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Formation of valeological competence in non-medical students

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Abstract. Competence approach is generally accepted in modern education. Competence is the ability to perform a variety of practical tasks in life and professional activities at a sufficient professional level, which is due to cognitive abilities and skills, social interaction, motivation and will. There are lingual, informational (digital), communicational, cultural, ecological, valeological (health saving) and other competencies should be formed in the student, regardless of the profile of his education. In Ukrainian legislation, valeological competence is referred to the category of "civic and social competences". Valeological competence in educational standards given less importance than, for example, ecological competence. We have not found a clear definition of valeological competence. In our opinion, valeological competence is the ability to lead a healthy lifestyle, practice safe behavior and provide emergency care. For its formation in students of non-medical higher educational institutions we have proposed the initial academic discipline "Health Pedagogy". The study is theoretical, based on the analysis of scientific sources and regulations of Ukraine, including national educational standards. Preliminary data on the introduction of the author's program of the discipline "Pedagogy of Health" in the educational process of the Ukrainian Engineering Pedagogics Academy for students of "011 - Educational, Pedagogical Sciences" specialty "Bachelor" and "Master" educational levels are also taken into account. Requirements for valeological competence formation in non-medical students on accordance with the level of education, the proposed components of the curriculum and components of competence (cognitive, activity, motivational-value and personal) are formulated. The author's definition of valeological competence is supplemented with a list of its components subject to qualimetric assessment. The list of competencies, necessary for the valeological competence formation, as well as those competencies that are formed or improved simultaneously with the valeological competence during the study of valeological discipline "Health Pedagogy" by non-medical students.

Key words: competence approach to education, higher education standards in Ukraine, structure of valeological competence.

Формування валеологічної компетентності у студентів немедичного профілю навчання

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Анотація. Компетентнісний підхід є загально прийнятим у сучасній освіті. Компетентністю є спроможність виконувати варіативні практичні завдання у житті та професійній діяльності на достатньому професійному рівні, який обумовлений когнітивними здібностями та навичками, соціальною взаємодією, мотивацією та волею. Серед існуючих компетентностей, які мають бути сформованими у здобувача освіти, незалежно від профілю його навчання, є мовна, інформаційно-комунікаційна, загальнокультурна, екологічна, валеологічна (здоров'язбережувальна) та інші компетентності. В українському законодавстві валеологічна компетентність віднесена до категорії «громадянські та соціальні компетентності», в освітніх стандартах їй надається менше значення, чим, наприклад екологічній компетентності. Чітке визначення валеологічної компетентності нами не знайдене. На нашу думку, валеологічна компетентність – це спроможність вести здоровий спосіб життя, практикувати безпечну поведінку та надавати невідкладну допомогу. Для її формування у студентів немедичних вищих навчальних закладів вищої освіти нами запропонована начальна дисципліна «Педагогіка здоров'я». Дослідження є теоретичним, ґрунтується на аналізі наукових джерел та нормативно-правових актів України, у тому числі національних освітніх стандартів. Враховані також попередні дані щодо впровадження

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авторської програми дисципліни «Педагогіка здоров'я» у навчальний процес Української інженерно-педагогічної академії для студентів спеціальності «011 – Освітні, педагогічні науки» рівнів освіти «бакалавр» та «магістр». Сформульовані вимоги щодо формування валеологічної компетентності студентів немедицинського профілю навчання відповідно до рівню освіти, запропонованих компонентів навчальної програми та складових компетентності (когнітивної, діяльнісної, мотиваційно-ціннісної та особистісної). Надане авторське визначення валеологічної компетентності доповнене списком її компонентів, які підлягають кваліметричній оцінці. Визначено перелік компетентностей, які є необхідною умовою для формування валеологічної компетентності, а також тих компетентностей, які формуються або вдосконалюються одночасно з валеологічної під час вивчення валеологічної дисципліни «Педагогіка здоров'я» студентами немедицинського профілю навчання.

Ключові слова: компетентнісний підхід до навчання, стандарти вищої освіти України, структура валеологічної компетентності.

Формирование валеологической компетентности у студентов немедицинского профиля обучения

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Аннотация. Компетентностный подход является общепринятым в современном образовании. Компетентностью называют способность выполнять вариативные практические задачи в жизни и профессиональной деятельности на достаточном профессиональном уровне, который обусловлен когнитивными способностями и навыками, социальным взаимодействием, мотивацией и волей. Среди существующих компетенций, которые должны быть сформированными у студента независимо от профиля его обучения, есть языковая, информационно-коммуникационная, общекультурная, экологическая, валеологическая (здоровьезберегающая) и другие компетентности. В украинском законодательстве валеологическая компетентность отнесена к категории «гражданские и социальные компетентности», в образовательных стандартах ей предается меньшее значение, чем, например, экологической компетентности. Четкое определение валеологической компетентности нами не найдено. По нашему мнению, валеологическая компетентность – это способность вести здоровый образ жизни, практиковать безопасное поведение и оказывать неотложную помощь. Для ее формирования у студентов немедицинских высших учебных заведений высшего образования нами предложена учебная дисциплина «Педагогика здоровья». Наше исследование является теоретическим (основывается на анализе научных источников и нормативно-правовых актов Украины, в том числе национальных образовательных стандартов), но нами также учтены предварительные данные по внедрению авторской программы дисциплины «Педагогика здоровья» в учебный процесс Украинской инженерно-педагогической академии для студентов специальности «011 – Образовательные, педагогические науки» уровней образования «бакалавр» и «магистр». Сформулированы требования по формированию валеологической компетентности студентов немедицинского профиля обучения в соответствии с уровнями образования, предложенными компонентами учебной программы и составляющих компетентности (когнитивной, деятельностной, мотивационно-ценностной и личностной). Авторское определение валеологической компетентности дополнено списком ее компонентов, подлежащих кваліметричній оцінці. Определен перечень компетентностей, которые являются необходимым условием для формирования валеологической компетентности, а также список тех компетенций, которые формируются или совершенствуются одновременно с валеологической компетентностью при изучении валеологической дисциплины «Педагогика здоровья» студентами немедицинского профиля обучения.

Ключевые слова: компетентностный подход к обучению, стандарты высшего образования Украины, структура валеологической компетентности.

I Introduction

Competence approach is generally accepted in modern education, both for primary education in schools and higher education, and for lifelong learning [1-3]. The competence approach is covered in the most detailed special pedagogical sources, and during adaptation to all existing specialties by concluding educational standards there can be mechanical repetitions of the made definitions which dissonant with the maintenance of these specialties [4; 5]. *Competence* is the ability to perform a variety of practical tasks in life and professional activities at a sufficient professional level, which is due to cognitive abilities and skills, social interaction, motivation and will [6].

According to the Law of Ukraine "On Education" [7], "competence – a dynamic combination of knowledge, skills, abilities, ways of thinking, views, values, other personal qualities that determine a person's ability to successfully socialize, conduct professional and/or further educational activities". According to the Law of Ukraine "On Higher Education" [8], "competence – the ability of a person to successfully socialize, learn, conduct professional activities, which arises on the basis of a dynamic combination of knowledge, skills, ways of thinking, views, values and other personal qualities". The educational process requires students in Ukraine to be fluent in the language of instruction, to be ready to learn throughout life, regardless of the profile of study to develop information and communication, cultural, competence, innovation, financial literacy, environmental competence, civic and social competences, "related to ideas democracy, justice, equality, human rights, prosperity and a healthy lifestyle, with an awareness of equal rights and opportunities". The Law also provides for "other competencies" defined by educational standards. For example, competencies in the field of natural sciences, engineering and technology, mathematical competence and others.

The relationship between competencies and educational standards has been studied in detail in European and North American scientific sources. Thus, R. Münch (2012) [9], states that because competencies are skills, and standards describe the level of achievement that is applied to knowledge and skills, these two concepts are often identified. At the same time, the definition of the content of competencies takes years. As there are no definitions of competencies that clearly reflect their content, their components are described in the context of standards [10]. In the context of health care, such components are often considered to be the absence of bad habits, protection from adverse environmental influences and sufficient physical activity. Instead of maintaining mental health, spiritual development is considered a component, instead of the need for a fully balanced diet – the rejection of fast food and GMOs. The disadvantage of identifying competence and educational standard is considered to be the subordination of competence to the standard. Also, the educational standards try to include those components of competence that are easy to model and measure [11; 12].

In different scientific sources and regulatory acts there are different definitions of competence, and the competences themselves belong to different classification groups. The Ukrainian educational standards [13] define the competencies that must be formed in students in accordance with the specialty and educational level – "bachelor" or "master". We did not find a clear and unambiguous definition of valeological competence in any normative act. In scientific sources, the definition and content of valeological (health saving) competence depends on the researcher's point of view, his education and teaching profile. Olle ten Cate (2017) believes [14] that valeological competence in medical students is formed in a mandatory manner in accordance with the curriculum and ethical attitudes. The formation of valeological competence in this case should be distinguished from *diagnostic*, *treatment* and *prophylactic* competencies aimed at patients [15]. It should also be borne in mind that educational standards on the main clinical specialties have not yet been approved by the Ministry of Education and Science of Ukraine. The question of the content of valeological competence and the success of its formation in non-medical students is considered insufficiently studied [16], which allows us to determine the purpose of our study.

Purpose of the study: to characterize the valeological competence of non-medical students of Ukrainian higher education institutions, to determine its components, conditions and normative principles of formation, the relationship with other competencies.

II Material and research methods

The research materials were scientific publications (monographs, dissertations and articles) on pedagogy, orders of the Ministry of Education and Science of Ukraine, the Higher Attestation Commission of Ukraine, the Constitution of Ukraine, laws of Ukraine on science and education, 196 national standards of higher education (among which 34 belonged on education as the main scope, 14 – on security, guard, including the military, law enforcement, rescue and civil defense, 11 – on health care), World Health Organization's documents.

The study was conducted in accordance with the Passport of the specialty "13.00.01 – General Pedagogy and History of Pedagogy" [17], which regulates its directions and methodology, provides (among others) theoretical (fundamental and comparative) studies, study of domestic and foreign pedagogical achievements, patterns of pedagogical process, the structure of scientific knowledge, educational systems,

conceptual apparatus, values and philosophy of education, world trends in education and pedagogical science, the unity and differences of pedagogical science and practice, worldviews of modern youth.

The study was conducted by the method of system analysis with large-scale detailing by E.P. Golubkov [18], which provides a sequence of actions of the researcher: problem statement → research → analysis → preliminary judgment → confirmation → final judgment → implementation of the decision. According to the chosen method and purpose of the study, the following actions are provided:

1. the task is to characterize the valeological competence of non-medical Ukrainian students of higher education institutions → to investigate the definition of valeological competence in regulations of Ukraine and some scientific publications → to analyze the causes of differences → to draw up a standardization plan in determining valeological competence and its place in classification → implementation of the decision;

2. the task is to determine the components of valeological competence → to investigate the definition of competence's components in the scientific literature → to analyze differences → to make a preliminary judgment about their significance and consequences → describe the started pedagogical experiment on formation and approbation of the curriculum of the corresponding academic discipline, which allows to form the valeological competence → identify valeological competence's components in accordance with the proposed curriculum of the academic discipline → to offer methods for assessing the formation of individual competence's components;

3. the task is to establish the relationship of valeological and other competencies that affect its formation or are formed together with it → to investigate the relationship of competencies → to analyze the consequences of lack of necessary additional competencies for human health → to determine the place of valeological competence among other competencies → test your own hypothesis about the importance of valeological competence for human health → determine the ratio of the achieved value of valeological competence with its place in the system of competencies of higher education standards of Ukraine → provide recommendations on methods of eliminating the identified contradictions.

III Results

During the study of scientific sources and Ukrainian regulations it is established: regarding the saving and restoration of health/life in scientific sources named "valeological competence" and "health saving competence", in higher education standards and other regulations – "health saving competence".

Regarding the guidelines for health saving and life rescue, we have studied the educational standards approved by the Ministry of Education and Science of Ukraine. In the educational standards related to the pedagogical activity of higher education institutions (specialties 011, 015, 016), among the special (professional) competencies are the ability to "use different types and forms of physical activity for active recreation and a healthy lifestyle", to organize work "in accordance with the requirements of environmental safety, safe lifestyle, occupational safety and hygiene", to organize the educational process in accordance with the special needs of some students. The educational standards of physical culture and sports (017) among the special (professional) competencies indicate the ability to "organize recreational physical activity of different groups of the population", "physical rehabilitation and adaptive sports", "strengthen human health through the use of motor activity, nutrition and other factors of a healthy lifestyle", "provide pre-medical care in case of emergencies". The educational standards of biology (091) require "biodiversity conservation, environmental protection, environmental management" and "the ability to analyze the results of the interaction of biological systems and the possibility of their use in various sectors of the economy, biotechnology, medicine and the environment". In the educational standards of ecology (101) among the general competencies is the ability to "use different types and forms of physical activity for active recreation and healthy living", and among the special (professional) named the ability "to identify technological environmental risks and inform the public about environmental safety"; among the program learning outcomes - the ability "to use different types and forms of physical activity to lead a healthy lifestyle". The last ability is indicated as the only one in relation to health in educational standards on chemistry (102), standards of exact sciences (104-123), among general competencies. Among the general competencies of the educational standard on chemistry (102) of the educational level "master" are also mentioned "the ability to act on the basis of ethical considerations (motives)" and "the ability to actively environment's protection".

In educational standards related to fire safety (specialty 261), maintaining human health belongs to the category of special (professional) competencies. In educational standards related to civil defense (263), health saving is associated with the prevention of accidents and occupational diseases. In educational standards related to transport (271-275), valeological issues are not defined as a separate requirement, but only mentioned in the context of the ability to design vehicles with environmental safety requirements that are important for health. In most administrative, artistic, philosophical, economic, legal educational standards (for example, 281, 291, 292), in the educational standards of law enforcement and most military (253-255, 262) health saving is not mentioned at all. The only exception is the educational standard of state border guard (252), which provides for "the use of various types and forms of physical activity for active recreation and a healthy lifestyle."

The educational standards of veterinary medicine, hygiene and expertise (211, 212) among the general competencies indicate "the desire to environment protect", among the special (professional) – "the ability to analyze the safety of food and feed", "the ability to plan sanitary measures, develop procedures and monitor compliance with hygiene requirements... for the production of safe food ". In the educational standard of dentistry (221) among the general competencies content "the ability to act socially responsible" and the ability to "use different types and forms of physical activity for active recreation and healthy living", and among special (professional) competencies – numerous diagnostic, therapeutic, preventive, medical organizational, planned and emergency actions aimed at patients, as well as "the ability to assess the impact of the environment on the individual and population's health". The educational standard of nurses (223) among the general competencies contains "the ability to act on the basis of ethical considerations" and the ability to "use different types and forms of physical activity for active recreation and healthy living", and among special (professional) competencies – "the ability to recognize and interpret signs of health and its changes, illness or disability (assessment/ diagnosis), limitations of the possibility of full life and identify the problems of patients with various diseases and conditions", "ability to maintain their own health" while providing care to patients. Emphasis is also placed on the need for tolerant and reckless behavior, the need to provide the patient with a dignified attitude, privacy/intimacy and confidentiality. Similar emphasis is made in the educational standards of the specialties "Technologies of medical diagnostics and treatment" (224), "Physical therapy, ergotherapy" (227), "Social work" (231). In this case, the ability to use physical activity to lead a healthy lifestyle is grouped with the ability to preserve and multiply moral and cultural values.

The essence of health saving is the use of medical and hygienic methods, sports, environmental technologies, with emphasis on the direction in which the author is most aware. In the Ukrainian Engineering Pedagogics Academy from 2019/2020 academic year for students of "bachelor" and "master" educational levels of specialty "011 – Educational, pedagogical sciences" professors with medical and pedagogical education teach valeological discipline "Health pedagogy". Teaching is conducted according to the author's program with emphasis on diseases that, according to UN, WHO, Ministry of Health of Ukraine and the State Statistics Service of Ukraine statistics cause the highest number of diseases and deaths, and have controlled and conditionally controlled risk factors, i.e., subject to prophylactic's intervention. For the full formation of valeological competence, students must acquire knowledge about:

- 1) health;
- 2) diseases, their risk factors, symptoms, treatment and prophylactics;
- 3) practical skills (hygiene, self-examination, self-help, emergency care, others);
- 4) motivation to lead a healthy lifestyle and adhere to safe behavior patterns;
- 5) to improve ethics and skills of interaction on health issues with others, medical workers.

We offer the following list of information, actions, skills and personal qualities/abilities that correspond to the lists:

- 1) components of valeological competencies (cognitive, activity, motivational-value and personal);
- 2) topics of the curriculum of the discipline "Health Pedagogy" (table 1).

Table 1. Components of valeological competence in accordance with the topics of the discipline "Health Pedagogy" and four pedagogical components

Generalized topics of the "Health pedagogy" curriculum	Components of competence			
	Cognitive (knowledge)	Activity (skill)	Motivational and value	Personal (required qualities)
1	2	3	4	5
Personal hygiene	Washing, brushing teeth, care for nose, eyes, intimate hygiene, clean clothes (tools and techniques)		Feeling good, perception by others	Cleanliness
Household and medical protection against infectious diseases (anti-epidemic regime and vaccination)	Current infectious diseases, risks of infection, symptoms, treatment, prophylaxis	Hygiene, screen protection, distance, time, vaccination, treatment	Taking care of yourself, others, family	Tolerance to patients according to the risk of infection
Rational interaction with medical workers and pharmacists	Possibilities of self-medication, physicians, modern medicine, laws of Ukraine	Cooperation with a physician, pharmacist, understanding of the medical card	Taking care of yourself, interest in the results of the survey	Trust in physicians, sensitivity to patients
Skills of self-examination, determination of restrictions and regime according to the state of one's own health	Condition of skin and appendages, respiration, heartbeat, temperature, body symmetry, vision, hearing, smell, things, coordination, body weight, emotions, tumors	Self-examination in front of a mirror, measurement of heart rate, pressure, temperature, weight, glucose level in patients with diabetes, palpation of the breast, self-diagnosis of stroke	Taking care of yourself, maintaining health and life as the greatest values	Self-criticism
Ability to use medicines from the home first aid kit	Use of instructions to medicines and devices, definition of expiration dates, acquisition, application		Willingness to self-help and help others	Responsibility, regulations, timely call for professional help
The optimal mode of work and rest, sleep	Duration and intensity of work, which does not exceed the possibilities of adaptation and recovery through rest and sleep	Personal protection against industrial hazards, burnout, adequate rest and sleep in appropriate conditions	Feeling well; positive mood and activity; adequate reactions to others who are not affected by fatigue	Ability to plan time and conditions of work and rest

1	2	3	4	5
Rational mode of physical activity	Training, gradual increase of loadings, harmony of physical and intellectual evolution	Determining one's own limit of injuries and failure to compensate	Effective physical work and training without injuries and diseases, weight normalization	Ability to plan the mode of training, physical work
Rational nutrition	Healthy and special food, diets, food safety, bioadditives, caloric content, content of components	Evaluation and review of the diet, checking the quality and shelf life of food	High life expectancy and quality, disease prevention, weight normalization	Self-criticism, the ability to agree on a joint diet in the family
Optimization of household ecology	Domestic health risks, constant and extreme	Adjustment of lighting, microclimate, silence, fire safety, hygiene of houses	Reducing the risk of injuries, diseases, poisonings	Ability to agree in the family on safe living conditions
Choosing a job according to health status	Health restrictions, occupational diseases	Prophylactic examinations, psychological testing	High life expectancy and quality, disease prevention	Self-criticism, determining the priority of health
Safe traffic behavior	Traffic rules, statistics and causes of road accidents	Observance of traffic rules, refusal to drive vehicles tired, after psychoactive substances use	Minimization of road accidents' risk	Responsibility, normativeness, care for others, tolerance for other people's mistakes
Psychohygiene and conflict resolution	The norm of mental health, mental disorders, the role of man in conflicts, the emotions of conflict	Preventive examinations, requests for consultations, self-diagnosis, neuro-linguistic techniques	Mental health saving, psychological balance maintenance, harmonious relationships with others, minimizing of conflicts' consequences	Self-criticism, timely appeal for professional help
Social interaction with people with disabilities	Inclusive education, rights and needs of people with disabilities	Joint training with the disabled	Help and tolerance are the norms of modern society	Tolerance, support

1	2	3	4	5
Protection against violence, bullying	Statistics of bullying, domestic violence, limits of self-defense, types of violence, victim behavior	Independent cessation of bullying and domestic violence, knowledge of their rights and algorithm of actions in case of their violation	Psychological balance, adequate protection, seeking help	Self-worth, intolerance of bullying in one's own presence
Emergency care, self-help	Vital functions of the body, causes and types of death, shock, coma, bleeding, pain, risks of emergencies in asthma, diabetes, predisposition to allergies, the limit of self-help and seeking help	Determining one's own risks, pre-hospital care and self-help in the presence of bleeding, injuries, burns, poisonings, allergies, bites, cessation of breathing and heartbeat, safety of the caregiver, knowledge of poisonous fungi, insects, animals	Preservation of life and health, own and other victims	Ability to survive, care for yourself and others
Absence of especially dangerous bad habits (tobacco smoking, narcotic and toxic psychoactive substances use, alcohol abuse)	Statistics and consequences of tobacco, drugs and toxic substances, alcohol use, addiction treatment, rehabilitation	Abstinence from smoking, narcotic and toxic psychoactive substances use, moderate consumption of alcohol or abstinence from its use	Preservation of own health and life, birth of healthy children, preservation of social ties	Taking care of yourself and others
Responsible sexual behavior	Anatomy and physiology of the female and male reproductive system, desirable and undesirable pregnancy, pregnancy planning (preconception), childbirth, abortion, sexually transmitted diseases	Harmonious sexual intercourse, contraception use, adequate treatment of sexual disorders and sexually transmitted diseases	Procreation saving, refusal of abortions without medical indications, harmonious family relations, responsible parenthood	Loyalty in relationships, responsibility, self-control

1	2	3	4	5
Willingness to donate	Blood and organ donation, transplantology, laws of Ukraine and other countries of the world, technologies, blood transmitted diseases	Blood donation, if the state of health allows, consent to organ and tissue donation	Help is the norm of modern society	Caring for others

In accordance with the purpose and methodology of the study, valeological competence in our understanding is a ability to lead a healthy lifestyle, practice safe behavior and provide emergency care. A pedagogical experiment of teaching the discipline "Pedagogy of Health" for students from Ukraine and Germany on educational levels "bachelor" and "master" is conducted. The success of the formation of valeological competence is assessed by a qualimetric method, according to which the student's knowledge, skills and motivated actions are assessed in accordance with the experimentally assigned weight of the event. For example, within the topic of responsible sexual behavior, students are asked whether they use barrier contraception, provided they have sex. The affirmative answer should be detailed: is a condom always used? Did they refuse unprotected sex if there was no condom? Were there any emergencies (the condom remained in the vagina after intercourse, the condom broke)? Has the expiration date of the condom been checked before use? Did the condom fit the size of the penis? Was it bought well-known expensive condom brand, or the price factor was decisive? Were unwanted pregnancies and sexually transmitted diseases? Did they perform abortions at the request of a woman or a married couple, without medical indications? Each answer is assigned a weight. Compliance with a safe pattern of behavior adds points. It should be noted that for academic purposes, the assessment is given only for knowledge of barrier contraception and the ability to open the package of a condom and put it on a dildo. The student can get additional points only for changing the model of behavior to a safer one. Sex education classes for minors can be conducted only with the written consent of parents (guardians). It is desirable to teach this topic by a teacher with a medical education. A separate publication will be devoted to the results of qualimetric evaluation.

Analysis of national educational standards for medical and non-medical specialties also allowed us to propose requirements for the formation of valeological competence for medical and non-medical education, which is presented in Table 2. We identified five levels of valeological competence's formation: remember and reproduce (1/5), understand (2/5), apply (3/5), analyze and interpret (4/5), create your own (5/5). Each subsequent level includes all previous ones.

Table 2. The required level of valeological competence formation for applicants for medical and non-medical students in accordance with the educational level

Requirements	Remember and replay	Understand	Apply	Analyze and interpret	Create
Medical education					
Educational level		Medical university graduate student	Nurse, fel'dsher, intern	Paramedic (ambulance physician), primary care specialist	Secondary and tertiary specialist, physician-researcher
Non-medical education					
Educational level		Bachelor	Master		

We believe that in order to fulfill our proposed requirements for valeological competence's formation according to the educational level "bachelor" of non-medical education, online classes are enough, and for valeological competence's formation according for "master" level in non-medical students, practical classes in the classroom are necessary. First of all, to practice the methods of emergency medical care.

Also, the analysis of national educational standards allows us to define environmental competence as the one that has the greatest theoretical and ideological connection with valeological competence. The greatest connection with valeological competence from the number of competencies, the formation of which requires practical elaboration, has sports/physical training competence.

IV Discussion

Health saving technologies are a kind of pedagogical technologies. They are used in many specialized disciplines, which are called valeological [19]. The name "valeology" comes from Latin *valéo* – to be healthy, strong; and Greek *λόγος* – word, doctrine, science [21]. Among valeological disciplines in school and higher education, the most common are actually "Valeology", "Basics of Life Safety", "Basics of Medical Knowledge" and "Health Pedagogy" [22; 23]. The terms "health saving" and "valeological" are identical in meaning. As noted in the "Results" section, the main terminological discrepancy between scientific sources and regulations of Ukraine regarding valeological competence is the name of the competence itself: in scientific sources the name "valeological competence" and "health saving competence" are used simultaneously, in higher education standards and other normative (legal) acts of Ukraine define "competence of health saving". However, most of the differences are manifested in the understanding of what constitutes valeological competence. Unfortunately, not all authors, even textbooks of valeological disciplines, are able to identify the main components of health saving. Some textbooks even contain references to dubious methods of diagnosis and treatment, as well as openly unscientific methods, which are refuted by the methods of evidence-based medicine [23]. The most common emphasis is on environmental and sports technologies for maintaining and promoting health [24; 25]. Less common are accents on Eastern folk methods of diagnosis and treatment, secondary physiotherapy methods in the absence of a description of traditional European [26]. Authors of such methods often appeal to the WHO definition of "health", which is understood as "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [27], distinguishing from the definition of "mental well-being" and proposing achieving spiritual practices and even religiosity. Such an approach violates the paradigm of secular education in Ukraine and is, in our opinion, unacceptable.

The random principle of including health issues in national educational standards is frankly surprising [13]. It is no coincidence that we have formed four groups of standards, which belong to: 1) the sphere of education as such (on pedagogy); 2) to safety and security (they carry an increased risk for the representatives of such professions and force these specialists to be in dangerous places, places where people may need urgent help); 3) to health care (for medical workers preservation and restoration of health is the purpose of action); 4) others. The standard of physical culture and sports (specialty 017) is the most detailed list of issues of preservation and restoration of health among non-medical educational standards. The lack of mention of health saving in management educational standards (281) does not cause such cognitive dissonance as the lack of such reference in the educational standards of the military and law enforcement (252-255, 262). If health is recognized as one of the highest values of Ukrainian society, and its protection is guaranteed by the state [28; 29, art. 3, 27, 49, 50], then law enforcement officers should have in the educational standard issues of emergency care, childbirth, ethical issues of use of force in terms of medical consequences of these actions; military personnel – issues of emergency assistance and ethical issues of the use of force against civilians during hostilities, against captured and wounded military adversaries. For representatives of professions that are needed in industrial production, it is appropriate to focus on possible occupational diseases, occupational health risks.

The identified combination of the ability to use physical activity to lead a healthy lifestyle with the ability to preserve and enhance moral and cultural values indicates the secondary role of valeological competence in the opinion of the compilers of national educational standards. In our opinion, the ability to lead a healthy lifestyle for non-medical students can indeed be a general competence, but mandatory for all without exception, educational standards, and without a combination of competencies on moral and cultural values.

This combination is the reason for the authors of many textbooks of valeological disciplines in Ukraine to pay unjustifiably much attention to issues of national culture, history, folk traditions and religion.

It is important for our study to determine the relationship between competencies and educational standards. J. Glaesser (2019) [30] defines competence as a field of interest, not as knowledge, so he finds it useful to perceive all learning as the goal of acquiring competence, not knowledge. Education standards, according to the author, can be set taking into account the specific level of competence to be achieved, as well as the acquisition of knowledge, tuition costs, the number of teachers with a certain level of qualification, student satisfaction with learning. Education standards affect the further employment and funding of universities. To establish such relationships of competence formation, it is necessary to reliably measure what the proposed qualimetry of valeological competence. The author also points out the negative consequences of bringing all the necessary competencies under the existence of standards, among which in the first place is the reduction of teaching to training for successful passing of tests.

And yet in the practical dimension to consider the competencies that are formed in the educational process, it is advisable to consider in connection with educational standards. J. Fleischer et al. (2013) [31] notes that competencies are skills, and standards describe the level of achievement that can be applied to competencies. This approach will provide control over learning outcomes. Valeological competence should be separated from competencies related to spiritual values, folk traditions. The components of valeological competence defined by us allow to carry it to the general and obligatory, and for students of a medical profile of training – to special (professional) competences which are equally directed both to the medical worker, and to his patients.

In Introduction, we noted that the competencies that should be formed by the applicant in accordance with the specialty and educational level are specified in national educational standards, but in the list of standards of higher education in Ukraine we see only educational levels "bachelor" or "master". The Law of Ukraine "On Higher Education" [8] also specifies the educational level of "junior bachelor", which does not meet the standards of the Bologna Process and is added to the list of educational levels only in 2017. At the same time, Ukraine made the first real attempt to fulfill its obligations under the Bologna Process on the standardization of educational levels only in 2014. In the new law "On Higher Education" there was no educational level "junior bachelor", and the educational levels "specialist" and "junior specialist" were removed from the list [32]. Among the developed educational standards there are no ones that correspond to the educational level of "junior bachelor", which on the one hand gives us space for proposals, but on the other hand limits the search for requirements for the formation of competencies.

The lack of a definite list of components of health saving allowed us to offer our own list and our own definition of valeological competence. The issue of safe behavior, which we have singled out as the third component of valeological competence, deserves special attention. This action was carried out by us in connection with the European requirements for the description of competencies [33], which do not use negative wording. To practice safe behavior means "not to practice dangerous behavior". Of particular importance for a healthy lifestyle is the non-use of psychoactive substances (Table 1), which consists of the refusal to use them and a special (firm and conscious) attitude, according to which a person will never, under any circumstances, smoke or use drugs in recreational purposes. Human behavior in different typical situations, when there is a risk to health and life, is described by models, typical scenarios. The probability of their implementation is known through statistical studies. The number of people who abuse psychoactive substances is extremely high, and the consequences are tangible for personal and population health, add to the financial burden, which is projected for decades to come [34]. The safe model of behavior also includes situations of excessive risk to health and life during extreme sport and martial arts, conflicts with fights, work in high-risk occupations (with radiation, toxic chemicals and explosives, military service, work in law enforcement, fire safety and rescue guard, high-altitude and underwater work, etc.).

As already mentioned, the formation of the necessary competencies in the pedagogical process in Ukrainian higher education institutions is determined by national standards of higher education. Regarding the specialty "011 – Educational, pedagogical sciences" as of the beginning of October 2021 approved in Ukraine is only the standard of higher education of "master" educational level [35]. Therefore, a theoretical discussion in the scientific pedagogical environment of the content of the educational standard "011 – Educational, pedagogical sciences" (master) can be useful for legislators. In addition, this theoretical study helped us to

distinguish in practical terms the materials of the academic discipline "Health Pedagogy" between the areas of education "bachelor" and "master", to develop and implement these issues in the educational process at the Ukrainian Engineering Pedagogics Academy [36] for bachelors of 011 specialty in 2019/2020-2020/2021 academic years [37]. The target competencies indicated by us in the materials of the curriculum should be clearly classified: their place among all competencies that are formed should be defined.

During the formation of *special (professional, subject) competencies* in accordance with the standard of specialty "011 – Educational, pedagogical sciences" students must form a critical understanding of the problems in the field of education at the boundaries of knowledge. This should include the ability to solve complex multidisciplinary and interdisciplinary tasks. In this case, the teaching of any discipline should be subject to the model of health. The necessary "ability to take into account the diversity and individual characteristics of students during the educational process" in the context of health saving is considered by us as an opportunity to assess the physical and psychological health of students, their special needs and limitations, to be tolerant of other students with special needs, to assist them in adapting to the initial process. Thus, Ukraine has adopted a strategy of mixed education of healthy students and students with special needs [38; 39]. The ability to solve interdisciplinary (research and/or innovative) problems of pedagogy is defined by the standard "011 – Educational, pedagogical sciences" as an *integral competence*. Ability to solve problems, tasks of research and/or innovation in the field of educational, pedagogical sciences.

In accordance with the standard of education, it is also necessary to acquire the ability to use modern information and communication (digital) technologies in educational and research activities, which we used to form *valeological competence*. Before the beginning of classes on "Health Pedagogy", we expect a level of mastery of information technology, sufficient for the full participation of students in the educational process, the established culture of communication in the information environment.

Some *general competencies* that must be formed in the master's degree in "011 – Educational, pedagogical sciences" also meet the conditions for the formation of *valeological competence* and effective training in the program of the academic discipline "Health Pedagogy". Thus, the ability to "learn", "search, process and analyze information from different sources", "abstract thinking, analysis and synthesis" are necessary for the levels of competence "remember and reproduce" and "understand" (Table 1). The ability to "identify, pose and solve problems", "apply knowledge in practical situations", to act adaptively (according to the situation), the ability to "interpersonal interaction" are necessary for the level of competence to "apply". The ability to "act socially responsibly and consciously" corresponds to the values on which *valeological competence* is based in matters of caring for the health of others, when a person agrees to donate his organs and tissues, for vaccination, stays at home if he has symptoms of infectious disease or provides emergency medical care to victims. Socially responsible behavior with concern for the health of others is not possible without values [40; 41], which appeals to the motivational and value component of competence and moral qualities of the person. The classification of the competence's components (cognitive, activity, motivational-value and personal) selected for the analysis of *valeological competence* is traditional, according to V. M. Vasyliuk (2021) [42].

Given the fact that in order to obtain a master's degree, persons who have obtained a bachelor's degree may be admitted, the formation of *valeological competence* must take place both during the bachelor's program and the master's program. But the requirements for the formation of competence should be different: for the educational level "bachelor" in our opinion it is enough to achieve the level of formation of *valeological competence* "understand", for the educational level "master" – the level of formation of *valeological competence* "apply".

The relationship of competencies required for health saving is not limited to the range of competencies defined by the educational standard. An obligatory component of *valeological competence* is environmental issues [43]. During the training of masters and bachelors in the specialty "011 – Educational, pedagogical sciences" on a theoretical level should discuss the ecology of houses in which students live and study, the management of household and industrial waste, the effects of air, soil and water pollution, the consequences of natural and man-made disasters, such as floods, droughts, forest fires, long-term environmental consequences of the Chernobyl accident [44; 45]. The study of environmental issues by non-medical students can take place at the departments of ecology or labor protection, if it is provided by the educational program.

Thus, we have determined the composition of valeological competence, its connection with other competencies in the educational process of non-medical students, with national educational standards and state the implementation of the objectives of our study.

V Conclusions

1. We have proposed the following definition of valeological competence: "the ability to lead a healthy lifestyle, practice safe behavior and provide emergency care". Its components you propose to consider: personal hygiene; household and medical prophylaxis against infectious diseases (anti-epidemic regime and vaccination); rational interaction with medical workers and pharmacists; skills of self-examination, determination of restrictions and regime in accordance with the state of one's own health; ability to use medicines the home first aid kit; optimal mode of work and rest, sleep; rational mode of physical activity; rational nutrition; optimization of household ecology; choosing a job according to health status; safe traffic behavior; psychohygiene and conflict resolution; social interaction with people with disabilities; protection against violence, bullying; emergency care, self-help; absence of especially dangerous bad habits (tobacco smoking, narcotic and toxic psychoactive substances use, alcohol abuse); responsible sexual behavior; willingness to donate. It is expedient to measure the success of the formation of valeological competence by qualimetric methods, which must be developed in accordance with the cognitive (knowledge), activity (skills), motivational-value and personal components of competence. The development of qualimetric criteria determines the main future perspective of the study. It is necessary to form the valeological competence of bachelors of non-medical profile at the level of "understand" (2/5), masters – at the level of "apply" (3/5).

2. Valeological competence, taking into account the value of health declared by the Ukrainian society and the state, should be included in all without exception national educational standards in the number of "special (professional, subject) competences" with definition of the necessary level of competence formation (1-5/5) and emphasis on the training profile in accordance with the risk factors of the profession or its social role.

3. For the formation of valeological competence of students of non-medical higher education institutions, general competencies (cognitive, lingual, informational-communicational (digital), ability to learn, ability to act on ethical considerations), special competencies (human anatomy and chemistry at school level) are required. The formation of valeological competence occurs simultaneously with the formation of ecological competence and social competences of tolerant attitude to others, people with stigmatizing diseases, to victims of violence, people with disabilities. The competences of abstract and analytical thinking and the ability to act on the basis of ethical considerations are deepened.

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