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FORMATION OF OCCUPATIONAL SAFETY COMPETENCE IN FUTURE ENGINEERS

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Abstract:
The article presents analytical information on the meaning and areas of use of the terms competence and competence, components of the professional competence of an engineer. The role of occupational safety competence in the development of the professional competence of an engineer and the requirements for developing its model are discussed.

Keywords: Competence, competence, approach, professional, occupational safety, model, knowledge, skills, motive.

Introduction

Competency approach in the educational system is a complex and multifaceted process, and it is an area that has not been fully explored to date. Currently, the concepts of "competence" and "competence" are widely used in theoretical and applied research in the field of engineering, and the existence of different approaches to these concepts causes differences in the definitions of these concepts by different scientists.

The term "competence" is more commonly used in the UK and refers to the performance of a professional.

The term "competence" is used in the USA and refers to the abilities and personal characteristics that determine the character of a specialist. It is understood that the personal characteristics and abilities of a specialist ensure their successful work in their field. These scientists consider these terms as complementary terms,

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defining them as the final result of education in the relevant field and various personal and educational characteristics of a person.

The concept of "competence" in England is defined as the results of a specialist's activities. Here, the types of activities of a specialist in achieving the specified professional results are considered as the main components of competence, that is, it is assumed that the employee fully meets the description of his professional position.

The occupational safety competence of engineers is fundamentally different from professional competence. Because an engineer, along with the operation and management of technological processes, also manages the human factor and is responsible for the safety of their vital activities. This leads to the issue of the formation and development of occupational safety competence in future engineers, which is inextricably linked with professional competence.

RESEARCH METHODS

The study used analytical, predictive, comparative and statistical analysis methods, as well as empirical methods: questionnaires, observation, test questions, interviews, open-ended ideas, and analysis of experimental test results.

RESULTS AND DISCUSSIONS

In accordance with the conditions for the formation of occupational safety competence of engineers, based on the analysis of scientific research by our country and foreign scientists in the field of the competency approach, engineering competence is defined as follows: "The professional competence of an engineer is assessed by the knowledge, skills, worldview and leadership potential of the employee necessary to carry out his professional activities at a high level, and in some cases also includes motives, beliefs and values." Therefore, we can include the following in the main characteristics of engineering competence:

1. Considering the personal characteristics of the engineer (knowledge, skills, motives, worldview, beliefs, values, etc.) as the main component of competence
2. The ability to perform his professional activities at a high level
3. Perceiving the components of competence as general, not for a specific enterprise or a specific person.

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4. The integrated reflection of occupational safety and environmental components.

Competence can be defined as a set of knowledge in a certain field that has a significant impact on the professional and life activities of an engineer, is associated with the level of performance of professional duties, is assessed according to accepted standards and is developed through education. In this definition of competence, the main attention is paid to the set of knowledge, but it should be noted that knowledge and skills alone are not the basis for assessing a person as a competent specialist. Therefore, the ability to competently apply theoretical knowledge and practical skills acquired during the education process in professional activities is also required. The use of the phrase "assessed according to standards" in the definition implies an assessment of the theoretical knowledge and practical skills of a specialist or their work activity or on the basis of specific established criteria (standards, regulations, etc.). Therefore, this definition differs from other definitions in that the assessment results make it possible to select an employee or predict his future activities. In addition, an engineer's professional competence is also assessed by their ability to manage standard and non-standard situations and ensure occupational safety.

he model of formation of occupational safety competence of an engineer is a scheme of organization of the educational process aimed at the formation of competence and is widely used in pedagogy as a theoretical method. This method is considered integrative and allows to draw conclusions by generalizing the empirical and theoretical elements of pedagogical research.

R.Kh. Dzhuraev defines pedagogical modeling as "a model for the development and creation of pedagogical systems, situations or processes and ways to achieve them, in which not the object under study itself, but its scheme in the form of a model is studied, and the results of the research are tested on the object" [1].

M.V. Goryacheva [2] , S.V. Omelchenko [3], T.A. Khainovskoy [4] recognize that the main task of the structural-functional model in pedagogical research is to reveal the relationship between the structure of the object under study and its functions. The model must reflect the functional and structural components of the object.

One of the main methodological principles of model development is a systematic approach. It is necessary to reflect the interrelationship of individual independent elements of the model with each other.

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In the structural-functional model of the formation of information competence in students of pedagogical universities, developed by O.N. Griban [5], the interrelated elements consist of normative, target-predictive, technological, methodological, organizational-functional and result blocks.

These components V.V. Bondar, O.N. Gribanom, A.N. Zavyalovym, E.F. Morkovinoy, A.A. Temerbekovoy, S.V. Trishinoy, A.L. The information of scientists like Semenova corresponds to the composition of the blocks of competence. The author says that the information competence of students of pedagogical higher educational institutions should consist of the use of standard means of information processing, the organization of the educational process with the help of computer technology, and the terminological competences related to their field.

M.V. Goryacheva's model of formation of information competence in the process of independent work of future specialists outside the audience was developed on the basis of competence, activity, technological, person-oriented and systematic approach to education [2].

E.F. Zeer [5] defines the competence approach as the essence of the modernization process of education, defining a goal-oriented educational vector that includes the ability to learn, self-determination, self-understanding and development, socialization and development of individuality. Research on the functional development of professional competence has shown that during the process of achieving professional maturity, various forms of competence are integrated and their connection with professionally important personal qualities is strengthened.

Most modern models of the competency approach in education are based on an activity-oriented approach. In regulatory documents such as the State Educational Standard, qualification requirements and curricula, the content of education is mainly aimed at the formation of general theoretical knowledge and skills in future specialists as a result of educational, cognitive, communicative, practical, creative activities.

The issues of the technological approach in the formation of occupational safety competence were assessed in their scientific and methodological works by V.P. Bespalko [6], E.S. Polat [7] with the level of widespread use of information and communication technologies in managing the educational process and achieving goals.

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Alekseev N.A., Bondarevskaya E.V., Klarin M.V., Serikov V.V., Yakimanskaya I.S. paid more attention to the issues of personally oriented activities in their research. This technology, through an individual approach to each student, creates an opportunity for the student to understand his own personality, form self-development and self-assessment abilities. The formation of information competence through personally oriented activities in computer classrooms can be carried out by at least 2 methods, namely traditional and innovative. In the traditional method, the teacher works directly with each student, points out his shortcomings, and encourages him for his achievements. In the formation of information literacy through an innovative method of personalized educational technology, special programs are installed on the computer and monitor the student's individual activity on the computer through his own computer, provide advice, and this method also includes feedback, that is, the student can also ask the teacher questions.

CONCLUSION

The above-mentioned information is based on the traditional educational process in higher education in scientific research on the formation of competence. The issues of forming and developing occupational safety competence in combination with the professional competence of an engineer in a distance learning environment are not covered, but the studies of V.I. Baidenko, O.V. Zaslavskaya, E.I. Kazakova, I.B. Novikov, Z.A. Reshetova show the formation of competence based on a systematic approach.

The requirements of the information society and the lack of a systematic and clear approach to the problems of forming and developing occupational safety competence in future engineers in an information education environment based on distance learning. Therefore, a comprehensive study of the problems of developing occupational safety competence in future engineers along with professional competence and the development of its improved model are one of the urgent issues.

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