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PECULIARITIES OF IMPLEMENTATION OF MODERN EDUCATIONAL TECHNOLOGIES IN THE PROCESS OF TEACHING MATHEMATICAL DISCIPLINES IN HIGHER TECHNICAL EDUCATIONAL INSTITUTIONS

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Annotation: Based on the study of the peculiarities of the implementation of modern technologies for teaching mathematical disciplines in higher technical educational institutions, their effectiveness is proved on humanistic principles in order to ensure the formation of a highly qualified specialist in the technical field.

Key words: higher technical educational institutions, educational technologies, mathematical disciplines, prospective specialists of technical field, humanisation of educational process.

The modern development of higher education in Ukraine is determined in the general context of world civilization process according to the conditions of European integration. The main objectives of integration process are to create conditions for the comprehensive development of highly educated creative personality capable of professional self-development and self-improvement throughout life.

The problem of improving the quality of student's professional training in higher technical educational institutions is actualized due to the need to provide national industrial field with highly qualified competitive engineers who are able to adapt to rapidly changing market conditions and to creatively express active independence in solving industrial problems.

The society currently needs specialists with clear logical thinking, fundamental mathematical knowledge and skills to recognize and implement the possibilities of applying mathematical knowledge in various spheres of professional activity.

Mathematical education is the basis for professional training of specialists in higher technical educational institutions, because in addition to subject knowledge, it ensures the formation of scientific worldview, development of logical and abstract thinking, the skill to create mathematical models in future professional activity.

Training of qualified specialists capable to perform competent and effective activity in the technical field at the level of European and world standards is possible with the introduction of modern educational technologies. The aim of this article is to study the peculiarities of realization of modern educational technologies of teaching mathematical disciplines in higher technical educational institutions in the way that ensures the effectiveness of training.

According to G. P. Vasyanovych, effective training of a specialist in a higher technical educational institution should be based on the latest technologies, and the defining trend in this complex process is the integration of general and professional education, where a special place is given to ethical knowledge, feelings and will of the teacher. The leading forces that form the integral personality of the student are humanistic, spiritual and moral values, principles and culture of the teacher of higher educational institution [1].

Analyzing the essence and hierarchy of the concepts “educational technology”, “pedagogical technology” and “teaching technology”, we note that in the scientific and pedagogical literature this concept is considered as: a rational way to achieve a consciously formulated educational (training and upbringing) goal; science; pedagogical system; pedagogical activity; system of knowledge; the art of teaching; model; a means of optimizing and modernizing the educational space; integrative approach in education, etc.

Modern researchers pay considerable attention to finding ways to improve the mathematical training of students of higher technical educational institutions. Thus, E. I. Skafa, along with traditional teaching methods, also focuses on those that are characteristic of heuristic teaching, based on the method of technical design [2, p. 109]. She states that the widespread introduction of new intensive pedagogical technologies will change the paradigm of education; information technologies will

allow the most effective implementation of the opportunities of modern teaching technologies.

The effectiveness of the problem approach in the process of teaching higher mathematics for engineering students is emphasized by O. G. Rovenska. She argues that cognitive interest in the study of mathematics is developed through solving challenging cases that contribute to the formation of student's personal interest for mastering the future profession in engineering [3].

The problem of organizing the work of students in practical classes in higher mathematics is being actively studied by modern researchers. In particular, O. G. Fomkina suggests giving preference to the following innovative forms and methods of organizing educational activities in the process of conducting higher mathematics practical classes: module rating system of training and testing of knowledge, business games, formative and summative tests, reference notes and others [4].

Effective teaching of mathematical disciplines in higher educational institutions, as we conclude, requires consideration of the following peculiarities: mathematical science is built on strict laws of logic, and therefore it requires clear logical thinking in the process of higher mathematics subject acquisition; a deep understanding of the material of mathematical disciplines is provided by their practical direction through which students comprehend theoretical knowledge and gain professional orientation.

Analysis of the problem of teaching mathematical disciplines in higher technical educational institutions shows the opportunities available for the introduction of modern pedagogical technologies, systematic and consistent implementation of which contributes to strengthening positive changes in modern mathematical education. Simultaneously, the process of modernization should include a preparatory stage, namely: modeling, expert evaluation and experimental review in order to ensure effective mathematical training of students in higher technical educational institutions.

We outline the following peculiarities of realization of modern technologies of teaching mathematical disciplines in higher technical educational institutions: orientation on comprehensive development and self-development of student's personality; consideration of subjective experience of the student; focus on dialogical forms and methods of teaching; ensuring student's personal active engagement in the learning process; ensuring tolerance, empathy, support, trust between teacher and student. This, in turn, is provided by joint, coordinated activity in setting goals, choosing forms and methods of teaching; the use of dialogic forms of teaching; referencing to the positive subjective experience in student's learning process; teacher's control of educational activity of prospective specialists in the technical field on the basis of objective assessment, in-time confirmation of student's progress and success; reflection on educational achievements in the process of implementing modern teaching technologies in higher technical educational institutions.

As a conclusion, an important strategic task at the present stage of modernization of the state system of higher technical education is to ensure the training of prospective professionals at the level of international standards. The solution of this problem is possible with the implementation of modern educational technologies in the process of teaching mathematical disciplines in higher technical educational institutions. Their realization in teaching mathematical disciplines helps to diversify the range of educational material, to increase student's interest in learning mathematical disciplines, intensifies the learning process. It also allows taking into consideration student's personal needs, requests, subjective experience, and positively affects learning outcomes. It ensures promoting the development of personal qualities and characteristics of prospective specialists in the technical field, their socialization and self-realization in the professional field.

References

1. Vasyanovych, G.P. (2005). *Pedagogichna etyka [Pedagogical ethics]*. Lviv: Norma. 343 p. [in Ukrainian].
2. Skafa, E.I. (2004). *Teoretiko-metodicheskiye osnovy formirovaniya evristicheskoy deyatel'nosti pri izuchenii matematiki v usloviyah vnedreniya*

sovremennyh tekhnologiy obucheniya [Theoretical and methodical bases of formation of heuristic activity at studying of mathematics in the conditions of introduction of modern technologies of training]. Extended abstract of doctor's thesis. Donetsk. [in Russian].

3. Rovenska, O.G. (2011). Problemnyi pidhid u vykladanni vyschoyi matematyky dlya inzhenernykh spetsialnostey [Problem approach in teaching higher mathematics for students of engineering specialties]. Donetsk: DonTU. pp. 49-52. [in Ukrainian].

4. Fomkina, O. G. (2000). Metodychna systema provedennia praktychnykh zanyat z matematyky zi studentamy ekonomichnykh spetsialnostey [Methodical system of conducting practical classes with the students of economic specialties]. Candidates' thesis in pedagogical sciences. Kyiv. 20 p. [in Ukrainian].