



PREPARING STUDENTS OF TECHNICAL HIGHER EDUCATION INSTITUTIONS FOR SCIENTIFIC-RESEARCH AND INNOVATION ACTIVITY

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Abstract:

In this article, the development of research and innovation activities in higher education institutions, the use of innovative ideas and technologies, the increase of educational and cognitive activity of students, the development of activities in the field of scientific research and invention, the introduction of an innovative component in the training of a modern engineer is the most complex way of creating new techniques and innovative technologies. Issues such as teaching the elements and their effective use in practice are covered.

Keywords: modernization, information base, cognitive, invention, exploitation, project expertise, consulting services, innovation, strategy, integration.

It is known that in connection with the modernization of the education system in our country, one of the most important directions is to transform higher educational institutions into innovative scientific and educational centers with modern scientific research, equipment, technological and information base and capable of transferring new scientific technologies to market producers.

It determines the direction of development of research and innovation activity in higher education institutions, fundamental modernization of the economy and quality training and development of personnel. Use of innovative ideas and technologies in a higher education institution, increasing the educational and cognitive activity of students; activity in the field of scientific research and invention defines training of specialists ready for innovation as one of the main tasks of education.

The activity of an engineer is based on the current state of technology, production, the potential of the productive forces of society and science. Distinctive features of the engineer's work are the scientific basis of the interaction of technological processes with the environment and human life, and a practical attitude to technology. Therefore, the development of engineering solutions and their





implementation in the form of technical devices, technological processes, operating modes of structural infrastructures is carried out on a scientific basis.

The task of a higher education institution is not only to prepare a highly trained engineer, but also to introduce him to the training stage in the development of new technologies, to adapt him to the conditions of a specific production environment, to make him successfully perform managerial functions. Specialists being trained in a higher education institution should not only meet the latest requirements in various spheres of society's life, but also be ready for development in all these spheres.

The difference in the goals of the innovative activity of the expert and the student determines the difference in the motivation of the innovative activity. For an innovative engineer, innovative activity results from a combination of social and psychological motives such as social duty, responsibility for invention, payment for work results, professional development, self-development and self-improvement. In the student's innovative activity, mainly psychological motives aimed at self-affirmation in the group, the desire to participate in interesting scientific research play a key role.

The content of students' innovative activity consists of two main stages: creative and research. Structural elements of technical creativity - reflection and understanding of technical need as a problem of technical development; development of a new technical idea; development of an ideal model of a technical device; design the transition from an ideal model to the creation of a new technical device based on mathematical and technical calculations; creating a new industry model.

The construction of the educational process in a technical higher education institution in accordance with these stages allows the student not only to be the creator of an innovative idea, but also to become a tester of his innovative product after successfully completing the product or process. This is the basis for the development of good motivation for students in the implementation of an innovative product or process, as well as for the development of creative, research and inventive activities and experience of professional self-improvement.

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