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Формування ноксологічної культури у студентів за викладання охорони праці та безпеки життєдіяльності в педагогічних закладах вищої освіти

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Анотація. Формування ноксологічної культури у студентів педагогічних закладів освіти є актуальною проблемою, оскільки пов'язана зі станом захисту особистості та суспільства від внутрішніх та зовнішніх загроз у повсякденному житті. Мета роботи полягала у здійсненні аналізу дисципліни «Охорона праці та безпека життєдіяльності», що відіграє важливу роль у розумінні потенційних небезпек, пов'язаних із діяльністю людини та формує ризик-орієнтоване мислення. У процесі дослідження для встановлення взаємозв'язку ноксологічної культури з безпекою життєдіяльності майбутніх педагогів були використані такі методи: елементарно-теоретичний аналіз та синтез фактичного матеріалу, аксіоматичний метод та узагальнення. Розглянуто поняття ноксології та ноксологічної культури особистості. Унаслідок проведеного дослідження було визначено, що ноксологічна культура є важливим структурним компонентом безпеки життєдіяльності, а також є невід'ємною складовою професійної культури кожного майбутнього фахівця. Визначено важливу роль дисципліни «Охорона праці та безпека життєдіяльності» під час формування ноксологічної культури студентів. Розглянуто складові ноксологічної компетентності. Розкрито вагому роль педагогічної вищої освіти у процесі формування науково-обґрунтованих критеріїв можливого ризику. А вивчення згаданої вище дисципліни формує систему знань про характер небезпек, їхні особливості та способи зниження ризику та їх виникнення

Ключові слова: державні освітні стандарти, ризик-орієнтований світогляд, культура безпеки, вдосконалення навчального процесу, ноксологічна компетентність

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Development of Noxological Culture Among Students for Teaching Occupational Safety and Health and Wellness in Pedagogical Institutions of Higher Education

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Abstract. The development of noxological culture among students of pedagogical educational institutions is an urgent problem since it is associated with the state of protection of the individual and society from internal and external threats in everyday life. The purpose of the study was to analyse the discipline "Occupational Safety and Health and Wellness", which plays an important role in understanding potential dangers associated with human activity and forms risk-oriented thinking. In the course of the study, the following methods were used to establish the relationship of noxological culture with the health and wellness of future teachers: elementary theoretical analysis and synthesis of factual material, axiomatic method, and generalisation. The concepts of noxology and noxological culture of the individual were considered. As a result of the study, it was determined that noxological culture is an important structural component of health and wellness, and is also an integral component of the professional culture of each future specialist. The important role of the discipline "Occupational Safety and Health and Wellness" in the development of students' noxological culture was determined. The components of noxological competence were considered. The study covered an important role of pedagogical higher education in forming scientifically sound criteria for possible risk. The study of the above-mentioned discipline forms a system of knowledge about the nature of dangers, their features and ways to reduce risk and their occurrence

Keywords: state educational standards, risk-based worldview, safety culture, improvement of the educational process, noxological competence

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INTRODUCTION

Noxological culture, as a certain state of development of a person, social group, society, characterised by an attitude to the issues of creating a safe life and work and, most importantly, active practical activities to reduce the level of danger, requires the development throughout a person's life, but an important period is occupied by the process of professional training in higher education institutions. Improving the quality of safety education helps to reduce the risk of initiating emergencies, reduce

the number of victims, and reduce material damage. Education and upbringing in the field of health and wellness should ensure the development of new thinking, holistic knowledge, and practical skills that students need to make informed decisions at the individual, family, society, and state levels.

The development of noxological culture of students of higher education pedagogical institutions is one of the most important goals in the implementation of

state educational standards. Ukraine is characterised by a number of complex and contradictory processes related to changes in established socio-political and economic relations, changes in previous value priorities. The loss of conventional values and the blurring of the teacher's noxological culture are reflected in society, manifested in the practice of modern pedagogical education. In the current conditions, the development and implementation of training of a noxologically-educated teacher, which is based on the experience of professional and personal development of the future teacher's personality, is of particular importance.

The strategic role of the education system is the development of noxological (safe) thinking of a person in the context of the development of his responsibility for the safety and viability of society. Safety culture is a social phenomenon. It was represented in ideology, religion, science, art, mythology, and sports [1]. At the same time, in the personal embodiment, the safety of life as a characteristic of a person with his activities is not the same. Safe life is a life in accordance with safety laws, for example, prevention, minimisation, overcoming, elimination of the consequences of harmful and dangerous factors. At the same time, as a culture of personal safety, it contains a number of other components, such as motivation, experience of readiness for a safe life [2].

The definition of the term "danger" does not formally indicate the need to accord the coordinates and time of transmission of dangerous flows from the source to the object. But this is not necessary, because the entire material world around a person, human communities, etc. are dangerous. Therefore, it can be argued that the probability of danger in relation to other material objects exists always and everywhere [3]. Daily manifestations of emergency situations in various spheres of human activity demonstrate the relevance and urgency of the problem. Usually, dangerous situations arise due to a range of reasons: technical, organisational, and personal. Ignoring or not knowing safety requirements leads to human losses, disabilities, financial and infrastructure costs, or long-term and serious consequences. Noxological culture should become part of the student's worldview, a natural need that will allow safely interacting with all the structural elements of the household, industrial, and natural environment, improve the quality of life and guarantee the necessary level of safety during the performance of work duties. The development of noxological culture in pedagogical institutions of higher education is possible during the study of the discipline "Fundamentals of Occupational Safety and Health and Wellness" by students.

The problem of forming a noxological culture is quite new for Ukrainian higher education, as is the

branch of knowledge itself – noxology. The analysis of the phenomenon of noxological culture is presented in the works of a number of foreign scientists: E. Antokhin, M. Sula developed the concept of teaching students' health and wellness [4]; O. Gazman considered the issue of forming a basic culture of personality in the educational process [5]; V. Davisilov studied the didactic foundations of noxological education [6]. Fragmentary study of the issue of noxological education occurs in the works of Ukrainian scientists: Yu. Boychuk, I. Avdeenko, A. Turchynov [7], V. Gorashchuk [8]. However, the study of the development of noxological culture of future specialists in the pedagogical sphere is understudied.

The purpose of the study is an analysis of the discipline "Occupational Safety and Health and Wellness", which plays an important role in the development of the noxological culture of students – future teachers in the process of professional training.

METHODOLOGY

The methodological basis of this research is theoretical methods of scientific knowledge. In particular, the method of information analysis and synthesis, the axiomatic method, and generalisation were used. The collection and analysis of literature sources on the topic is the first stage of research, during which the content, structure, properties, internal and external relationship of the object of noxological culture with occupational safety and health and wellness was studied. Analysis is the basis for further synthesis of information.

Using the method of elementary theoretical analysis and synthesis of actual material, it was determined that noxological culture as a system-forming factor consists of: the development of knowledge and skills regarding safe coexistence with the environment; the development of an internal objective to ensure one's own safety and safety of the surrounding world; the development of safe behavioural stereotypes; the development of values and qualities of the individual in the field of health and wellness. In addition, owing to the use of the axiomatic method in the course of research, the concepts of "noxology", "noxological culture of personality", "noxological worldview", and "noxological competence" were defined. The purpose of noxology was also defined. The components of the student's noxological competence were considered and graphically shown in Figure 1. According to this method, the initial provisions were the works of Ukrainian and foreign scientists.

Important materials that considerably influenced the results of the study were scientific papers [9-12]. Theoretical substantiation of the noxological approach to determining the mechanisms of countering the risks of modern danger; creation of a conceptual model of the

noxological approach to countering the risks of modern dangers in the preservation of the environment and the safety of human life [9] – important aspects of the topic that need to be paid attention to when introducing the discipline “Occupational Safety and Health and Wellness”.

The analysis of the study aimed at identifying the possibilities of using moderation technology in the development of noxological culture, as well as studying the content of the concept, problems of using moderation technology in the educational process is important in the development of personality as a moderator, which helps to develop risk-oriented thinking [10; 11]. The development and implementation of noxologically oriented teacher training is a necessity for the development of society. This is confirmed by the study of the paper [12]. The authors note that the development of a noxological culture in the process of professional training in a higher educational institution is a condition for minimising social risks. Owing to the generalisation method the interdependence of noxological culture with occupational safety and health and wellness was recreated.

RESULTS AND DISCUSSION

The term “noxology” is quite new. In scientific and then educational terminology, it appeared only in the last decade. The term itself is formed from two words: *noxious* (Greek) – harmful, unhealthy, and *logos* (Greek) – a term of ancient Greek philosophy, meaning simultaneously “word”, “language”, “meaning”, “concept”, “foundation” [13]. Noxology is the study of the dangers of the world around us. The subject of the study of noxology is the noxosphere – the sphere of dangers. The purpose of noxology is to deepen and develop knowledge about the security system in the face of negative factors of the technosphere, as well as to form skills in the practical use of knowledge to create safe conditions in the implementation of professional activities [14]. Noxology acts as a new and in many ways unique phenomenon in science and education, represents a scientific and educational field that requires large-scale integration, diverse knowledge about the world around us, containing socio-humanitarian, natural science and technical and technological knowledge, the totality of which can form an idea of human interaction with the environment, mechanisms for the development of dangers of various nature and cause-and-effect relationships that determine the level of risk. A person is not only an object of danger, but also a subject that generates it.

The integral systemic nature of the science of noxology today is at the stage of development and induction period of integration of philosophical, humanitarian, social, natural-scientific, technical and technological knowledge about the modern world. In the conditions of

modern development of society, the need to improve the effectiveness of teacher training causes an urgent study of the issue of his personal training, from the point of view of noxological orientation as an essential characteristic of teacher activity, stated in the concept of modernisation of education. Analysis of the current state of education and upbringing in educational institutions shows that this trend should remain a characteristic feature of teacher training in the future [6]. Noxological culture of the individual is a set of norms, views and attitudes that characterise the individual's attitude to danger, risk, personal, public, and national safety. Noxological culture of society is a totality of joint views and beliefs for all members of society and its social groups concerning the danger to life and activities, risk, accidents and threats to health, beliefs, norms, attitudes, and achievements of social and technological practices focused on minimising risk. Noxological worldview (risk-oriented worldview) – an integral system of views on the world and the place of a person in it, on the attitude of a person to the surrounding reality and to himself, as well as the life positions of people, their ideals, beliefs, principles of knowledge of reality, value orientations caused by these views, in which security issues are considered as priorities in human life and activity.

Some scientists believe that noxology includes knowledge on health and wellness, occupational safety, and environmental protection [14]. Modern professional pedagogical education is going through the next stage of reform, where the whole educational system is being modernised on the model of the Western educational system. The introduction of state standards of higher professional education, the educational degree “Bachelor” is a confirmation of the reform of higher education. As a result of this reform, it is becoming more complicated not only to manage the educational process in a modern higher education institution, but also to preserve the conventional noxological orientations of teachers. The main role in the development of noxological culture in educational and professional programmes is assigned to the discipline “Occupational Safety and Health and Wellness”, which is a system of norms, ideas, attitudes of an individual that characterise his attitude to the whole complex of dangers, risks, his view on the importance of personal, public, and national safety. According to this, noxological education is a process of education, training and self-development of a student's personality, aimed at forming norms of human behaviour, his worldview and forming competences to ensure the safety of life of both an individual and society.

Despite the indisputable importance of the problem of safety, the total volume of the discipline “Fundamentals of Occupational Safety and Health and Wellness”

is constantly decreasing. The total number of hours for in-class learning has been considerably reduced, laboratory work is being reduced, and for some specialisations it is completely excluded. In the Bachelor's degree curricula, most specialisations do not include the disciplines "Health and Wellness" and "Fundamentals of Occupational Safety". The content of these disciplines is the foundation for the development of students' content part of subject training disciplines (noxological knowledge). However, an integrated discipline "Occupational Safety and Health and Wellness" has been introduced with a minimum number of credits. These trends clearly do not increase the effectiveness of the development of noxological culture of students of higher educational institutions. It can be stated that a reduction in training sessions in this discipline cannot lead to an increase in the level of safety either in everyday life or in the course of professional activity. The process of forming a noxological culture within the higher education system during the reform of higher education is also complicated by the general psychological atmosphere in the country, the state of public and legal order, public discipline, legal awareness, and legal culture of the population [1].

Noxological education has a pronounced anthropocentric orientation since danger exists only if there is an object that can be harmed and that requires protection. Such an object is a person whose life and health are a priority in society. At all times, and especially now, the task of science and human activity has been to improve human life, create the most comfortable and safe environment for it, and the task of education is to master this science and experience of activity and educate a person

who is able to understand the meaning and importance of his life and is ready for productive activities [11]. The noxological competencies acquired in this process can be defined as knowledge, skills in the field of hazard identification, risk reduction and safety, as well as readiness and ability to apply them in everyday life and professional activities. In this context, noxological competence is an integral characteristic of a person, determined by his noxological culture, noxological worldview, and the level of noxological competences.

Noxological culture in the system of teacher training is manifested in the readiness and ability of the individual to use in professional activities the acquired set of knowledge, skills, and abilities to ensure safety in the field of professional activity, in the nature of thinking, in which security issues are considered as a priority [14]. The development of a noxological culture, risk-based worldview, and noxological competence is a cardinal way to improve safety and ensure sustainable development in a global risk society. The main problem of noxological education today remains the lack of such a theoretical justification that could be the basis for the development of its content.

Considering the above, the student's noxological competence is determined by three components (Fig. 1). The first component describes the development of a motivational component that encourages the implementation of the principles of ensuring human safety in the technosphere; the second determines the availability of basic theoretical knowledge of dangers and safety principles; the third forms the readiness and experience of practical activities to use the acquired knowledge.

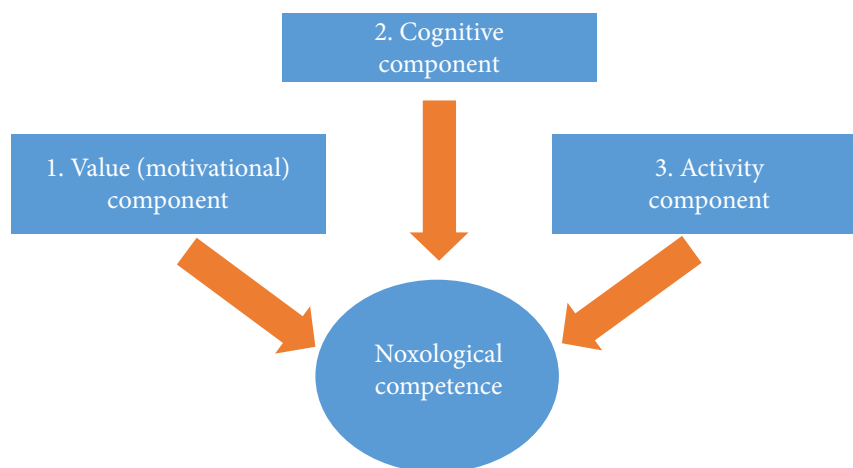


Figure 1. Components of a student's noxological competence

The value (motivational) component of noxological competence, which is a set of motives that encourage a person to successfully implement further professional activities, is especially important, since a person can

perform the same work with different efforts, diligence, perseverance, orientation, responsibility. The development of the cognitive component is based on the introduction into the educational process of a special additional group

of knowledge of the theoretical foundations of the world of dangers and the principles of safety of protection objects, which include knowledge about the stages of development of the technosphere as the main source of the highest levels of dangers in the modern world, knowledge of the theoretical foundations of environmental hazards (essence, causes and conditions of occurrence, taxonomy, types, principles of action, mechanisms of influence, results of influence, etc.), knowledge of theoretical principles of security (essence, main objects of protection, security conditions, general theory of protection). The presence of this group of knowledge in the educational programme fully corresponds to the current state of the science of human health and wellness in the technosphere [15]. The activity component of noxological competence is expressed in the readiness and experience of identifying an integral picture of the dangers of certain types of professional and educational activities, the ability to independently creatively solve tasks, build optimal, rational algorithms of actions [16].

In the presented study [9], the authors tried to create a theoretical model of the noxological approach to countering the risks of modern dangers in the preservation of the environment and the safety of human life. The main concepts of the noxological approach as an independent scientific area were systematised; regularities and sources of emergency situations were established; the taxonomy of hazards was determined; the prototype of the danger passport was justified. This research can be used for universities, teachers, and students. In this paper, the model of the noxological approach to environmental protection and human health and wellness was studied: risks of modern hazards were presented exhaustively.

The authors of the study [10-11] note that one of the pedagogical terms for the development of noxological culture in the framework of the implementation of a competence-oriented approach is the use of interactive educational technologies. Moderation is an effective technology of interaction between the subject of education, where the teacher is the moderator of the educational process, creating a safe and comfortable educational environment. High-quality performance of this role is the basis for the success of the entire educational process and the achievement of educational goals. According to this, it is important to identify the possibilities of applying moderation technology in the development of noxological culture. The study considers recommendations for implementing moderation techniques. The paper can be used by teachers of higher educational institutions in the process of preparing students of pedagogical specialisations.

The authors of the following study [12] note that

the democratisation of society is directly related to the construction of a state governed by the rule of law. Factors contributing to social risk undermine democratic principles. Professional training in a higher educational institution is focused on activities under certain political and social conditions. Teaching in higher educational institutions should become a stage of transformation of professional activity in conditions of social risk. Preparation for professional activity in conditions of social risk should be carried out by studying risk factors, integrating risk-oriented training, searching for and implementing an effective form of training, issues of legal and noxological culture of teachers and students.

The development of a noxological culture in the process of professional training in a higher educational institution becomes a condition for minimising social risks. The development and implementation of noxologically oriented teacher training is a necessary condition for the development of society. The competitiveness of graduates of higher educational institutions should mainly ensure a focus on preserving the life and health of their students, that is, the future generation of the country. Therefore, this once again proves the reasonableness of studying the discipline on occupational safety and health and wellness. Considering the above, the teacher, using innovations, will develop innovative thinking of students, fulfilling their abilities, and also contribute to the development of a risk-oriented worldview.

CONCLUSIONS

As a result of the study, it was established that education and upbringing in the field of health and wellness should ensure the development of risk-based thinking and increase responsibility for health and wellness at the level of the individual, family, society, and the state. Noxological culture is the main component in the development of the individual, and it also plays an important role in the professional culture of the future specialist, which is not inherited, but is formed, recognised, and instilled during the professional training of the future teacher. Noxological culture is a certain state of development of a person, social group, society, characterised by a responsible attitude to ensuring a safe life and work. A considerable period of development of such a culture is occupied by the process of professional training in higher educational institutions due to the study of the discipline on occupational safety and health and wellness.

The results of this study can be used as a basis for further research, in particular, for the development of curricula and methodological recommendations for teachers of the discipline "Fundamentals of Occupational Safety and Health and Wellness".

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