

FORMATION OF PROFESSIONAL COMPETENCE OF FUTURE TRANSPORT
ENGINEERS

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Abstract. This article analyzes the formation of professional competence of future transport engineers, its significance and application in the training of transport engineers. The importance of developing the quality of training of future transport engineers and their success in the labor market through the introduction of methods and technologies, principles of training transport engineers based on competence is also emphasized. The results of the emphasizing and formative stages of the experiment are presented as the first pedagogical condition for the formation of professional competencies.

Keywords. Competence, knowledge, method, technology, profession, skill, person, engineer, transport.

Introduction. At the present stage of socio-economic development, one of the important tasks of transport industry enterprises is the training of competitive transport engineers for market relations. The reason for this is that in conditions of fierce competition in the intellectual labor market, a university graduate will be professionally successful if they possess professionalism and competence in a wide field of science, general and professional competencies, professional mobility, and the ability to adapt to rapidly changing conditions.

In this regard, the problem of defining the content and developing the technology for the formation of professional competencies of future specialists who have graduated from higher technical educational institutions in the field of transport engineering is one of the urgent and still insufficiently developed problems facing, first of all, university teachers and the entire higher education system. The relevance of the problem is determined by the ever-increasing demands of employers towards graduates.

Analysis of the literature on the topic. A.V. Khutorskoy explained that the concept of professional competence is a set of necessary knowledge, skills, and methods of activity given to certain objects and processes. L.P. Saksonova indicated that competence is defined as a combination of qualities, a state that allows one to carry out independent and responsible actions, and a person's ability to perform certain labor functions. The foundations of a competency-based approach in education are also described in the research of E.F. Zeer, R.Z. Khudaykulov, and others [1,2,3,4].

According to A. Vanita, K. Lathi, S. Balan, the personality of a comprehensive (universal), creative, developing future (professional) specialist can be formed only in the conditions of an inseparable pedagogical process, the professional competence of an engineer - each stage is built on the basis of general principles, methods, and goals to achieve the ultimate goal [5].

The main idea of developing a person's competence is not only the acquisition of knowledge and skills in formal education, but also the knowledge acquired by a person outside of formal education. According to O.N. Oleynikova, competence is "the comprehensive use of knowledge, skills, know-how, and relationships in known or new working conditions" [6].

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Research methodology. At the same time, the intellectual factor for engineering activity has system-forming significance. Qualities related to technical, mathematical, and constructive thinking are considered professionally important in the work of an engineer.

In addition, the factors of the socio-economic situation in society activate students' abilities for self-development and self-education, the formation of universal and flexible competencies [7].

Competence can also be general, that is, applicable in various spheres of life, and specific, applicable in a narrow professional context. Engaging future transport engineers in professional activities begins at the stage of perceiving the basic knowledge and skills in the field of professional activity, which form the basis of professional competence. The process of perception by future specialists of the components of professional activity involves providing information about the basic knowledge and skills of the participants in the experimental work in this area of activity through the performance of educational and professional tasks, methods of familiarization with them, and their mastery.

The level of competence is determined by a person's ability to effectively apply their knowledge and skills in various conditions, adapt to changing conditions, and find optimal solutions to the tasks set. In addition to technical knowledge, this term includes analytical skills, decision-making skills, communication, management, problem-solving, and other skills necessary for success in a specific field [8].

Analysis and results. A graduate of the "Vehicle Engineering" educational program must implement the knowledge, skills, and abilities acquired at the university in the process of solving professional tasks in certain working conditions and using modern methods and technical means. For this purpose, a program of experimental work was developed. The program planned to conduct the experimental work in the following three stages in 2023-2025:

- 1) Emphasizing (2023)
- 2) Formative (2024).
- 3) Final (2025).

Experimental work, i.e., the emphasizing (2023) and formative (2024) stages, were conducted in the "Vehicle Engineering" educational direction at the Fergana Polytechnic Institute (FARPI) and Andijan Machine-Building Institute (AMSI), at the Bukhara Engineering and Technology Institute (BITI), and at Urgench State University (UrSU). A total of 549 students participated in the experimental work. Of these, 272 students participated in the control group, 277 students and 86 teachers in the experimental group.

During the experimental work, the following research objectives were solved: the degree of formation of students' professional competencies within the framework of specialized subjects taught in the curriculum was analyzed, and it was established that this degree is insufficient for future transport engineers; The theoretical basis for building a model for the formation of professional competencies in students of the specialty 60712500 - "Vehicle Engineering" based on teaching technology and methods of forming professional competencies, including ways to develop students' learning motivation, has been determined.

At the emphasizing stage of the experimental work, diagnostics were conducted to determine the initial level of formation of the motivational component of professional competence in future transport engineers.

To determine the attitude of future transport engineers towards their professional practical activities, the incomplete sentences method was used, i.e., students were asked to write a series of incomplete sentences. For example, questionnaires were conducted on the topic: "I am engaged in professional

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practical activity because..." and other content. Analysis of the results of the questionnaire aimed at diagnostics showed that they had a predominantly external motivation for their professional practical activities. 45.12% (122) of students in the experimental group and 36.32% (101) of students in the control group noted that there is a mandatory need to participate in professional practical activities to gain points for current, interim, and final assessments according to the current rating system for assessing students' knowledge. 29.3% (81) of the experimental group and 40.3% (109) of the control group students emphasized that engaging in professional and practical activities is included in the curriculum (laboratory and practical classes, course projects and works, qualification and pre-diploma internships, final qualification works, etc.), due to which training is mandatory, 25.58% (99) of the experimental group and 23.38% (64) of students in the control group stated that professional practical work is necessary for their future professional activities.

In addition, diagnostic questionnaires were used to clarify the attitudes of future transport engineers towards their professional practical activities and the main motives for their participation in them.

Analysis of the students' answers allowed us to draw the following conclusions: in the emphasizing stage of the experiment, the question "Are you interested in practical professional activity?" was answered negatively by 61.97% (172) in the experimental group and by 62.76% (171) in the control group.

The following were identified as the main motives for participation in professional practical activities: interest in learning new things, interest in the learning process itself, increasing prestige among fellow students, personal self-development, self-respect, the ability to study specialized subjects in depth, the ability to develop personal qualities (goal orientation, self-organization, etc.), and acquiring important professional skills to gain a prestigious position in society.

Conclusion. Based on the above-mentioned opinions and the results of the emphasizing and forming stages of the experiment, as the first pedagogical condition for the formation of professional competencies, the focus on phased activity, that is, the focus (orientation) on the professional practical activity of future transport engineers, which is considered as a coordinated and effective activity that allows for the transfer of the goals of future transport engineers from social significance to personal significance, was determined.

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