.Sh.Laktaeva, N.M.Mukhitdinova, M.Tojiev, E.Sharipov, Sh.M.Yunusova, D.Yunusova, T.U.Utapov and G.N.Goyibnazarova. Also, research on the introduction of information technology in the teaching of mathematics belongs to the research work of such scientists as D.N. Ashurova, M.S. Divanova, D. Mahmudova, U.M. Mirsanov, M.I. Toshpulatova, M.N. Tsoy, and Zh. B. Ergashev.

The investigations of these above mentioned scientists are focused on the effectiveness of teaching subjects belonging to the category of mathematics in general secondary schools, academic lyceums and vocational colleges. Although it also focuses on the effectiveness of teaching subjects belonging to the category of mathematics from higher education institutions, there is insufficient research on teaching of the section of differential equations in higher education institutions.

At the same time, D.Mahmudova's research is focused on the use of problematic issues in the development of independent creative activity in students in the differential equations module in higher education, but her research pays not sufficient attention to the organization of lectures, practical and laboratory classes in teaching differential equations [2]. Therefore, it is important to solve a number of problems related to the teaching of differential equations in higher education.

According to the research work of the above-mentioned scientists and the analysis of the current state of education in higher education institutions, the following series of problems were identified in teaching of differential equations module:

- Insufficient skills of professors and teachers in the use of modern information technology in the organization of lectures [1];
- Insufficient use of modern educational technologies, including CASE-STUDY technology in the organization of practical training;
- Methods and problems of developing students' ability to work independently and creatively through problem-solving mathematical problems insufficient use of educational technologies [2].

In short, if the above-mentioned problems in teaching differential equations module in higher education institutions are overcome, it is possible to increase students' interest in science and develop their competencies.

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