Engineer The Future Engineer Mechanism Of Preparation For Activity

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ABSTRACT

In the article, the mechanisms of development of students' professional competence in engineering activities in higher education institutions are explained in the example of the development and application of information maps in the form of a systematic list of textual and graphic information on separate topics of the science "Engineering and computer graphics".

Keywords: Higher, education, international, student, training, professional, competence, engineering, computer graphics, textual, graphic, imagination, activity, intellectual, creative, cognitive, ability, efficiency.

According to international best practices, Office of International Science and Engineering [OISE], American Society for Education and Development [ASTD], National Society of Professional Engineers (NSPE), Institute of Engineering and Technology (ABET), Engineering Council of Great Britain (ECUK), Australian Institution of Engineers (IEAust) and Japan Accreditation Council for Engineering Education (JABEE) are innovative intellectual centers that provide professional development opportunities, regulate and ensure education for engineers, innovative approaches to the development of the engineering field, the formation of professional competence of future engineers by applying modern methods to the educational process, the main goal of instilling global skills in future engineers.

Therefore, to determine the prospective directions of improvement of students' engineering professional competence, training optimization of various forms of organization of the process, development of criteria for evaluating the professional qualifications of future specialists, modern trends of economic development place more and more demands on the professional qualities of the specialist.

In particular, the Strategy of Actions for the further development of the Republic of Uzbekistan [Decree of the President of the Republic of Uzbekistan "On the Strategy of Actions for the further development of the Republic of Uzbekistan".// Collection of legal documents of the Republic of Uzbekistan. -T., 2017. -B.39.] "Stimulation of research and innovation activities, creation of effective mechanisms for implementation of scientific and innovation achievements" and ensuring the development of innovations in the education system from the main areas of activity of the Ministry of Innovative Development [Decree of the President of the Republic of Uzbekistan "On the establishment of the Ministry of Innovative Development of the Republic of Uzbekistan" // QHMMB:

06/17/5264/0339-issue 01.12.2017] priority tasks require the need to prepare competitive engineers for innovative activities in the higher education system.

A. Abdurakhmonov, D.F.Kuchkarova, Sh.K.Murodov, J.Ya.Yodgorov, U.A. Nasritdinova, T.Rikhsiboev, D.S.Saidakhmedova, many scientists on the study of various problems of teaching and improving graphic education in different periods. S.S. Saydaliev, A.K. Hamrakulov, D.Sh. The Dilshodbekovs conducted scientific research on the problems of graphic preparation of specialists and the development of graphic design competence.

The problems of learning the following engineering graphics subjects: drawing geometry, engineering graphics, design basics, engineering and computer graphics, and other geometric-graphic subjects have not been sufficiently analyzed in connection with teaching general subjects, taking into account the characteristics of future professional activities.

It should be noted that the quantitative and qualitative criteria for assessing the level of professional competence at the stage of mastering graphic subjects, which include the organizational, pedagogical, methodological and technological foundations of the educational process, have not yet been developed.

The above thoughts prompted us to theoretically justify and experimentally check the effectiveness of the system of general engineering-graphic training of students of higher educational institutions, which is especially relevant in the conditions of high demand for the quality of specialist training. Summarizing the practical experience of graphic training of students and analysis of scientific and methodological works in the process of graphic training of highly qualified future specialists **shortcomings and conflicts**allowed to determine.

First:

- In the last ten years, the results of many studies on the preparation of engineering graphics by professors and teachers of higher educational institutions have been published. The problems of developing spatial imagination are considered in them;

The considered problem is relevant both in terms of preparing students for educational activities in general engineering and graduate departments, and in terms of increasing the efficiency of the educational process and increasing the mental activity of students.

Secondly:

The leading activity of the student is his educational and cognitive activity, and for the teacher - educational work. All this requires the teacher to think deeply and reflect on the didactic support of preparation for lectures and practical sessions.

Today, it is necessary to further democratize the society, raise the activity of higher technical educational institutions to a new level of quality, in the conditions of wide opportunities for the activities of private higher educational institutions. This is, first of all, the rejection of the principle of uniformity in education, the establishment of different types of educational institutions, new educational programs whose contents correspond to the educational fields of higher educational institutions, and should be reflected in the creation of textbooks, revision of teaching methods and tools.

Modern trends in the development of higher educational institutions present a number of new theoretical and practical problems to professors and teachers working in technical higher educational institutions. One of them is a reflection of the integration and differentiation of knowledge in the content, nature and activity of education.

Thirdly:

due to the sharp increase in the amount of information that a person needs to perceive and process both in the course of professional activity and in everyday life, informatization in the field of education is becoming a real force. The result of many production and non-production processes depends on its quantity and quality. Modern concepts of the educational system of Uzbekistan are being directed more and more to the requirements of new ideas, didactic principles mainly related to the use of ICT - information communication

technologies. Computer is not only in engineering and science, but also plays the role of a tool in professional activities in the humanitarian field, business, economy and education. In general, computer technology has become an integral part of modern human daily life.

The analysis of the work carried out in the teaching of "Engineering and computer graphics" shows that first-year students' mastery of graphic subjects, especially in the first semester, is insufficient. The main reason is the low level of graphic preparation at the drawing school or its complete absence (not studied at school).

According to the above-mentioned opinions of pedagogues and psychologists, it can be assumed that there are different concepts about the structure of interests, and this assumption makes it possible to formulate a general theory of interest in pedagogical activity and develop a methodology for its implementation in the example of teaching graphic sciences, taking into account the activation of professional interests (1 - picture).

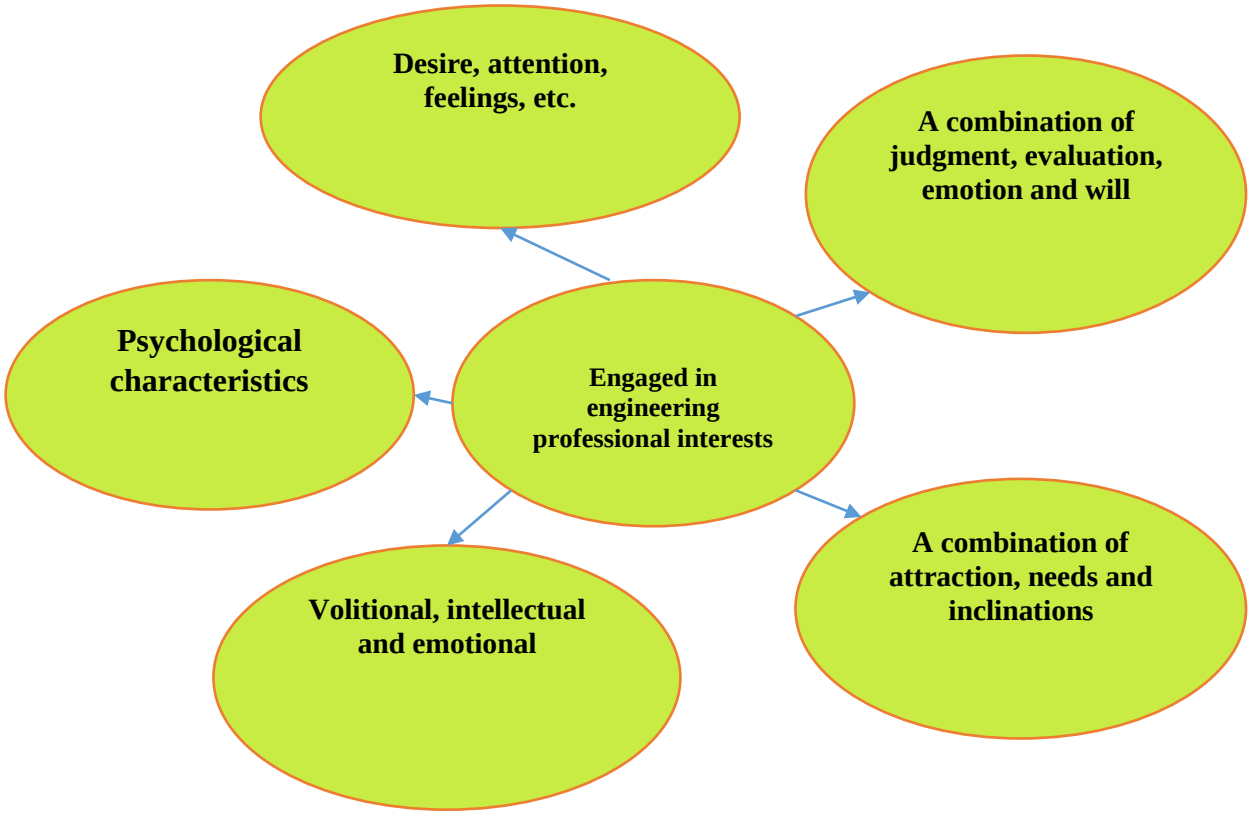

Figure 1. Students are engaged in engineering activities scheme of mechanisms of professional competence development

In contrast to cognitive interest, professional interest is characterized by great accuracy, goal orientation, completeness of content, and stability, because this type of interest is related to the chosen profession and is constantly developing and strengthening as a result of daily educational activities of the person to acquire the profession.

It should be noted that the concept and place of professional interest is clearly defined in pedagogical and psychological literature. But methods of activating professional interests in the process of learning engineering and computer graphics in engineering universities, their effects have not been sufficiently studied, and this partially determined the task and purpose of our research.

Students creatively study curriculum materials as future professionals, to necessary professional skills should have and know how

to apply scientific and technical achievements in practice. The goal of any educational process in engineering universities (among other conditions) is to activate the professional interest of students with the help of a specially designed program, which, in our opinion, is the basis of the pedagogical process as the main process in the development and improvement of a specialist.

Taking into account all of the above, the following conclusions can be drawn:

The main criteria for conducting a lecture are as follows: its necessity in discussing important and conflicting opinions; ease of studying the most difficult topics for independent analysis.

It is necessary to create a methodology for teaching lectures at a level that activates and increases the intellectual potential of students, that is, directs it to the main directions of individual educational research activities.

The rational organization of practical training based on the maximum activation of the process of acquiring knowledge, skills, and abilities is very important for improving the quality of professional training of specialists.

There is almost no control over the level of knowledge acquisition of each student individually.

We believe that in the process of organizing independent work, it is necessary to establish the chain of personal thinking and reasoning of students.

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