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PROFESSIONAL ACTIVITY AND DEVELOPMENT STAGES OF ENGINEERS IN THE WORLD EDUCATION SYSTEM

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Annotation
This article is devoted to the identification and improvement of the professional activities and stages of development of engineers in the global education system.

Keywords: education, training, engineering, professional activity, educational institution, “Dual” system, technique, technology, innovative activity, motive, experience.

Introduction

One of the hallmarks of the development of higher education today is the creation of integrated education systems, ie the formation of higher education institutions or their individual components and a set of manufacturing enterprises and organizations, non-manufacturing enterprises, in particular, the manufacturing complex (enterprise). Dual system of vocational education is widely used in developed countries, especially in Germany. The essence of the "Dual" system is that in the educational process is associated with the future work of the student, that is, training in collaboration with a manufacturing company and a higher education institution.

In our view, in the search for new paradigms of education, innovative processes serve as the only factor that develops the education system. Based on the above, the analysis of engineering education in our country allows us to draw the following conclusions: Engineering education in the country is fundamental, the demand for engineering education is not only declining, but constantly increasing, and it is important to acquire innovative features to improve the quality is a necessity.

First of all, before analyzing the content of the professional activity of an engineer, we need to define the essence of the concept of "technical activity".

The word technique is derived from the Greek word “techne” (art, skill, qualification), which means “the ability of human beings as subjects to purposefully influence an object to achieve a particular result and thus to satisfy their needs through active contact with the environment”. Like any other activity, technical activity has the following basic elements: motives, goals, means and their automated components - operations.

Many researchers have dealt with technical issues: N.D. Levitov, B.M. Rebus, M.G. Davletshin and others. The results of their research are summarized, taking into account the role of improving the innovative methodological system in engineering activities.

It follows that the main results of the study of technical activity are directly related to the professional activity of innovative engineering.

The final results of innovative activities in the form of new content, methods, organizational forms of the educational process in the field of education or the improvement of technical means of education

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used in practice, or new approaches to social services in education, their improvement can be called innovation. The main features of innovation are the positive effective social and economic changes that occur in the work process of an educational institution or industrial enterprise as a result of specially organized innovative activities. In this context, the introduction of innovative approaches to such areas of education as social services, methods, technologies, technical means in educational institutions is important.

"Typically, innovations are manifested in situations where a new quality with innovative features emerges as a result of solving a traditional problem using a new method, the long-term accumulation of information and evidence, and their perception. Most modern technologies are consistently linked to historical experience. It is an innovative process - the process of creating, mastering, using and promoting ideas (theories, methods, technologies, etc.) that are motivated, goal-oriented and perceived in accordance with modern and current conditions, meeting certain criteria. allows you to note that. At the heart of innovative educational processes are two very important problems of pedagogy: the study of pedagogical experience and raising it to the level of implementation of psychological and pedagogical scientific achievements.

Many experts, especially A.Ya. Kuznetsova, A.Dyakov, G.S.Khudoley, T.V.Stebenyaeva Improving the methodological system of engineering education as a process of goal-oriented formation of knowledge, skills and methodological culture and its results, as well as techniques and technologies through appropriate content and teaching methods interpret the specialist in the field as an integrated training for the professional activity of innovative engineering.

The general classification by areas of application of innovations and their types is given by A.D. Goxshtand suggested. Innovative engineering activity is the creation of data (goods, works, services) that are fundamentally new or have a new consumer character and the organization of their production; described as the development of new methods (technologies) for the production, popularization and use of products or the modernization of existing ones. A.D. Goxshtand describes the professional activity of innovative engineering in the form of incorporation of scientific and technical achievements into economic (civil) consumption.

The professional activity of an engineer is the design and creation of new techniques and technologies that are marketed, have socio-economic and other benefits, and as a result are competitive.

Based on the analysis of the definitions of the professional activity of the engineer, we give the following definition for the continuation of our research: innovative engineering professional activity - the product is branded, registered as intellectual property, has technical documentation or production samples is the process of designing and creating new competitive technologies. The engineering professional activity is crucial in ensuring that the country's economy occupies a leading position in the world and reflects new forms, new forms of integration of education, technology and production.

The main features of the engineering profession are:

- Development of creative aspects of professional activity (finding creative and non-standard solutions to professional problems, quickly identifying what is needed from a large amount of information);

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- Ensuring the integration of engineering functions and activities (effective combination of exploratory and design functions in the design of products and technologies and the organization of their production, the ability to make independent decisions, focus on market needs);
- Establish effective inter-professional communication (readiness to work effectively in a team with other professionals in solving professional problems).

The structure of work related to the professional activity of engineering, first of all, includes the following tasks of innovative type:
- Fundamental and research research;
- Practical research, experimental design and technological work;
- Acquisition of new or improved technologies;
- Development of new or improved goods and services;
- Production of goods, works, services and their sale in the consumer market using the results of scientific and technical activities.

From the above, it can be concluded that the main products of innovative engineering professional activity (innovative products) are: intellectual property protection document (patent, trademark, etc.), product technical documentation, technical documentation of the product manufacturing process, new product, new technology, that is, everything, products, and results created as a result of innovative engineering professional activities and available to the market.

LIST OF REFERENCES

1. Kirsanov A.A., Jurakovskiy V.M. Basic engineering preparation / -M .: MADI (GTU); Kazan: KGTU, 2007, -498 p.
2. Nazarov A.A. Didactic principles that shape students' innovative approaches to engineering activities. Teacher and Continuing Education (ISSN 2181-7138) № 3 2018 jyl Scientific-methodical journal pp. 73-75.
3. Tojiboeva D. Methods of teaching special subjects. Textbook - T .: Science and Technology Publishing House, 2007. - 81 p.
4. Turaev SJ Improving the methodology of preparing students for professional activity on the basis of software (on the example of the direction of education in software engineering) / Dissertation of Doctor of Philosophy (PhD) in Pedagogical Sciences / Karshi, 2019.-136 p.
5. Berger C.R. Interpersonal communication: theoretical perspectives, future prospects. Journal of Communication, 2005. -№55, P.415-447.