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THE USE OF INNOVATIVE TECHNOLOGIES IN THE TRANSPORTATION INDUSTRY MANAGERS' TRAINING

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Розглянуто можливість підвищення якості підготовки фахівців у галузі автомобільних перевезень за рахунок застосування інноваційних технологій навчання. Проаналізована можливість спільного використання особистісно орієнтованого навчання й спеціальних програмних продуктів. Таке поєднання підвищує не тільки ефективність процесу навчання, але й готовність випускника до здійснення майбутньої професійної діяльності.

Ключові слова: інноваційне навчання, професійне навчання, випускник вищого навчального закладу, програмне забезпечення.

Рассмотрена возможность повышения качества подготовки специалистов в области автомобильных перевозок за счет применения инновационных технологий обучения. Показана возможность совместного использования личностно ориентированного обучения и специальных программных продуктов. Такое сочетание повышает не только эффективность процесса обучения, но и готовность выпускника к осуществлению будущей профессиональной деятельности.

Ключевые слова: инновационное обучение, профессиональное обучение, выпускник высшего учебного заведения, программное обеспечение.

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The possibility of improving the quality of training specialists in motor transport through the application of innovative training technologies has been considered. The possibility of sharing personal-oriented learning and special software products has been shown. This combination increases not only teaching efficiency but raises the graduate's willingness to carry out the future professional activities.

Key words: innovative education, vocational training, graduate of higher education institution, software.

Problem statement. Training of specialists that are able to effectively carry out their professional activities is a national priority of Ukraine. In this area one of the main problems is to form and to select the adequate educational models. Current global changes in the world show that this sphere of education is considered by many countries as a priority in the training of competitive specialists. At the same time, the level of development and use of present-day technologies is determined by the development of the material base, the level of society intellectualization, the ability to produce, assimilate and apply the new knowledge. In the process of creating the students' competences, the main tasks should be not only the transfer of knowledge to future specialists, but also the development of practical skills for applying this knowledge gaining such characteristics as responsibility, ability to take risks, initiative, and decision-making courage.

When training specialists of the motor transport industry among the most important problems of students' preparation, it is possible

to emphasize: complexity of practical training organization; limited access to complex technical equipment and technologies; impossibility of making the experiments in full-scale conditions; lack of teaching aids that meet the current level of technology; lack of proper theoretical and practical competence for the future specialists from the employer's point of view; need to retrain the graduates of higher education institutions in time of employing.

Analysis of recent researches and publications. Vocational training is a managed pedagogical process of cognition of a certain professional and labor area, an organized way of vocational education training system. This process of vocational training includes two interrelated components: the professional pedagogical activity of teachers and the professional and cognitive activity of students [1].

Professional and pedagogical activity is done according to the algorithm, which includes: analysis of the initial situation, definition of training goals; planning of educational and professional activities, selection of



content and means of presentation (in various ways) of educational material fragments; implementation of operations that organize the professional and cognitive activities of students; organization of feedback, control and correction of activity on mastering the material content.

Professional and pedagogical activity is the determining factor for the success of professional training. However, this success also depends on the activity of the students. The learning process cannot be effective without the use of present-day methods and didactic means. In turn, the methods, forms and means of education are determined by the content of education and the level of personal and professional development of students.

Thus, the process of professional training is a whole pedagogical phenomenon. All its components are closely interrelated: the aims of education are embodied into the content of education, which will determine its methods, forms and means. In real pedagogical activity the process of vocational training is cyclical. Each of its didactic cycle is a functional system based on the joint activity of all subjects of the learning process [2].

At the university the traditional educational process gives the students an academic knowledge but the associating of this knowledge to specific professional activities occurs occasionally, for example, during the course, pre-diploma or industrial practice. It is clear that it is quite difficult to equip a student with the real professional knowledge and qualities in these conditions.

Innovative education is focused on the formation of professional knowledge and qualities in the process of mastering knowledge, for example, through electronic textbooks, where typical innovations to demonstrate the development of this professional field of activity are presented, and the professional tasks and situations are collected [3].

Thus, considering the above difficulties to graduate a transportation manager (insufficient practical training, inability to conduct the experiments on field facilities, retraining of graduates etc.), the only solution is to create innovative educational technologies in the universities taking into account the employers' requirements for the rapid specialist's adaptation to a professional environment and developing some advanced forms of education within an university.

The object of the research is to demonstrate the possibility of combining progressive educational methods within the innovative approach.

Study material presentation. Analysis of the teaching activities for the students under

the specialty 275 "Transportation technologies" and a piloting experiment in the form of questionnaires and interviewing students, employers and teachers of the graduating departments at the Faculty of Transportation Systems (Kharkiv National Automobile and Highway University) made it possible to identify the main innovative educational technologies that are necessary to create the successful motor transportation managers, namely [4]: implementation of the personal-oriented training technologies taking through the special features of transportation management specialists, and the development of virtual models of the working environment, i.e. use of software to simulate the future professional activity.

The use of innovative teaching methods is most appropriate for a person-oriented approach, since it assumes a "co-education", that is collective learning in cooperation where both students and the teacher are subjects of the learning process. Here the teacher often acts as the organizer of the learning process, the creator of the conditions to demonstrate the students' initiative. At the heart of interactive learning is the students' own experience, their direct interaction with the field of mastered professional skills. In addition, the use of interactive educational technologies suggests a slightly different logic of the educational process: not from theory to practice, but from the practical experience to its theoretical comprehension [5].

It is possible to reveal the following aspects of the use of interactive technologies in teaching determining its feasibility, necessity and importance: intensification of the process of understanding, assimilation and creative application of knowledge in solving some practical problems; increase in the level of motivation and involvement of participants in solving the problems under discussion, which gives an emotional impetus to the subsequent search activity of participants, encourages them to take concrete actions due to this the learning process becomes more meaningful; formation of the ability to think extraordinarily, in his own way, see the problem situation and its solving ways; carrying the transfer of methods of organizing activities, obtaining new experience of activity, its organization, communication; increase in knowledge, skills, disclosure of new opportunities for students; control over the level of mastering knowledge and the ability to apply the knowledge, skills obtained in various situations, etc.

The availability of a variety of forms and types of interactive technologies, the possibility of their use both in the process of conducting lecture and practical (seminar)



classes only confirms the need for their implementation. Thus, interactive methods of teaching can be playful (business game, role play, psychological training, etc.) and non-game (case study, group discussions, brainstorming, etc.). It is important to use in the learning process not one of the methods but their totality [6].

The innovative nature of educational technologies used in the teaching process in higher education is becoming one of the most important tools in the competitive struggle of higher education institutions in the present conditions. Introduction of innovations in educational activities, ultimately, will lead to an improvement in the quality of training of the future masters and bachelors. In turn, improving the quality, accessibility, effectiveness of education, its continuous and innovative character, the growth of social mobility and youth activity, its involvement in various educational environments make the education system an important factor in ensuring national security of the country and the welfare of its citizens.

Thus, the concept of professionalism becomes an integral quality of the graduate, which he synthesized himself in the process of his education. The student's awareness of himself as a professional influences the result of the educational process, as it activates the motivation for self-development, which, in turn, makes the learning process a source of meeting the needs of the developing personality.

Innovative education builds the training process as a movement from the social and general cultural knowledge and skills of the profession (from profession to culture) to technological ones that give it an understanding of the ways and methods of solving professional problems that allow monitoring the dynamics of changes in the quality of their professional activities (from technology to innovative thinking).

Innovative thinking is formed, if the student, firstly, is actively motivated in training, realizes the requirements of self-management, individual self-government to achieve ambitious (in a good sense of the word) life goals; secondly, if the educational process reflects the full life cycle of professional activity with its innovations and contradictions [7].

All of the above allows us to conclude that the leading functions of innovative education can be considered: intensive development of the personality of the student and teacher; democratization of their joint activities and communication; humanization of the educational process; focus on creative teaching and active teaching and the initiative of the student in shaping himself as a future pro-

fessional; modernization of means, methods, technologies and material resources.

An example of training technology that contributes to the formation of innovative thinking of the future professional is the use of virtual models of the professional environment. The virtual environment makes it possible to feel the student in the role of an official directly in practice in the very process of learning with self-evaluation of actions and testing the level of theoretical knowledge. The virtual environment allows moving from simple assessments of the impact of the production environment to manage and minimize these impacts, to eliminate the consequences with estimates of economic damage. In this we see the main positive qualities of learning with immersion in a virtual professional environment.

The role of independent preparation of students increases significantly with the inclusion of computers in the learning process for obtaining and experimental verification of knowledge. The most important advantage of computer technology is the possibility of constructing an educational process in the form of interactive work of students with dynamic images of the studied objects.

At the Department of Transport Technologies at the KhNADU, the interactive forms are being introduced into the process of special disciplines teaching such as "Introduction to the specialty", "Transportation commercial activity", "Forwarding activities", "Freight transportation", "Passenger transportation" and "Motor transportation management". The peculiarity of the teaching is that, with minimal classroom time, students should be provided with educational material in the most convenient form.

For example, when considering a number of topics within the discipline "Freight transportation", students are faced with the tasks that require thorough study of the material. An interactive approach allows providing a representation of the real professional activity conditions through the training models. One of the elements of the conditions is communication in a quasi-professional environment, which can be created within the laboratory studies using the "Imit" software. This software product is an information space that provides the rolling stock scheduling per a working day. With it, in the car releasing, the time to perform the various transportation process operations, speed, time of departure and return to the enterprise can be simulated. With its help it is possible to develop the different "in-process" situations. The program interface allows selecting a configuration that matches the solution of a specific task. Varying the initial data, it is possible to simulate



the various situations that arise in the truck operation and analyze them in view of making some managerial decisions. Moreover, this software is a configurable product that is open to various changes and additions. In the laboratory classes, the typical tasks with a detailed decision algorithm are considered, when students gradually learn how to work with the interface and understand the logic of the program.

After passing this stage, the knowledge obtained is checked via the fulfilling an independent task with the report writing. This is a kind of research conducted by each student individually within the classroom laboratory. If the student has done all the typical tasks for the finished algorithm, it is considered that he developed the performing abilities at a satisfactory level, and the student is ready to solve more complex problems.

Thus, the interactive methods to conduct the classes rely on motivating students to professional skills, developing abilities for professional and computer activities. Motivation depends on the value orientation, general culture, ability to critically comprehend the situation, personal volitional qualities. During the classes with the "Imit" program, participants use the practical tools necessary for good management, creating a trusting atmosphere for communication and developing managerial solutions to improve the motor transport efficiency.

Conclusions. Thus, the innovative training is one of the most important directions in the search for new forms of creating conditions for self-realization and development of the students. Self-realization of students in the process of studying special disciplines is possible through various methods. The use of

interactive technologies such as personal-oriented education and creation a virtual workspace promotes the better "teacher-student" interaction in the information field, joint activity and active development of trainees. Therefore, presently, the innovative teaching technologies are the most effective form of mutual understanding between the teacher and the students to prepare a competitive and competent specialist in response of the current labor market demand.

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