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Intellectual Skills of Students Developed in the Process of Teaching Technical Disciplines Based on Innovative Pedagogical Technologies

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ABSTRACT: The article deals with the problem of the formation of intellectual skills, which is one of the main tasks, from the solution of which, in many respects depends the improvement of the entire educational process of the university aimed at forming an internal need. To the independent acquisition of knowledge and the application of these skills for the creative transformation of reality, which constitutes the qualities of the personality necessary in the modern educational process?

KEYWORDS: integration factor of humanization, pedagogical system, interactive methods of teaching, intellectualization of labor, intellectual skills.

I.INTRODUCTION

The unique national education in our country is based on the priorities of national values and modern technologies. That is why the question of how humanization of engineering and technical activity provides a high level of training of highly qualified specialists of engineering and technical profile, contributing to the formation of new pedagogical approaches is again relevant.

There is no doubt that the created and functioning system: "Human being - machine-environment" for the entire period of its creation is not only complicated, but also required qualitative and structural changes in the application of methods of humanization to technical and technological processes. It is known that the developed University methodology for training future engineers is currently aimed at eliminating the dilemma between the Humanities and technical Sciences. This, above all, contributed to the ongoing economic, social and democratic reforms in our country, which had an impact on increasing the requirements for future professionals, in particular, engineers, because without the full application of their professional knowledge and skills, the implementation of intensive implementation of modernization processes, is not currently conceivable.

It should also be noted that the integration factors of humanization affect the development of human creativity and its hidden reserves on the need to address the humanization of environmental technical and environmental systems in the production processes. At this level, the creative interest of the engineer is formed, which is not limited to the results or achievements, because in this context there is already adapting the technical environment to the person, the optimal parameters of which are projected by himself.

The integration factor of humanization in technical systems plays an important role, having a direct impact on the expansion of the interaction of mass culture and mass consumption. Modern engineer is actively involved in the organization and creation of an artificial environment. As well as other types of human activities aimed at humanization and aestheticization of the subject - spatial environment, engineering personnel are responsible for creating an



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optimally functioning and favorable technical environment in which the integration of technical and natural forms performing instrumental and organizational functions would be correlated.

Taking into account these priority areas, the modern educational process for the training of engineering and technical personnel requires the introduction of new forms of extracurricular work relating to greater interaction of socio-political, humanitarian Sciences with engineering and technical disciplines.

This is due to the fact that the changes taking place in our country during the entire period of independence require the training of young people with comprehensive technical knowledge, correlated with the socio - economic and political development of the country, as economic and democratic changes have had an impact on changing the social Outlook, eliminating stereotypes of personal thinking.

The pedagogical process is a functioning pedagogical system. The structure of any pedagogical system includes components: the teacher, the student, the content of education, forms of organization of the pedagogical process, methods of pedagogical process (methods of training and methods of education), means of pedagogical process, the purpose and result. The largest components, in another way - the procedural components of the pedagogical process are interrelated training and education. They, in turn, are divided into other, smaller components. For example, the process of training - on teaching and training, etc. And training, and education can be considered as a subsystem of a functioning pedagogical system. They have common functions (educational, educational, developmental), but with the educational dominant - in the first case, and with the educational - in the second.

The learning process is a functioning didactic system. It involves all the components of the pedagogical system. Each of them can be the subject of consideration, in this case it is a means of learning. All components in a holistic pedagogical process are interconnected. Their effectiveness, both separately and in the system, increases if the process is organized on the basis of any theory or concept. We are based on the concept: training as a functional didactic system is a system of organization of educational activities of students. This conceptual approach extends to the entire learning process, including each of its components.

In the context of the development of scientific, technical and social progress, accompanied by an increase in the volume of diverse information, a rapid update of the stock of knowledge in the activities of any specialist is of great importance the ability to independently acquire, expand and update knowledge. According to scientists, the volume of scientific knowledge doubles approximately every 10 years, which means that Universities, no matter how hard they try to keep up with the development of science and technology, the knowledge that students received at the University, quickly become obsolete. This leads to functional illiteracy among students and, ultimately, mass layoffs, as the market economy leads to competition in the workplace. Therefore, each student must independently, systematically, continuously replenish and update their knowledge and skills in the minimum time to get maximum information.

The regulation "On higher education" States that the purpose of higher education is to train highly qualified personnel with high spiritual and moral qualities, capable of independent thinking, self-education and self-development of the individual.

To achieve this goal, the main objectives of higher education, such as the use in the educational process of interactive teaching methods, new pedagogical and information technologies, distance education systems that promote self-education and individualization of learning [1].

At the same time, special attention is paid to the means of mental activity, which require the mobilization of intellectual abilities of a person, as a great place in his educational and professional activities is the process of solving intellectual problems.

Relevant statements of academician P. R. Atutov that in the implementation of the tasks of improving the functional literacy of students should be a priority development of students, the formation of a creative style of thinking, arming the most common ways of activity [2].

Intellectualization of labor inevitably leads to an ever-increasing role of intellectual skills in the professional activity of man. In these conditions, the formation of students' intellectual skills that contribute to the development of their cognitive independence, mental activity is of great importance in the learning process.

The problem of formation of intellectual skills is one of the main tasks, the solution of which largely depends on the improvement of the entire educational process of the University, aimed at the formation of the internal need for self-knowledge and the use of these skills for the creative transformation of reality, which is the qualities of the individual, which requires a national training program.

One of the first scientists who drew attention to the insufficient quality and relevance of the problem of forming intellectual skills, is N.A. Menchinskaya[3]. It showed that first the products of mental activity are studied, i.e. the knowledge (concepts) that students master, then the mental properties, processes and formation of intellectual activity that affect the process of knowledge acquisition are studied. The quality of knowledge depends on the



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characteristics of the cognitive activity in which it is included, and the breadth of the inclusion of this knowledge in various activities. In the development of the latter, the student comes to the fore not only as an object, but also as a subject of learning, controlling and regulating their thought processes. Thinking in student years develops intensively in the process of purposeful, educational activities in close interaction with perception, memory, speech, spatial representations and imagination.

In psycho-pedagogical and methodical literature justified the position that in the learning process for the process of assimilation should be transferred to the subject knowledge, which are set out in the textbook, and knowledge about the stages of development of intellectual skills that provide mastery of scientific subject knowledge. The formation of these skills in technical disciplines is carried out by a system of educational and cognitive, technical and technological tasks, the use in the educational process of interactive teaching methods, modern pedagogical and information technologies, problematic issues and situations, as well as the modeling of the educational process. At the same time, it is best to use simulation of future professional activity of game and simulation nature. In the course of modeling, approximate conditions for real future activity are created, cognitive activity of students is activated, familiarization with the nature of future engineering work takes place. Cognitive activity in this case arises on the basis of various contradictions that make up the subjective side of the problem situations.

In this regard, the goal is to find out to what extent the solution of cognitive tasks and active teaching methods helps to awaken the students' need to combine knowledge with practical activities and how it leads to the formation of appropriate skills of students.

Intellectual skills are a necessary means of transition from thinking to conscious, independent, practical and professional activity. The problem of transition from action to thinking is widely covered in the psychological literature, but the reverse process – the transition from thinking to new practice – is little reflected in psychological and pedagogical work. In the implementation of this task, a great place is given to the role of thinking techniques. Mastering the methods of thinking, ie. intellectual ability, guarantees the strength of knowledge, develops interest in the subject, expands cognitive capabilities. There is a need to find and discover for the personality of the new, which contributes to self-education, self-education and self-development.

If the student is in the classroom and during extracurricular activities actively processed in the mind of the received information (compares, analyzes, synthesizes, summarizes, klassificeret, main highlights etc.), what level of knowledge is higher than other students. If since childhood you start to train, to teach students techniques to "learn", i.e. to equip a tool of thinking, it greatly saves excessive energy consumption and training time.

The introduction of systematic formation of intellectual skills in higher educational institutions is a far unsolved problem and requires serious efforts on the part of researchers.

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