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Ways to implement a competency-based approach for the quality training of future professional education specialists (transport, occupational safety and health)

Abstract. The problem of the quality training of future specialists in professional education through the implementation of a competency-based approach when studying the educational component “Occupational safety and health in the industry. Civil protection” remains poorly researched and is of special relevance, since the competency-based approach involves a special organization of the educational process in a higher education institution. Accordingly, the purpose of the study was to reveal the features and ways of implementing a competency-based approach to the quality training of future specialists in professional education (transportation, occupational safety and health) on the example of studying the educational discipline “Occupational safety and health in the industry. Civil protection”. To achieve this goal, the following complementary research methods have been used: theoretical analysis, synthesis and generalization of scientific publications, educational and methodological literature, scientific and pedagogical one, and regulatory documentation to make important ideas more understandable, to identify the state of the research problem, to model the organization of educational process and to substantiate the pedagogical conditions for quality training of higher education seekers; the analysis of educational programs, pedagogical activities of HEIs teachers in order to clarify the procedural features of a competency-based approach implementation. The authors highlight the model of the educational process organization in the implementation of a competency-based approach to the training of future professional education specialists in the conditions of the Hryhorii Skovoroda University in Pereiaslav. Such a transition has been found to enable the development of core skills that are crucial for the application of knowledge in the real world, focusing on problem solving, critical thinking and the ability to adapt to changing situations. It has been determined that a competency-based approach contributes to the creation of an educational environment in which students are actively involved in learning, encouraging them to take responsibility for their learning process. In addition, competency-based education is closely linked to the needs of the labor market, ensuring that graduates have the relevant skills and knowledge required by employers, thereby increasing their employability. The use of the results of this research and the implementation of a competency-based approach in professional education can not only improve the educational process, but also make a significant contribution to the training of comprehensively developed, qualified specialists who are ready to solve problems in their fields

Keywords: quality of educational services; competencies; learning outcomes; educational program; educational sector; professional safety

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INTRODUCTION

The development of skills and competences among students of higher education institutions (hereinafter – HEI) is a key and relevant factor contributing to the sustainable progress of society. The competency-based approach uses a combination of different types of learning (knowledge, skills, and abilities) to create integrated learning outcomes. Through this approach, teachers are expected to enhance the cognitive, communicative, and emotional aspects of students who are seeking higher education.

Since the reform of the national higher education system and the introduction of the Bologna process, scholars and researchers have concentrated on the educational process. The Bologna process has made significant changes to how the higher education system is organized and aimed at guaranteeing the quality of professional training for future academic specialists. Accordingly, universities and academic staff are required to take on new academic roles and functions, which, as noted by foreign scholars (Shobha *et al.*, 2020; Prieto-Prieto *et al.*, 2024), depend on achieving quality and excellence that ensure competitiveness on a global scale. In this context of changes, a new model of training HEIs students is emerging, which introduces a competency-based approach to education. This model replaces educational systems based on teaching and learning goals and is considered a fragmented system in the educational process (Serrano *et al.*, 2019).

In order to prepare future experts in the field of education, the idea of pedagogical development in education outlines important duties for various stages of higher pedagogical education in all its components: preschool, primary (Angelova & Terlemezyan, 2023); secondary (Zhu *et al.*, 2020); professional vocational and technical (Marinič, 2023); special pre-university, higher (Ivanytska, 2023), including postgraduate education. By prioritizing the acquisition of competencies, educational institutions have better opportunities to prepare students for the complexities of the modern professional environment. This approach encourages a more personalized learning experience where students are actively involved in defining their educational trajectories based on their career aspirations and the demands of the global labor market. It also fosters a dynamic interaction between teaching and learning, where teachers facilitate the process by guiding, mentoring and providing feedback rather than teaching the material in a traditional lecture format. Ultimately, this competency-based model of education aims to produce graduates who are not only academically prepared, but also adaptive, innovative and capable of lifelong learning to meet the challenges of continuous social and technological change (Scherak & Rieckmann, 2020), who possess the ability to handle challenging problems in the fields of science, education, or research, since this affects the production of fresh, comprehensive knowledge, the acquisition of professional experience, and the useful reorganization of already existing knowledge (Abelha *et al.*, 2020). To foster a society's innovative progress and educate forward-thinking

experts, educational activities are infused with innovation. This strategy primarily aims to enhance the scientific, technological, and methodological aspects by encouraging the acquisition of scientific knowledge. This knowledge is then applied towards developing and deploying cutting-edge, competitive technologies, equipment, materials, and more (Sapargaliyeva *et al.*, 2023).

HEIs have a fundamental role in implementing the principle of sustainable development of society (Spyropoulou & Kameas, 2024). The implemented educational programs are aimed at increasing the competence and changing the attitudes of higher education students, as well as enabling them to take responsibility for participating in the development of the modern world (Belur *et al.*, 2022). The requirements of the social system for obtaining higher education and the qualification of a future specialist indicate new ways to form the content of education. The modernization of the educational process takes on a continuous nature and requires the successful implementation of a competency-based approach to the training of HEIs students. The modernization of methods, teaching techniques, forms of organization of educational activities, structure and content of organizational forms to ensure quality training of higher education seekers is an important factor in the successful implementation of a competency-based approach.

The purpose of the study was to reveal the features and ways of implementing a competency-based approach to the quality training of future specialists in professional education (transport, occupational safety and health) using the example of teaching the educational component “Occupational Safety and Health in the Industry. Civil Protection”. The research tasks are to reveal the essence of the concept of “competency-based approach”, to develop a model of organizing the educational process at Hryhorii Skovoroda University in Pereiaslav (hereinafter – HSUP), based on the legislation of Ukraine and normative documents of HSUP, to theoretically substantiate the importance of studying the educational component “Occupational Safety and Health in the Industry. Civil Protection”, to highlight the methods of putting a competency-based approach into practice using the example of instructing the course “Occupational Safety and Health in the Industry. In Civil Protection”, the aim is to explain the pedagogical conditions of training in the application of a competency-based approach for high-quality training of future specialists in professional education (transport, occupational safety and health), and to emphasize the benefits of applying this approach.

Theoretical analysis, synthesis and generalization of scientific publications, educational and methodological literature, scientific and pedagogical literature, and regulatory documentation have all been used in tandem to accomplish this goal. These methods have also been used to identify the state of the research problem, model the organization of the educational process, and clarify the essence of key concepts and to substantiate the pedagogical conditions for quality training of higher education seekers;

the analysis of educational programs, pedagogical activities of HEIs teachers in order to clarify the procedural features of the competency-based approach implementation. This is a new study conducted at HSUP, which identifies the ways of implementing a competency-based approach and the pedagogical conditions that should be preferred in the training of higher education seekers for providing the quality training of future professional education specialists.

Modern strategies for implementing a competency-based approach in professional education

The active discussion on the application of a competency-based approach began in the late 20th century and has been the subject of study by Ukrainian and foreign scientists (Novak *et al.*, 2019; Borodiyenko *et al.*, 2023; Pugigali *et al.*, 2023). Ukrainian pedagogical scholars are increasingly using the thesis of the need to introduce a competency-based approach in the vocational training of future specialists in various fields, which is a key factor in the modernization of the educational sector. Therefore, a competency-based approach is of leading importance in regulatory documents that regulate and ensure the sustainable development of educational processes (Kamenska, 2019).

Scientists M. Cejas *et al.* (2023) note that the “competency approach” is the orientation of educational activities on the development of mandatory competencies and predictable results of training in a specialty. This approach directs the educational sector to the formation of competencies in higher education students during their studies and is based on cross-cutting skills and competencies, on the ability to search for information, formulate and solve problems related to the professional development of a future specialist. In this context, the requirements for teaching aids acquire extremely significant emphasis. Priority is given to those that include communicative and situational tasks that require the involvement of students’ experience, focus on future professional activity and encourage active thinking. A competency-based approach forms and develops the future specialists’ ability to think creatively and critically, analyze, forecast, and successfully apply the acquired knowledge in practice in future professional activities. At the same time, the higher education institution forms the student’s readiness to work in the specialty successfully under new conditions. Such an ideological concept orients educators to personality-oriented and activity-based learning models, in order to successfully ensure the quality of the educational process. This requires a research and teaching staff (a scientific and pedagogical worker) to shift the emphasis from the informational to the organizational and management level in educational activities (Kamenska, 2019; Rieckmann, 2019; Schöning & Mendel, 2023).

In the common worldview, the competence of a future specialist is understood as specially structured acquired knowledge, practical skills, abilities, and communications acquired during higher education obtaining. General and special (professional, subject) competences are used by an

individual in various fields of professional activity for the implementation of certain tasks, and they also serve him/her in various situations when choosing a model of behavior. Without a doubt, all the above-mentioned scientific works and approaches of teacher-researchers are relevant. However, the ways of implementing a competency-based approach for quality training of future professional education specialists (transport, occupational safety and health) are not sufficiently disclosed by scientists and educators.

This challenge requires more research and practical initiatives to improve approaches to the application of the competency model. It is necessary to focus on the creation of comprehensive educational programs that cover interdisciplinary knowledge and emphasize the importance of practical application of theoretical knowledge for the formation of vocational competencies. Cooperation between educational institutions and the labor sector is also critically important to update educational courses to meet market needs. The research should also focus on analyzing the impact of a competency-based approach on the quality of students’ training and their adaptation to the demands of professional life. It is important to develop clear criteria for evaluating the achievement of competencies, which will allow assessing the effectiveness of the educational process accurately. Active involvement of students in learning through project activities, case studies and other forms of active learning will increase their motivation and engagement. Teacher training is key to the successful implementation of a competency-based approach, as they must be able to adapt teaching and assessment methods to new educational requirements, including the use of information technology. Therefore, developing a deep understanding and effective application of the competency model can significantly increase the level of professional training, providing graduates with the necessary set of knowledge and skills for successful entry into professional life.

A key aspect for further development is not only the educational programs improving, but also ensuring the flexibility of the educational process so that it can adapt to the rapidly changing labor market conditions and technological innovations. This involves creating mechanisms for constantly updating the content of education, incorporating modern case studies on practice into the curriculum, and integrating international experience. The development of soft skills, which are essential for effective adaptation in any professional setting and include communication, critical thinking, creativity, and teamwork, should also receive a lot of attention. By considering these factors, educators may help students get more out of their education and become more marketable to employers. In order to overcome the difficulties involved in implementing a competency-based approach, it is also necessary to improve the digital technology and distant learning infrastructure, which will provide students greater flexibility and efficiency in their study time. Students may have access to an increased variety of learning resources and technologies with the further

integration of virtual laboratories and online platforms. Not to mention, engaging in scientific work and research projects can help pupils hone their analytical abilities and expand their capacity for creative thought. This will aid in the development of future professionals who can solve challenging professional challenges with fresh thoughts and solutions in addition to using previously learned information.

Particular focus needs to be placed on the advancement of individualized learning trajectories, which will allow students to shape their own educational path based on their interests, needs and career goals. This will contribute to a deeper involvement of students in the educational process and increase their motivation to study, as they will see a direct connection between the acquired knowledge and its application in their future professional activities. It is also necessary to intensify involvement in international educational programs and projects, which will allow students and teachers to exchange experience with colleagues from other countries, get acquainted with the latest educational practices and expand their professional horizons. International cooperation can also contribute to the implementation of joint research projects and the development of innovative educational materials. In addition, it is important to support graduates in the first years after completing their studies, in particular through mentoring programs that will help them successfully adapt to the work environment, develop professional competencies, and plan career growth. In summary, a comprehensive approach to education, which includes individualization of education, international cooperation, innovative technologies and support of graduates, can create a solid basis for the formation of highly qualified specialists, ready for the challenges of the modern labor market and capable of continuous professional development.

To increase the effectiveness of the implementation of a competency-based approach, educational institutions should also pay attention to the development of students' and teachers' digital literacy. This involves not only the mastery of basic IT-skills, but also the ability to critically evaluate information, understand the opportunities and risks of digital technologies, and use them for effective training and professional development. Involvement of students in scientific activities and innovative projects should become an integral part of the educational process. This will not only promote the development of critical thinking and research skills, but will also allow students to gain valuable experience in implementing real projects that will be recognized in the labor market. Another important aspect is to create conditions for the development of students' intercultural competence, which includes learning foreign languages, acquainting with the culture and educational systems of other countries. This is necessary for training future specialists to work in an international environment, expanding professional horizons and increasing their competitiveness in the global labor market. In addition, it is important to ensure the accessibility and quality of higher education for all categories of

students, including persons with disabilities, providing an inclusive learning environment and equal opportunities for development and self-realization. All these measures will help create an educational system that meets modern requirements and challenges, prepares specialists who are able to work effectively in a rapidly changing world, adapt to new conditions and contribute to the development of society and the economy.

Formation of professional competences in the context of regulatory and legal support of the educational process

Scientific and technical progress and development of the social system does not stand still. Quality education ensures economic and social progress of society and social institutions. Accordingly, the state needs competitive specialists of the new formation, who are able to solve the tasks and current problems in the future professional activity. A graduate must be capable of professional activity and competent in the field according to their specialty. The strategy of HEI is to organize the educational process and create optimal learning conditions for students of higher education, to introduce innovative processes in the training of future specialists in order to form a highly educated, nationally conscious, creative, responsible, socially active personality and, as a final result, to obtain a comprehensively developed graduate, who will be a competitive qualified specialist of a new formation and in demand in the market of educational services. The process of training a competitive qualified professional (vocational) education specialist requires a comprehensive approach, on the basis of which the professional consciousness and general culture of the future specialists in professional education, capable of pedagogical activity, solving research and management tasks in the field of vocational education, continuous professional development, self-realization and career growth.

Regulatory and legal support for the organization of the educational process is a necessary element of the successful implementation of a competency-based approach for quality training of future specialists in professional education. For example, "Occupational Safety and Health in the Industry. Civil Protection" is a normative educational discipline that is included in the cycle of general training and is a mandatory educational component in accordance with the curriculum, despite the fact that in May 2014 the Cabinet of Ministers of Ukraine canceled the Order of the Ministry of Education and Science of Ukraine dated 21.10.2010 No. 969/922/216 (2010) regarding the mandatory study of the educational components "Occupational Safety and Health in the Industry" and "Civil Protection". However, in November of the same year, the Ministry of Education and Science of Ukraine was given an explanation regarding the importance and relevance of the teaching these academic disciplines and it was noted that the procedure for studying regulatory disciplines should be established by the HEIs in the legislative field in accordance with the standard programs of these disciplines ap-

proved in the established order (Sakun *et al.*, 2019). In view of this, the administration of HSUP, guided by Articles 4, 18, 30 of the Law of Ukraine “On Occupational Safety and Health” (1992), Articles 39, 41 of the Code of Civil Protection of Ukraine (2012), the Law of Ukraine “On Higher Education” (2014), the Law of Ukraine “On Education” (2017), the Standard of Higher Education of Ukraine (2020), etc., the educational component “Occupational Safety and Health in the Industry. Civil Protection” was introduced into the educational process to educational programs and is included in the mandatory cycle of general training for seekers of the second (master’s) level of higher education.

The authors have identified the model of the organization of the educational process at HSUP, which is based

on the Law of Ukraine “On Higher Education” (2014), state standards of higher education of Ukraine (2020), Regulations on the organization of the educational process at the Hryhorii Skovoroda University in Pereiaslav (2021) and other acts of Ukrainian legislation on the organization of educational activities (Table 1). The goals of the university’s educational program are to foster students’ intellectual and creative activity, to ensure that future professionals in the field of professional education can perceive, assimilate, transfer, and apply the knowledge, skills, and competencies they have acquired, and to provide a safe and healthy environment in which to work and learn. In compliance with the most recent education-related laws, the HSUP administration has established suitable work and learning environments.

Table 1. Model of the organization of the educational process at HSUP in the training of future specialists in professional education

Forms of education				
Intramural form of education/(full-time education)				
Correspondence form of education/(part-time of education)				
Volume of the Educational and Professional Program				
240 ECTS credits (first (bachelor’s) level)			90 ECTS credits (second (master’s) level)	
Scientific and methodological support				
Regulatory and legal framework for the organization of the educational process				
Law of Ukraine “On Higher Education”			Standard of Higher Education of Ukraine	
Regulations on the organization of the educational process at HSUP, regulatory documents, etc.				
Forms of organization of the educational process				
Educational classes	Independent (self-study) work	Individual tasks	Practical training	Control
Types of educational activities	<i>scientific activity, essays, e-learning in the Moodle system, non-formal education, etc.</i>	<i>essays, term papers, creative tasks, diploma projects or papers</i>	<i>practice in educational institutions, enterprises, institutions and organizations</i>	Control measures
<ul style="list-style-type: none"> ↪ <i>lecture</i> ↪ <i>laboratory, practical, seminar</i> ↪ <i>consultations</i> 				<ul style="list-style-type: none"> ↪ <i>current control</i> ↪ <i>practical module</i> ↪ <i>module of independent (self-study) work</i>
Additional opportunities				
Dual form of education		Academic mobility		Individual educational trajectory
Accounting of knowledge of higher education students				
Final control				
<i>Theoretical module (computer testing)</i>				
Learning outcomes				
Certification of seekers for higher education				
A competitive qualified specialist of a new formation and in demand in the market of educational services				

Source: developed by the authors on the basis Law of Ukraine “On Higher Education”, state standards of Higher Education of Ukraine, Regulations on the organization of the educational process at HSUP and other acts of Ukrainian legislation on the organization of educational activities

The purpose of studying the educational component “Occupational Safety and Health in the Industry. Civil Protection” is to prepare a competent specialist capable of carrying out professional activities in accordance with professional qualifications, taking into account the risk of man-made hazards and natural disasters; to implement measures to reduce losses and costs in the event of man-made and natural emergencies; to analyze, solve problems

of an innovative nature and make effective decisions in crisis and emergency situations, considering the particulars of the future professional endeavors of those pursuing advanced education as well as the advancements made in science and technology.

The tasks of teaching the educational course “Occupational Safety and Health in the Industry. Civil Protection” are the following: to acquaint students of HEIs

with the legal, organizational foundations and principles of labor protection in the field of education, the features of the application and use of provisions, legislative acts and regulatory legal documents on labor protection and civil protection in their future professional activities; to lay a sufficient foundation for understanding emergency situations, their classification and causes; to provide students of higher education with theoretical knowledge and practical skills regarding the prevention of man-made hazards and natural disasters; to form a conscious and responsible attitude to safety issues in the field of education among future specialists of professional education; to provide the necessary knowledge to students of HEI and to prepare them for confident and correct practical actions in crisis and emergency situations; to teach master's degree students to methodically and competently develop engineering and technical measures in advance and implement them to reduce the risks of crisis and emergency situations, to be able to protect themselves, colleagues and students from the effects of crisis and emergency situations; to develop a scientifically based forecast of probable consequences in possible crisis and emergency situations;

to acquaint seekers for higher education with methods and means of individual and collective protection. When studying this academic course, master's degree students consider and analyze the main laws, legislative and regulatory acts on occupational safety in the field of education; study the organizational and methodological basis of the occupational health and safety management system in educational institutions, problems of occupational safety, occupational hygiene and industrial sanitation in the field of education; learn about the government's emergency civil protection program for Ukraine, the prevention of man-made and natural disasters, the guidelines for behavior during shelling under martial law, and the fundamentals of maintaining Ukraine's cyber security. Future specialists also gain knowledge of occupational safety, the capacity to handle challenging specialized tasks and real-world issues in professional education and industrial occupational safety activities, and they are required to adhere to Ukrainian safety regulations and standards. The study of the educational component "Occupational Safety and Health in the Industry. Civil Protection" ensures that master's students master the competencies presented in the table (Table 2).

Table 2. Intended learning outcomes

Integral competency	Capacity to address issues of a novel and/or research nature and problems in professional education (including in emergency situations).
General competencies	GC 06. The capacity to behave mindfully and responsibly in society. GC 09. The capacity to assess, evaluate, and guarantee the level of work produced.
Special (professional) competencies	SC 01. Ability to apply and develop new approaches to solving problems of a research and/or innovative nature and problems of professional education. SC 04. Ability to analyze, predict, critically consider problems in professional education, make effective decisions on their solution. SC 09. Ability to analyze, evaluate and control hazards and harmful and dangerous production factors at the enterprise and in educational institutions for the purpose of safe functioning of production systems, to organize work in accordance with the requirements of life safety, occupational safety and health and the prevention of accidents at work, development measures to prevent them. SC 10. Ability to apply knowledge of legislation, state standards, industry regulations in the field of professional education and occupational safety and health.

Source: developed by the authors on the basis of the Standard of Higher Education of Ukraine of the second (master's) level, 015 "Professional education (by specialization) (18.11.2020, No. 1435)"

Integration of the competence approach and quality assurance of higher education

One way to put into practice a competency-based strategy for the high-quality training of future experts in professional education is to base the program's orientation and concentration on the Ukrainian Standard of Higher Education. The successful completion of the educational and professional program's accreditation examination and the educational program's certificate of accreditation from the National Agency for Higher Education Quality Assurance, which attests to compliance with the criteria by degrees of compliance, are additional factors influencing the quality assurance of future teacher training.

During the use of a competency-based approach, academic personnel that work in science and pedagogy integrate teaching and research, apply innovations in

educational activities, and contribute to the achievement of the defined goals of the educational program to ensure quality education and successful realization of the individual's potential for professional activity. This approach ensures the effective acquisition of fundamental competencies, knowledge, cross-cutting skills, practical experience, abilities and the capability to apply them in professional activities by higher education students. The curriculum of the educational component "Occupational Safety and Health in the Industry. Civil Protection" is a regulatory document, created on the basis of the Standard of Higher Education of Ukraine, which defines the purpose and tasks of teaching the educational component, outlines the competencies that higher education students should master and ways to implement the competency approach (Table 3).

Table 3. Ways of implementing the competence approach on the example of studying the academic course “Occupational Safety and Health in the Industry. Civil Protection”

Working curriculum “Occupational Safety and Health in the Industry. Civil Protection”		
Content of the academic discipline		
The purpose, the tasks of teaching the discipline	Competences, competencies (integral competency, general competencies, special (professional) competencies)	Program learning outcomes
Forms of study of the discipline and volume		
Practical classes (22 hours)	Lecture classes (20 hours)	Independent (self-study) work (78 hours)
Forms and means of final control		
Oral survey of higher education students in practical classes	Performing individual, independent works	Form of the exam is computer testing
Evaluation criteria		
Current control		Final control
Practical module (practical classes)	Independent work module (modular environment, essay, independent work, scientific work, non-formal education, etc.)	Theoretical module (computer testing)
Result from 0-100 ECTS points		
0-50 practical module	0-30 theoretical module	0-20 module of independent work

Source: developed by the authors on the basis on the working curriculum of the educational discipline (educational component) “Occupational Safety and Health in the Industry. Civil Protection”

After studying this educational component, students as seekers for higher education at the second (master’s) level must have basic professional competencies, implemented in the following learning outcomes that meet the requirements of the Standard of Higher Education of Ukraine of the second (master’s) level, 015 “Professional education (by specialization)” (18.11.2020, No. 1435) (Standard of Higher Education of Ukraine. No. 1435, 2020):

➔ **Learning outcomes 05.** To choose the optimal strategy of teamwork, interpersonal communication and interaction when implementing complex projects in professional education and interdisciplinary projects, it is very important to integrate ethical, legal, social and economic considerations. This involves creating an inclusive environment that encourages diverse perspectives and collaborative problem solving. Effective communication is key, requiring clear, open channels for sharing ideas and feedback. Decision-making should be guided by ethical considerations, ensuring respect and fairness, while legal aspects concern compliance with relevant regulations. Social factors involve understanding the impact on communities and stakeholders, while economic aspects consider budget constraints and resource optimization. Balancing these elements contributes to a holistic approach that improves project outcomes and participant engagement.

➔ **Learning outcomes 12.** To achieve this, it is important to constantly update and apply best practices in the management of occupational safety and health and civil protection. This involves not only implementing the latest safety technologies and methodologies, but also integrating international best practices into the local context. Regular training and familiarization of employees with the latest safety regulations and technologies is crucial. In addition, creating a safety culture that prioritizes employee well-being as a fundamental component of professional success is considered to be vital. This culture should encourage proactive risk assessment, prompt reporting and elimination of potential hazards, and a collective commitment to maintaining a safe work environment. Moreover, using data analytics to predict safety measures can significantly reduce accidents and improve working conditions. Achieving program learning outcomes is ensured through the implementation of innovative teaching methods (interactive technologies (case method, brainstorming, business/role play), blended learning method, project method), which is consistent with contemporary developments trends of the specialty in the labor market. When implementing a competency-based approach for quality training of the future professional education specialist, the scientific and methodological support of the educational process plays an important role (Table 4).

Table 4. Scientific and methodical support of the educational process, ensuring the achievement of defined goals and program learning outcomes

Standards of Higher Education	Standard of Higher Education of Ukraine of the second (master’s) level, 015 “Professional education (by specialization)” (18.11.2020 p. № 1435)	Educational program “Professional education (by specialization)” of the second (master’s) level
	Standard “Professional Education Teacher” No. 38-OD dated 29.12.2022	

Table 4. Continued

Curriculum	Working curriculum
	Syllabus
Methodical support	Textbooks, manuals, educational and methodological guides, collections of scientific works
	Instructional and methodical materials for practical classes, individual semester assignments for practical classes, for independent work of higher education students in the academic discipline; test tasks for current and final control
	Regulatory documents on labor protection and civil protection
	Primary source and illustrative materials, etc.

Source: developed by the authors on the basis of the Law of Ukraine “On Higher Education”, state standards of higher education, Regulations on the organization of the educational process at HSUP and other regulatory documents of HSUP

The teacher, using various forms and methods of training, forms the professional competency of future specialists, influences the development of their thinking, memory, attention, logic, intuition, creativity, sets them up for self-development, self-improvement and individualization, so that in the future they can skillfully, efficiently, concisely and clearly express their own position and opinion in the new conditions of future professional activity. The means of diagnosing the program learning outcomes of the educational component “Occupational Safety and Health in the Industry. Civil Protection” include: final testing (exam) in the Moodle system; analytical reports, abstracts, essays; student presentations and speeches at scientific events, publication of scientific papers; independent work; work in a modular environment. The primary focus should be on higher education students’ mastery of professional competencies and the intensification of their cognitive and educational activities. This entails the adoption of certain pedagogical conditions of study that use a competency-based approach for the qualitative training of future professional education specialists (transport, occupational safety and health):

- adaptation of higher education students to the educational process in the conditions of martial law in Ukraine (pedagogical consulting, coaching, tutoring, etc.);
- organization of the educational process using conceptual approaches: competency-based, systemic, personality-oriented, activity-based, student-centered;
- use of interdisciplinary connections in the process of formation the professional competence of future professional education specialists (transport, occupational safety and health);

- motivation and stimulation of masters to master professional competency;
- application of modern pedagogical teaching technologies (innovative, ICT, modeling, individualization, problem-based learning, project method, etc.);
- bringing the educational process closer to future professional activities;
- selection and application of various methods and forms of education: surveys, search work with scientific and methodical literature; analysis of basic concepts by topic; problem situations; heuristic conversation; discussion; development of an individual program; brainstorming; group work; modeling and designing professional activities; project development; preparation of recommendations, methodological materials, etc.;
- creation of favorable learning conditions for self-development and self-improvement of masters.

Undoubtedly, in the professional training of future professional education teachers, the main goal is to form their competencies based on the academic and professional program and educational and qualification characteristics to ensure the quality of the training of students of higher education and to meet the demand on the labor market. The implementation of a competency-based approach in HEIs has advantages and involves the training of a comprehensively developed personality who will resolve challenging specialized assignments and real-world issues in professional education (transport, occupational safety and health) and in industrial activities. This will contribute to the continuous professional development, growth, self-realization and career growth of specialists of the new formation in today’s conditions (Table 5).

Table 5. Advantages of implementing a competency-based approach to training future specialists in professional education

Production, enterprise, educational institutions	Higher education institutions	Seekers for higher education (students)
Providing the labor market with highly qualified specialists of a new formation	Providing students with fundamental theoretical and practical training	Acquiring competencies for further employment and professional growth
Development of labor resources	Production of highly qualified, competitive specialists of a new formation	Capacity to deal with intricate specialized assignments and real-world issues in professional education (by specialization) and industrial activity
Development of the specialty in the labor market		Professional activity, self-realization, career growth

Source: developed by the authors on the basis on their own research

Thanks to the analysis of the results of the examination session, it was established that the integration of a competency-based methodology in the instruction of future professional education specialists indicates a qualitative rate of success of higher education students, which is within 71-80%, and an absolute success rate of 100%. One of the education sector's primary responsibilities, which must be carried out and followed in order to successfully implement the requirements of the state policy in the field of occupational safety and health, is to increase the level of all preventive work to prevent accidents and occupational diseases at the very beginning of professional growth and career development of a future professional education specialists (transport, occupational safety and health).

CONCLUSIONS

The article analyzes the experience of Ukrainian and foreign scientists on this issue. It has been found that by focusing on professional competencies, HEIs can contribute to the building of educational spaces that emphasize practical skills, critical thinking and problem-solving skills, ensuring that students are not only knowledgeable but also able to apply their knowledge in a variety of situations. The study showed that a competency-based approach, coordinated with a well-organized model of the educational process in HEIs and supported by relevant regulatory documents, is of crucial importance for the effective training of future specialists. This model serves as a fundamental basis for the development of professional competencies of higher education seekers in accordance with their educational and professional programs and qualification standards. This approach is an innovative contribution to increasing the level of training of coming experts in the area of professional education, ensuring thorough implementation of a competency-based approach. It emphasizes the importance of integrating theoretical knowledge with practical skills adapted to the specific requirements of the industry, which facilitates a smooth transition of graduates into their professional roles. This strategy not only raises the standards of professional education, but also responds to the changing needs of today's workforce, ensuring that

graduates are well prepared and adapted to the dynamic challenges of their profession.

The study of the normative educational component "Occupational Safety and Health in the Industry. Civil Protection" contributes to the formation of professional competences. After studying the academic course, higher education students are able to set and solve professional tasks in the future professional activity according to the program learning outcomes. Taking into account the updating of the system of professional education in compliance with the modern demand in the labor market, the peculiarities of the organization of the educational process and the requirements of occupational safety and health and civil protection, the authors have identified pedagogical conditions for the implementation of quality training of future professional education specialists. The application of conceptual approaches (competency-based, systemic, personality-oriented, activity-based, student-centered, etc.) to the educational process is based on the Regulations on the organization of the educational process at HSUP (Regulations on the organization of the educational process at the Hryhorii Skovoroda University in Pereiaslav, 2021) and existing HSUP regulatory documents. A comprehensive approach and the quality of educational services in the educational process have a positive effect on the learning outcomes, and provide prospects for future specialists to be competitive in the labor market. The research that was done does not address every facet of the issue that was raised. Prospects for further research in this direction will be aimed at studying the impact of innovative educational technologies on the development of competencies in higher education.

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CONFLICT OF INTERESTS

There is none.

REFERENCES

- [1] Abelha, M., Fernandes, S., Mesquita, D., Seabra, F., & Ferreira-Oliveira, A.T. (2020). Graduate employability and competence development in higher education – a systematic literature review using PRISMA. *Sustainability (Switzerland)*, 12(15), article number 5900. doi: 10.3390/SU12155900.
- [2] Angelova, V., & Terlemezyan, H. (2023). Development of the digital competences of perspective primary-school teachers. *Pedagogika-Pedagogy*, 95, 851-862. doi: 10.53656/ped2023-7.1.
- [3] Belur, J.M., Patil, S.V., Mahantshetti, S., & Patil, S. (2022). The boosters that foster creativity-competencies among MBA students: Identifying and modelling the relationships. *Higher Education for the Future*, 9, 216-233. doi: 10.1177/23476311221108228.
- [4] Borodiyenko, O., Malykhina, Y., Spryndys, S., Kamenska, I., & Bokshyts, O. (2023). Ukrainian universities as clusters of regional socioeconomic development: Inspirations from European experience. *Financial and Credit Activity Problems of Theory and Practice*, 3(50), 447-456. doi: 10.55643/fcaptop.3.50.2023.4026.
- [5] Cejas, M., Mendoza, D., Cejas, M., & Giniebra, U.R. (2023). Labour competences as a key axis in higher education within the framework of the substantive functions. *Kasetsart Journal of Social Sciences*, 44, 1013-1018. doi: 10.34044/j.kjss.2023.44.4.05.

- [6] Code of civil protection of Ukraine №5403-VI. (2012). Retrieved from <https://zakon.rada.gov.ua/laws/show/5403-17#Text>.
- [7] Ivanytska, N. (2023). Domestic and foreign experience of forming research competences of participants in the educational process. *Social Work and Education*, 10, 361-370. doi: 10.25128/2520-6230.23.3.9.
- [8] Kamenska, I.S. (2019). Competently approach to preparing masters from professional education. *Transactions of Kremenchuk Mykhailo Ostrohradskyi National University*, 6(119), 11-16. doi: 10.30929/1995-0519.2019.6.11-16.
- [9] Law of Ukraine №1556-VII. (2014). Retrieved from <http://zakon4.rada.gov.ua/laws/show/1556-18>.
- [10] Law of Ukraine №2145-VIII. (2017). Retrieved from <http://zakon5.rada.gov.ua/laws/show/2145-19>.
- [11] Law of Ukraine №2694-12. (1992). Retrieved from <https://zakon.rada.gov.ua/laws/show/2694-12#Text>.
- [12] Marinič, P. (2023). Identity of vocational education and training teacher: Pathways and Competences. *European Conference on Management Leadership and Governance*, 19(1), 488-494. doi: 10.34190/ecmlg.19.1.1904.
- [13] Novak, O., Levchenko, L., Levchenko, I., & Kostenko, O. (2019). Features of Master's degree programs in Ukraine: Formation of administrative competencies. *Scientific Bulletin of National Mining University*, 1, 141-146. doi: 10.29202/nvngu/2019-1/18.
- [14] Order of the Ministry of Education and Science of Ukraine №969/922/216. (2010). Retrieved from <https://zakon.rada.gov.ua/laws/show/z1057-10#Text>.
- [15] Prieto-Prieto, J., Cruz-Rodríguez, J., García-Riaza, B. & Hernández-Serrano, M. (2024). Competences expected and gained during the teaching practicum: Analysis of three competence areas affected during the pandemic. *Education Sciences*, 14(1), article number 88. doi: 10.3390/educsci14010088.
- [16] Puiggali, J., Tesouro, M., & Jacas, N. (2023). Analysis of generic competencies in the teaching degrees: A study from the perspective of the students of the University of Girona. *Revista Electrónica de Investigación y Evaluación Educativa*, 29(2), article number 4. doi: 10.30827/relieve.v29i2.27017.
- [17] Regulations on the organization of the educational process at the Hryhorii Skovoroda University in Pereiaslav. (2021). Retrieved from <https://drive.google.com/file/d/1dF7XrpOSEfmRI3uvqXKerSMqopd27Bn0/view>.
- [18] Rieckmann, M. (2019). *Education for sustainable development in teacher education. An international perspective. Environmental Education*. Delhi: Studera Press.
- [19] Sakun, M.M., Moskalyuk, I.V., Atrashkova, O.O., & Yakovenko, A.M. (2019). *Labor protection in the fields of agriculture*. Odesa: VMV Publishing House.
- [20] Sapargaliyeva, A.Zh., Shynybekova, A.S., Molbassynova, Z.M., Tasbolatova, R., & Nurzhanova, T.T. (2023). Innovative educational technologies and competencies in higher education. *Higher Education for the Future*, 10(1), 110-122. doi: 10.1177/23476311231155523.
- [21] Scherak, L., & Rieckmann, M. (2020). Developing ESD competences in higher education institutions-staff training at the university of Vechta. *Sustainability (Switzerland)*, 12(24), article number 10336. doi: 10.3390/su122410336.
- [22] Schöning, S., & Mendel, V. (2023). Basics of competence orientation. In *Competence development in controlling and management accounting* (pp. 81-149). Berlin: Springer. doi: 10.1007/978-3-658-39390-8_3.
- [23] Serrano, R., Washington, M., & Rodriguez, K., & Amor, M.I. (2019). Validating a scale for measuring teachers' expectations about generic competences in higher education: The Ecuadorian case. *Journal of Applied Research in Higher Education*, 11. doi: 10.1108/JARHE-09-2018-0192.
- [24] Shobha, S., Gowtham, N., & Surekha, T.P. (2020). Faculty competency framework: Towards a better learning profession. *Procedia Computer Science*, 172, 357-363. doi: 10.1016/j.procs.2020.05.055.
- [25] Spyropoulou, N., & Kameas, A. (2024). Augmenting the impact of STEAM education by developing a competence framework for STEAM educators for effective teaching and learning. doi: 10.3390/educsci14010025.
- [26] Standard of Higher Education of Ukraine. №1435. (2020). Retrieved from https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2020/11/20/015_profesiyna_osvita_mahistr.pdf.
- [27] Zhu, S., Hao Yang, H., Xu, S., & MacLeod, J. (2020). Understanding social media competence in higher education: Development and validation of an instrument. *Journal of Educational Computing Research*, 57(8), 1935-1955. doi: 10.1177/0735633118820631.

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Шляхи реалізації компетентнісного підходу для якісної підготовки майбутніх фахівців професійної освіти (транспорт, охорона праці)

Анотація. Проблема якісної підготовки майбутніх фахівців професійної освіти шляхом реалізації компетентнісного підходу при вивченні здобувачами вищої освіти освітнього компоненту «Охорона праці в галузі. Цивільний захист» залишається мало дослідженою та набуває особливої актуальності, так як компетентнісний підхід передбачає особливу організацію освітнього процесу в закладі вищої освіти. Відповідно, метою дослідження було розкрити особливості та шляхи реалізації компетентнісного підходу до якісної підготовки майбутніх фахівців професійної освіти (транспорт, охорона праці) на прикладі вивчення навчальної дисципліни «Охорона праці в галузі. Цивільний захист». Для реалізації поставленої мети застосовано взаємодоповнюючі методи дослідження: теоретичний аналіз, синтез та узагальнення наукових видань, навчально-методичної, науково-педагогічної літератури та нормативної документації, для уточнення сутності ключових понять, виявлення стану проблеми дослідження, моделювання організації освітнього процесу та обґрунтування педагогічних умов навчання; аналіз освітніх програм, педагогічної діяльності викладачів закладів вищої освіти задля уточнення процесуальних особливостей реалізації компетентнісного підходу. Авторами виділено модель організації освітнього процесу при реалізації компетентнісного підходу до підготовки майбутніх фахівців професійної освіти в умовах Університету Григорія Сковороди в Переяславі. Встановлено, що такий перехід дає змогу розвивати основні навички, які мають вирішальне значення для застосування знань у реальному світі, акцентуючи увагу на вирішенні проблем, критичному мисленні та здатності адаптуватися до мінливих ситуацій. Визначено, що компетентнісний підхід сприяє створенню навчального середовища, в якому студенти активно залучені до навчання, заохочуючи їх брати на себе відповідальність за свій навчальний процес. Крім того, освіта, заснована на компетентностях, тісно пов'язана з потребами ринку праці, гарантуючи, що випускники володіють відповідними навичками і знаннями, яких вимагають роботодавці, тим самим підвищуючи їхню здатність до працевлаштування. Використання результатів цього дослідження та впровадження компетентнісного підходу в професійній освіті може не лише покращити навчальний процес, але й зробити значний внесок у підготовку всебічно розвинених, кваліфікованих фахівців, готових до вирішення проблем у своїх галузях

Ключові слова: якість освітніх послуг; компетентності; результати навчання; освітня програма; освітня галузь; професійна безпека