



# Theory of Modeling of Students in Their Future Professional Activities in Continuing Education

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## ABSTRACT

In this article, the theoretical basis of modeling students in their future professional activities is presented. In addition, the origin and essence of the concept of "engineer", the subject of engineering activities, the objectives of which are based on the market.

### Keywords:

Future professional activity, modeling, engineer, designer, constructor, personality activity approach, etc.

**Introduction.** The word "engineer" is derived from the Latin word "ingenium", which means an acute mind, a kind of inventor. On the basis of the Latin word ingenium appeared the French version of the word engineer – engineer, which means to think, to think independently, to be an inventor. "Engineer is a specialist with higher technical education" [1].

**Literature Review.** As an engineer-designer, constructor specialist, he is described as a specialist who solves the problems of the application of technologies in practice on a scientific basis. Engineer - "the creator of the Technosphere, prepared in scientific terms, therefore, the movement of theeetet on the creation and development of industrial civilization" [2].

Engineers say that people who are associated with the creation, development and operation of various types of equipment, that is, a specialist with technical knowledge who is able to create a variety of technical structures.

Having determined the origin and essence of the concept of "engineer", it will be necessary to find an answer to the question of what constitutes him in his professional activity.

**Research Methodology.** Activity as a philosophical category is "an active form of human relations with the surrounding world, the meaning of which is the realization of purposeful changes in the direction of interests and interests".

Activity in society-the system, its elements represent people and their needs, motives, goals, tools and forms of their implementation.

In order to distinguish engineering activity from other types of activity, we try to clarify its main symptoms, such as: the subject of engineering activity; goals; tools; productivity; technology.

The subject of traditional engineering activities is the process of purposefully creating, improving and efficient use of technology and related technical objects.

Therefore, technical entities are represented not only by materialized products of human activity, but also by technical entities and information products that characterize the processes of their creation: technical tasks, projects, manuals, programs, standards, subjects, etc. [3].

**Analysis and results.** The purpose of engineering activities for Man is to increase productivity through the use of a higher level of technology, that is, the use of scientific knowledge and technical objects, the effectiveness of any activity - scientific, industrial, medical, sports and the like.

Tools of engineering activities are as follows:

- material and technical means: technical, enterprise, communications;
- media-scientific, scientific-technical, methodological knowledge is recorded in different ways: monograph, textbook, textbook, project documents, computer program, web-sites;
- actual means-people with knowledge, ability, professional skills in this field of activity;
- serves vs financial resources [4].

The productivity of engineering activities is determined by its purpose. The product of engineering activity is technical objects, their descriptions, other information materials related to it.

The technology of engineering activity is a broader concept than the technology of individual work of an engineer, it is: the organization of mutual labor activity between and among the Labor team of designers, manufacturers, repair Masters and others.

The following are its direct focus on the creation of technical objects, their improvement and use; the degree of complexity of the issues to be addressed; the degree of responsibility for the decisions taken are the main criteria of VS engineering activities[5].

We pay attention to the sources of current engineering activities and its manifestations.

Historically, even in the Middle Ages, engineering activity did not yet exist in the modern sense, but it existed as a technical activity associated with manufacturing craftsmanship. The first engineers appeared only in the Renaissance, formed among the scientists who applied to technology, or among the artisans who studied independently, resorting to science. During the same period of awakening, engineering activity began to be separated from the sphere of technical activity

as a "profession related to the regular application of scientific knowledge in technical practice".

By the beginning of the last century, when the machine-building began to take shape, "quot;... engineering activity-complex complex of various types of activity (inventor, constructor, designer, technologist, etc.) serves as" various branches of Technology (Mechanical Engineering, electrotechnics, Chemical Technology, etc.)".

On the other hand, the complexity of the execution of all types of engineering activities by one person and even a group of specialists indicates that modern engineering is distinguished by its various branches and functions. Stratification divides engineering activities into several types of activities that are interrelated with each other and the communities in which they are carried out.

So, for example, in the current period, when studying a certain specific science, some types of engineering activities of the future engineer are: calculation-design, construction project, production technology, scientific research, service and technical service, design and inquiry, preparation for the assimilation of production, management, installation and commissioning, exploitation, etc.

On the other hand, by the second half of the last century, along with the progressive stratification of engineering activities in their various branches and manifestations, the process of integration, which is associated with a change in the subject of engineering activities, is also growing. The subject of engineering activity is complex and takes place in the form of a "human-machine system" [6]. The need for specialized professionals, that is, system engineers, to carry out such integration is increasing.

Systematic technical engineering activity-manifests itself in a complex type of activity, which includes a large number of performers and functions aimed at creating complex technical systems. Its purpose is to attract specialists who work in this production, as well as in the organization of all work.

The structure of systematic technical activity is divided into "horizontal" and

"vertical" structural structures, which reflect the interaction between work and specialists. The first defines the components and aspects of the system, in particular, the creation, design of machine blocks, the "connecting plane" of Man and machine, the development of economic, organizational and social aspects of the technical system. The latter is suitable for a general sequence of systematic work, that is, engineering research, discovery, projects, production implementation, operation[7].

Thus, at the beginning of the Twenty-First Century, the existence of stratification of classical and structural engineering activities was observed. In addition to the above-mentioned elements of the composition of engineering activity, its main "components are considered actions that perform it", that is, the activity is carried out through a certain set of actions that are subject to the conscious goals of this activity. It is understood to have any set of actions, to master and master the skills or abilities that correspond to it.

Psychologists to "skill" as follows:

- the method of performing an action provided by a set of knowledge mastered by the subject; the ability to perform a particular action in accordance with certain rules;

- they describe not only as normal, but also as changed conditions;

- it is a basic human method of performing an action that involves the correct acquisition of human purpose in New conditions and is provided with a set of knowledge and skills, which includes the time of creativity, and not as a simple repetition of the previously accumulated experience;

- actions that are based on the use of knowledge in different manifestations and are included in a certain type of activity, both in the process of transition from knowledge to skill, and in the process of transition from skill to skill.

In didactics, skill is interpreted as the methods of assimilated activity, and in the methodology - as the most rational same sequence of actions. Consequently, there is no single interpretation of the concept of "skill" in the psychological, pedagogical and methodological literature.

Within the framework of this research work, the concept of "skills" is interpreted from the point of view of the personality-activity approach, relying on the approaches based on competency and activity within the framework of the qualification requirements of the "state educational standard" of higher education for the training of future engineers.

The approach to individual activity implies the formation in the skill activity, it is determined by the characteristics of the object and at the same time manifests itself as the ability to target activity, as well as an important characteristic of the individual. In this approach, "on the one hand, skill is the ability and result of activity, and on the other - the ability and quality of the individual".

Today, there are many research work devoted to the formation of skills in the students of technical universities[7].

**Conclusion.** Summarizing the views presented, the following:

- 1) engineer is a person who has competency in his / her professional activities;

- 2) engineering activity-is a type of activity that links the engineer with higher professional education, various technical objects or systems and is aimed at creating, improving, providing technical services, using, assessing the consequences, it is possible to make conclusions such as assessing the mistakes made and feeling of responsibility based on the constant use of scientific knowledge;

- 3) skill - determines the ability of the subject to perform any type of activity aimed at the results, as well as its characteristics, such as personal qualities.

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