



STATUS OF PREPAREDNESS OF VOCATIONAL EDUCATION SYSTEM TO COUNTER REAL AND POTENTIAL THREATS TO NATIONAL SECURITY AND NATIONAL INTERESTS OF UKRAINE IN THE CONDITIONS OF EXTERNAL AND INTERNAL CHALLENGES

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Abstract.

The relevance of the paper is due to the need to substantiate the challenges and problems that hinder the processes of modernization of domestic vocational education and may pose a threat to national security and national interests of Ukraine.

Purpose: to identify the main external and internal challenges for the system of vocational education in Ukraine, to analyze the identified problems, to determine the degree of their impact on the system of domestic vocational education, to substantiate the ways to overcome them.

Methods: analysis of scientific and other sources – to identify external and internal challenges of the vocational education system; expert assessment – to rank the identified challenges, to determine their impact on the system of domestic vocational education and the level of danger to the national interests of Ukraine; systematization and generalization – to substantiate the ways to overcome these problems.

Results: based on the analysis of modern legislative and regulatory sources, materials and recommendations of international and national scientific-practical conferences, seminars, webinars, publications in professional printed and electronic publications, a list of external and internal challenges for vocational education in Ukraine is formed; the problems determined by them are substantiated; the degree of their influence on the system of domestic vocational education is determined; proposals are formulated for their solution.

Conclusions: A number of challenges have been identified: the external challenges (transformation of world labor markets due to changing energy paradigm, introduction of rational models of consumption and production, intensification of "green policy"; transition of developed countries to a new technological system and digital economy; information war against Ukraine; staff shortage labor markets and the resulting strong labor migration from Ukraine) and the domestic challenges (public and economic demand for a new quality vocational education system; high unemployment, shortage of competitive skilled workers in domestic labor markets). Based on the method of expert evaluation, we have identified the problems that, in the conditions of hybrid war, may pose the greatest threat to the national interests of Ukraine (low quality of professional training of teachers of vocational education institutions; insufficient provision of educational programs for critical thinking of modern youth; teachers and students of vocational education institutions), its economic

security (inconsistency of quality of training of future skilled workers to the requirements of modern employers, insufficient formation of entrepreneurial, career, self-educational competencies of graduates; low career guidance; education), as well as environmental and energy independence (low level of energy saving and environmental competence of graduates of vocational education institutions, low motivation of partners to participate in the modernization of vocational education).

Keywords: *vocational education, external and internal challenges, information warfare, competencies, educational policy.*

Introduction. The XXI century has brought to the Ukrainian vocational education system, as well as the education system as a whole, many new external and internal challenges, qualitative analysis of which and timely response to identified problems can be of strategic importance not only to ensure the effectiveness of all components of the education system, but the personnel, information, economic, ecological, energy security of Ukraine.

Sources. Priority areas for the development of education in Ukraine in the conditions of the hybrid war are quality education and civic, national and military-patriotic education. These ideas were reflected in numerous documents, including: "Strategy of national-patriotic education of children and youth for 2016-2020", "Concept of national-patriotic education of children and youth" (2015), State Targeted Social Program "Youth of Ukraine" on 2016–2020, State Targeted Social Program "Youth of Ukraine" for 2021–2025, "Concepts of Implementing Media Education in Ukraine" (2016), etc.

The paper aims to identify the main external and internal challenges for the system of vocational education in Ukraine, to analyze the identified problems, to determine the degree of their impact on the system of domestic vocational education, to substantiate the ways to overcome them.

Methods: : analysis of scientific and other sources – to identify external and internal challenges of the vocational education system; expert assessment – to rank the identified challenges, to determine their impact on the system of domestic vocational education and the level of danger to the national interests of Ukraine; systematization and generalization – to substantiate the ways to overcome these problems.

Results and discussion. Based on the analysis of modern legislative and regulatory sources, materials and recommendations of international and national scientific conferences, seminars, webinars, publications in professional printed and electronic publications, etc., a list of internal and external challenges was formed, expert assessment of their significance, the problems determined by them are substantiated and proposals for their solution are formulated. A

number of challenges have been identified: external (transformation of world labor markets due to changing energy paradigm, introduction of rational models of consumption and production, intensification of "green policy"; transition to a new technological way and digital economy; information war against Ukraine; staff shortages in foreign labor markets due to strong labor migration from Ukraine) and domestic (demand of society and the economy for a new quality vocational education system; high unemployment, shortage of competitive skilled workers in domestic labor markets).

In order to assess the importance of the challenges facing modern vocational education in Ukraine, we conducted *an expert survey of 25 vocational education stakeholders* – scientists, research and teaching staff with experience in vocational and professional higher education, representatives of public and professional associations, whose activities are to some extent related to the training of future skilled workers. According to the results of the expert assessment, we identified the problems that (in the conditions of hybrid war) can pose the greatest threat to the national interests of Ukraine (low quality training of teachers of vocational education institutions; insufficient provision of educational programs to develop critical thinking of modern youth; teachers and students of vocational education institutions), its economic security (inconsistency of quality of training of future skilled workers to the requirements of modern employers, insufficient formation of entrepreneurial, career, self-educational competencies of graduates; low career guidance; education), as well as environmental and energy independence (low level of energy saving and environmental competence of graduates of vocational education institutions, low motivation action of partners to participate in the modernization of vocational education).

The demand of society and economy for a new quality vocational education system revealed a number of problems, including: slow pace of its modernization, quantitative and qualitative changes in the contingent of vocational education, critical state of the vocational education network, imperfect

management system, low rates of dual education, imperfect motivation of social partners to participate in the modernization of vocational education, insufficient quality of professional training of teachers of vocational education institutions, low prestige of domestic vocational education.

The slow pace of modernization of vocational education is due to a number of legal problems (Kremen, 2021, p. 78), which hinder the decentralization of management of vocational education institutions (including their transfer to communal ownership), expanding the autonomy of vocational education institutions, public-private development partnerships, introduction of a dual form of education, opening of training and practice centers, qualification centers, etc. The laws "On Education", "On Professional Higher Education", "On Higher Education", "On Complete General Secondary Education" adopted in Ukraine do not solve urgent problems of vocational education, hindering the process of its development.

Given the identified problem, we can outline a number of priorities to overcome it, namely: adoption of the Law of Ukraine "On Vocational Education", updating the legal framework of vocational education in accordance with modern legislation, development of standards for assessing professional qualifications based on the European Credit Transfer System in the field of vocational education (ECVET).

The critical state of the network of vocational education institutions (State Statistics Service of Ukraine. Vocational and Technical Education, 2020) is due to a reduction of their number by almost half (from 1285 in 1991 to 711 in 2020). At the same time, reducing the network of vocational education institutions creates a risk of restricting the access of many school leavers to study due to the remote location of large educational institutions.

Solving this problem requires a list of important tasks. First of all, it is necessary to improve the mechanisms for optimizing the network of vocational education institutions. This can be achieved through: the consolidation of educational institutions through the association of the understaffed; creation of professional colleges and educational and practical centers in the field with the use of the latest production technologies; deployment of a network of qualification centers, career centers and centers of professional excellence.

It is necessary to develop standard provisions for the creation of new educational institutions on the basis of partnership with employers (business incubators, educational and production clusters, technology parks, etc.).

It is expedient to give the leading vocational education institutions the status of Centers of Professional Excellence, which will ensure the acquisition of quality vocational education and professional qualifications by young people and adults in accordance with the needs of Industry 4.0.

It is important to create conditions for attracting investments of social partners in the development of training and practice centers of vocational education institutions (by industry) and expand the functions of training and practice centers of vocational education institutions to obtain partial qualifications (short-term programs).

Quantitative and qualitative changes in the contingent of students of vocational education institutions (MES of Ukraine. Vocational Education, 2020) are expressed in a reduction of (more than two and a half times) the contingent of students (from 648 thousand in 1991 to 247 thousand in 2020). In 284 educational institutions the contingent of applicants is less than 300 people, there are still 35 incomplete institutions (up to 100 people). In 2020, only 23% of graduates who completed general secondary education chose to obtain vocational education. This is usually due to the demographic crisis and the decrease in Ukraine's population by 10 million people (from 51.8 million in 1991 to 41.6 in 2021). At the same time, for a long time there was an unjustified increase in the number of higher education institutions (from 149 to 281), which led to a reduction in the contingent of vocational education institutions. Thus, there was a shortage of skilled workers and, consequently, demand for working professions increased (in 2021 there were up to three applicants for one job). Higher education institutions produced specialists who were not in demand in the labor market, which forced university graduates to enter the market of working professions (according to popular job search sites, in 2020 48.7% of people with higher education and 5.7% - with incomplete higher education). Such quantitative processes determined the qualitative changes in the contingent of vocational education institutions. According to the results of in-depth interviews conducted in 2020 by the German Society for International Cooperation (GIZ) with the support of the EU4Skill program to plan and implement the nationwide campaign of the Ministry of Education and Science of Ukraine to reform vocational education, the existence of the negative stereotype of vocational education of low-educated students with low success rates was discovered. On the other hand, in Germany, for example, mastering a job qualification is mandatory even for engineering

specialties. It testifies to the high prestige of vocational education and its support by the state.

To overcome this problem, it is necessary to solve at least two important tasks: to ensure the optimal ratio of the number of institutions of vocational (professional and technical), professional higher and higher education, taking into account the needs of the economy of the state and regions; to optimize the network of higher education institutions (for example, to create one national university in each oblast (or region) on the basis of existing state higher education institutions, which would take into account the needs of regional labor markets, train specialists in all relevant areas, have close ties with all institutions of vocational and professional higher education of the oblast/region). This will help ensure the continuity of all levels of education (from vocational to higher); reduction of management staff; elimination of duplication of many specialties and their teaching in non-core institutions of higher education; increasing the number of high school graduates ready to develop their professional careers, starting with mastering the working profession, etc.

Imperfect management system of vocational education institutions is also a powerful factor hindering the processes of modernization of domestic vocational education (Kremen, 2021, p. 80). Decentralization of management has intensified the transfer of vocational education institutions from state to communal ownership. On the one hand, this process takes into account the sectoral and regional characteristics of the labor market, improves funding and modernization of material and technical base and involves various stakeholders in shaping the content and quality of vocational education. At the same time, the system of vocational education still does not enshrine modern approaches and principles of management, processes of autonomy of educational institutions, mechanisms of public-private partnership, sources of funding and motivating teachers to professional development and self-development, and employers to actively involve in modernization of vocational education.

Improving the existing system of management of vocational education institutions depends on the successful implementation of a number of tasks, namely: updating the legal and educational and methodological support for the management of vocational education in institutional and dual forms; development of mechanisms for the development of public-private partnership through the creation of innovation structures (clusters, campuses of professions and qualifications, hubs, technology parks,

etc.); introduction of mechanisms to motivate employers to participate in the educational process; expanding the role and functions of regional vocational education councils; creation of independent advisory bodies of educational institutions on the basis of public-private partnership (advisory committees, supervisory boards, advisory boards on specialties); application of the principles of functioning of the state-regulated model of vocational education in training of future skilled workers in professions/specialties of national importance (with the possibility of using elements of the dual form of education); implementation of the principles of functioning of the market-oriented model of vocational education in the training of future skilled workers in professions/specialties in demand in regional labor markets; conducting joint research with employers on an ongoing basis to identify occupations and qualifications relevant to the labor market (Radkevych, & Yershova, ed., 2021).

The low pace of implementation of the dual form of education (Kulalaieva, ed., 2019) does not fully overcome the problems associated with the quality of training of future skilled workers (MES of Ukraine. The concept of training specialists in the dual form of education, 2018). In Ukraine, an experiment to introduce elements of dual education in the educational process of the first three vocational education institutions (Zaporizhia, Kyiv, Lviv) was launched in 2015. This showed obvious positive results: the ties of educational institutions with employers were strengthened, the costs of educational institutions for materials and utilities were significantly reduced, financial revenues to their budgets increased, the quality of training of future skilled workers increased, and the employment rate of graduates increased by 97%. In the 2020-2021 academic year, elements of the dual form of education have already been implemented in 217 institutions, where 12,395 people studied. At the same time, Ukraine has not been able to introduce dual education in the form common in European countries. Until now, according to Ukrainian legislation, the priority responsibility for the quality of professional training of future specialists rests not with employers, but with educational institutions. The participation of social partners in the modernization of domestic vocational education, in particular, in the introduction of dual education, remains legally uncertain and therefore employers do not have sufficient motivation to be actively involved in the development and implementation of modernization of educational projects.

Given the proven economic prospects for the introduction of a full-fledged dual form of vocational

education, it is necessary to bring the dual form of education in Ukraine in line with the criteria and requirements of European practice; to develop legal documents for a clear division of rights and responsibilities of all subjects in this process; to substantiate the mechanisms of preferential taxation of employers who will participate in the training of qualified professionals.

Unsufficient quality of professional training of teachers of vocational education institutions is one of the most inhibitory factors in improving the quality of domestic vocational education (Kremen, 2021, p. 79; Yershova, 2018; Radkevych, 2021). Surveys conducted during the research of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine (2017-2021) showed that pedagogical institutions of vocational education do not have modern skills: application of innovative pedagogical technologies, standardization of vocational education, development and use of SMART complexes, career, entrepreneurial, energy-saving, health-saving, self-educational, civic and other relevant competencies (Alieksieva et al., 2021; Pryhodii et al., 2020; Radkevych O., 2020), the necessary future digital teachers for professional training of skilled workers for modern labor market.

This requires some changes in the professional training of future teachers of vocational education institutions, namely: improving the content of socio-humanitarian training of future teachers of vocational education institutions, taking into account the challenges associated with hybrid warfare; ensuring the development of future teachers of vocational school of technological and digital culture and skills of educational management; introduction of various mechanisms for payment of educational services and stimulation of teacher training (educational vouchers, grants, nominal scholarships, etc.); identification of the main sources of funding for the vocational education system, implementation of the best European practices of interaction of educational institutions with stakeholders, promotion of professional and academic mobility of teachers.

The low prestige of vocational education has a very negative effect on the pace of its modernization. In 2020, the German Society for International Cooperation (GIZ), with the support of the EU4Skill program, conducted a series of in-depth interviews to plan and implement the nationwide campaign of the Ministry of Education and Science of Ukraine to reform the vocational education system. In the process of focus groups, a stereotype was spread in society that the contingent of vocational education institutions is dominated by low-educated students

with low school performance. It has been also found that the participants of the work of the target groups connect the prestige of vocational education with the prospects that open up for graduates the professions they have acquired. And economic reasons prevail among the identified reasons – decent wages and the prospect of starting own business. Most participants in in-depth interviews rate the image of vocational education as low. At the same time, they recognize the great potential of vocational education for the development of communities, cities and regions.

To unleash this potential, it is necessary to develop a National Program for the Promotion of Vocational Education among Youth and Adults; to create educational programs taking into account the provisions of European principles (multilevel, flexibility, integration, continuity, etc.); to simplify the transit between levels of vocational and academic education; to develop short-term (modular) professional educational programs that will enable the accumulation of credits and the transition to higher levels of the National Qualifications Framework; to introduce the independent recognition of professional qualifications. In order to increase the prestige of a graduate of a vocational education institution, it is necessary to create conditions for the implementation of the principle of freedom to choose a decent job.

The shortage of competitive skilled workers in the domestic labor markets is another powerful challenge for the vocational education system, which has revealed the inconsistency of the quality of training of future skilled workers to the requirements of modern employers. According to the World Bank's Skills for Modern Ukraine (Del Carpio et al., 2018), more than 58% of employers surveyed said that graduates of various levels of education did not have the relevant knowledge and practical skills needed for effective professional activity. In 108 key sectors of the Ukrainian economy, four out of ten companies state that there is a significant gap between the real skills of workers and employers' expectations about the competencies needed to achieve employees' business goals (MES of Ukraine). The main reason for this is seen in the insurmountable conservatism of the vocational education system.

In view of this, it is necessary to ensure the improvement of scientific and methodological support for the organization of professional training of future skilled workers and the solution of a number of other tasks: updating the content of vocational education based on the competence approach; development of educational programs for the training of skilled workers, taking into account the universal compe-

tencies, civic values and respect for cultural diversity; supplementing their content with disciplines of technical and technological direction (integrated STEM-disciplines); establishing a threshold score for admission to vocational colleges (in particular, high-tech professions); development of the National program of digitalization and technologicalization of the educational process in vocational education institutions; improving the national online platform for communication between teachers and students on quality assurance in vocational education; implementation of quality management (TQM) with subsequent certification for compliance with international standards (ISO); creation of a single national automated system for internal monitoring of the quality of vocational education; introduction of mechanisms for assessing the quality of activities of entities (providers, experts), whose powers include external monitoring of the quality of vocational education (Radkevych, Borodiienko, & Kravets, 2021).

Another powerful challenge is the high level of unemployment, the analysis of which shows the lack of professional, entrepreneurial, career, self-educational competencies of graduates of vocational education institutions.

According to the analytical report "Attitudes towards vocational education and its reform in Ukraine" (2020), the criteria for success of a graduate of a vocational education institution are material well-being (high earnings), moral satisfaction with work, starting a business, employment in the native country and abroad). Among the main factors of life success, the interviewed participants of the target groups name the activity, initiative, desire for self-realization, ability to program one's life, ability to use time rationally, etc. At the same time, according to the results of surveys conducted by the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine in the framework of all-Ukrainian experiments on youth readiness for entrepreneurship (2018-2021), the vast majority of students admits the insufficient development of these personal qualities. According to GIZ, employers are very negative about the ability of modern vocational education to respond quickly to requests of society, as they are unable to qualitatively form the future skilled workers' soft skills. This indicates the urgency of the problem of forming the soft skills needed for self-employment, discovery and self-employment of affairs.

In order to develop future skilled workers' entrepreneurial, career, self-educational and other competencies necessary for starting and running their

own business, a number of interrelated tasks must be implemented:

- development of the curriculum "Fundamentals of Entrepreneurship" with modules "Innovative Entrepreneurship", "Youth Entrepreneurship", "Social Entrepreneurship", "Self-Management", etc. and their implementation in all vocational education institutions;

- ensuring regulatory and legal financing of activities in vocational education institutions of career centers (introduction of a full-time structural unit with the position of career counselor, to whom school psychologists, social educators, class teachers, dormitory educators are subordinated; system of systematic collection of information on the career path of graduates; introduction of training courses and electives in the development of youth entrepreneurship in career centers);

- promoting the creation of business centers in educational institutions in accordance with the profile of training future professionals;

- development of a program of professional development of teachers in matters of professional career counseling and educational consulting;

- creation of qualification centers in vocational education institutions for confirmation of professional qualifications by persons, development of normative-legal base of their activity;

- development of software for vocational education institutions to create websites in order to place electronic portfolios of students, ensure their career self-development and secure communication with potential employers;

- ensuring the use of modern pedagogical innovations by vocational education institutions in the development of key competencies of future skilled workers.

In addition to internal challenges, the domestic vocational education system is also forced to take into account powerful external challenges: the information war against Ukraine; staff shortages in foreign labor markets and the resulting strong labor migration from Ukraine; transformation of world labor markets due to the change of energy paradigm, introduction of rational models of consumption and production, intensification of "green policy"; the transition of developed countries to a new technological system and digital economy.

The information war against Ukraine is powerful and long. It is also directed against each of its citizens, influencing the system of his life, professional and civic values, motivation to choose a career path, attitude to the profession, the workforce, society, the state as a whole.

This challenge proved the existence of a very important problem – *the imperfect training of teachers of vocational schools for professional activities in a hybrid war*. The reason for this was the marginalization of socio-humanitarian education in Ukraine as a whole (Yershova, 2017; Yershov, 2019; Akser, 2021). It is obvious that under such conditions a teacher of a vocational education institution should train not only a professional, but also an effective person, a responsible family man and a patriotic citizen who is able to withstand external and internal challenges (Yershova, 2018). In fact, one of the tasks of training future teachers of vocational schools should be to form them as intellectuals and the future national elite of the country. However, the results of the sociological study "Youth of Ukraine – 2018", which assessed and analyzed 24 forms of youth participation in society (volunteering, participation in civil society and society through the Internet, self-defense, mobility, political activity etc.) indicate that among the priority preferences of modern students of many higher education institutions, socio-political newspapers, magazines and television programs are not always the initiative to organize important public, civic, patriotic actions, if such an initiative is, the stimulus is mostly not an educational institution, but external institutions).

Therefore, it is necessary to recognize the state-building role of socio-humanitarian education (Akser, 2021), and to ensure quality training of future teachers of vocational education institutions for the development of students' civic competence (Yershova, 2017; 2018). This requires a review of the content of educational programs for the training of future teachers for the vocational education system, the development and dissemination of relevant manuals and recommendations, the inclusion of civic education and upbringing in the content of advanced training courses for vocational school teachers.

Another important problem identified by the hybrid war in which Ukraine is involved is the emergence of a negative trend of *restraining the development of critical thinking of modern youth*. Despite the fact that critical thinking is one of the most recognized key competencies in the modern civilized world, this skill is not given due attention in domestic educational institutions (Yershov, 2021). For example, in many higher education institutions, the discipline "Culturology", which allowed students to present Ukrainian culture in a global context, has been replaced by a narrower course "the History of Ukrainian Culture". At a time when the world is facing the threat of the rapid spread of religious extremism and terrorism, Ukrainian students do not always

have the opportunity to study religious studies. A number of socio-humanitarian sciences are exposed to the so-called "free choice" of the student, which de facto does not exist in the vast majority of institutions. For example, in the "hybrid war" political science was such a "list" – the main discipline designed to explain to students the essence of the political system, government and state, to learn to analyze the forms and methods of political actors, to understand global politics. Thus, higher education institutions that train teachers for the vocational education system, in fact, do not provide graduates with the systematic knowledge necessary for conscious participation in public and political life or in national referendums, which address crucial issues of statehood (Yershova, 2017). Therefore, students of vocational education institutions do not have the opportunity to receive a systematic and high-quality civic education, as neither educational programs nor the example of vocational school teachers contribute to this.

The severity of this problem can be removed by solving a number of tasks, namely:

- to monitor the quality of socio-humanitarian education of students of higher education institutions (in accordance with the requirements of paragraph 1 of Article 1 of the Law of Ukraine "On Education", which states that the autonomy of higher education institutions provides not only independence but also responsibility of the institution, making decisions);

- to develop effective mechanisms to provide the graduate of higher education with a full cycle of knowledge about man and society, as required by the educational legislation of Ukraine, where higher education provides for the acquisition of such a system of competencies that would include not only professionally important knowledge, skills and abilities. civic qualities, moral and ethical values (Law "On Higher Education", P.2., p.5);

- at the legislative level to determine the role and place of socio-humanitarian education in the training of future professionals in a hybrid war (for example, to finally develop the Law of Ukraine "On socio-humanitarian education and science in the conditions of the hybrid war".

The low level of civic competence of teachers determines *the low level of development of civic competence of students of vocational education institutions and their ability to withstand the challenges of information warfare*. In vocational education institutions, the realization of educational and developmental goals of the lesson is mostly supplanted by educational tasks. Civic and patriotic education of

students is de facto carried out through extracurricular activities. At the same time, there is a need for textbooks and manuals on civic education in vocational education institutions; methodical recommendations and methodical manuals for class teachers on questions of civil, military-patriotic, economic education, information security, etc.

To solve this problem, it is necessary to provide professional expertise of textbooks and manuals of the socio-humanitarian cycle, taking into account external and internal challenges and quality scientific and methodological support of class teachers with young students in the conditions of hybrid warfare.

The staff shortage in foreign labor markets and the resulting strong labor migration from Ukraine have become an important challenge for the vocational education system and an unparalleled threat to the economic and national interests of the state.

One of the reasons for this phenomenon is *the low level of career guidance work with student youth*. According to the Institute of Educational Analytics (2020), unsatisfactory career guidance work in general secondary education institutions causes disproportionate admission of graduates to vocational (20%) and professional higher and higher education institutions (80%), as well as high unemployment and labor migration of Ukrainians abroad. Information stands (83.5%) and introductory materials (82%) are traditionally used to acquaint students with future professions. Only one-fifth of the surveyed educational institutions (20.09%) uses the opportunities of modern information technologies in career guidance work, creating relevant pages on their websites. The lion's share (90.6%) of educational institutions covered by the monitoring survey does not have modern computer programs for career guidance. In many institutions (51.5%) career guidance activities take place only a few times a year, and in 18.0% of institutions they are not held at all. Most schools (80.6%) do not have Career Centers, and where they do exist, career guidance is usually in the form of meetings with employment center representatives.

Given the current situation, it is advisable: to provide funds for representatives of vocational education institutions to conduct a real career guidance campaign among students of general secondary education institutions; to develop special software for the implementation of effective career guidance activities by educational institutions; to strengthen civic and economic education of students of vocational education institutions, in particular, on building a professional career in Ukraine.

The transformation of world labor markets due to the change of energy paradigm, the introduction of rational models of consumption and production, the intensification of "green policy" have become another challenge for the vocational education system of Ukraine. This challenge revealed the problem of *low level of energy saving and environmental competencies of future skilled workers*, which indirectly affect the environmental and energy security of the country. Without proper formation of these competencies of the country's citizens, it is impossible to achieve sustainable energy conservation through the introduction of innovative technologies, improving energy efficiency of the economy, rational development and efficient use of natural resources.

Therefore, it is necessary: to implement in all vocational education institutions the training course "Fundamentals of Energy Efficiency" developed by the Institute of Vocational Education and Training; to disseminate in the system of vocational education the results of experiments of the all-Ukrainian level "Formation of energy efficient competence of future skilled construction workers on the basis of project technologies" (Order of MES of Ukraine № 666 of 13.06.2016) and "Professional training of skilled workers (Order of the Ministry of Education and Science of Ukraine № 1141 of October 19, 2018); to ensure the development of environmental competence of future teachers of vocational education institutions in higher education institutions for the purposeful development of their environmental competence of future skilled workers.

The transition of the European Union to a new technological system and digital economy has become an indicator of *the low level of competence of teachers of domestic vocational education institutions in the use of digital technologies in training future skilled workers* (Radkevych et al., 2018; Pryhodii et al., 2020).

The problem of lack of organizational and methodological materials (theoretical, practical, test) in educational institutions, which would be based on the principles of interactivity, adaptability and openness and ensure the proper quality of classroom and independent work of students as future skilled workers of digital society. It was found that in vocational education institutions there is a need to use digital technologies for professional training of future skilled workers (presentation of educational material; preparation of didactic educational materials; development of electronic educational materials; monitoring and diagnostics; correction of develop-

ment of students; development forecasting educational trajectory) of students; management of educational and cognitive activities of students; systematization and generalization of information (portfolio formation) about students; organization of document flow, etc.). Methods of choosing digital technologies for the training of future skilled workers; criteria, indicators and levels of competence of teachers to the use of digital technologies in the training of vocational education need to be improved. At the regional level, there is a need to ensure the implementation of a quality information and educational environment for general secondary and vocational education.

To overcome this challenge at the national and sectoral levels, it is advisable: to develop and implement regulations governing the information and educational environment of vocational education, first of all – to include in the Law of Ukraine "On Vocational Education" provisions on state support for information culture at all institutional levels (Section VII, Article 42, Paragraph 4, Paragraph 7); to create an all-Ukrainian network for the exchange of innovative experience in the field of consulting on the development of electronic educational resources (based on regional networks). At the regional level: to create regional networks for the exchange of innovative experience in the field of consulting on the development of electronic educational resources; to provide financial and methodological assistance in the creation of Internet resources in educational institutions for the implementation of consulting on the design and development of information and educational environment. At the institutional level: to introduce the methodology of development and use of SMART-complexes of academic disciplines in vocational education institutions.

Conclusions. Based on the analysis of modern legislative and regulatory documents, materials and recommendations of international and national scientific-practical conferences, seminars, webinars,

publications in professional printed and electronic publications, a list of external and internal challenges for the vocational education system of Ukraine was formed; the problems determined by them are substantiated; the degree of their influence on the system of domestic vocational education is determined; proposals for their solution are formulated.

External challenges for the vocational education system are the transformation of world labor markets due to changes in the energy paradigm, the introduction of rational models of consumption and production, the intensification of "green policy"; the transition of developed countries to a new technological system and digital economy; information war against Ukraine; staff shortages in foreign labor markets and the resulting strong labor migration from Ukraine. The main internal challenges include: the demand of society and the economy for a system of vocational education of a new quality; high unemployment, shortage of competitive skilled workers in domestic labor markets.

According to the results of the expert assessment, the problems that pose the greatest threat to the national interests of Ukraine (low quality training of teachers of vocational education institutions; insufficient provision of educational programs to develop critical thinking of modern youth; insufficient level of legal and digital culture and related competencies of teachers and students of vocational education institutions), its economic security (inconsistency of quality of training of future skilled workers to the requirements of modern employers, insufficient formation of entrepreneurial, career, self-educational competencies of graduates; low level of career guidance; vocational education), as well as environmental and energy independence (low level of energy saving and environmental competencies of graduates of vocational education institutions, motivation of social partners to participate in the modernization of vocational education).

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СТАН ГОТОВНОСТІ СИСТЕМИ ПРОФЕСІЙНОЇ ОСВІТИ ДО ПРОТИДІЇ РЕАЛЬНИМ І ПОТЕНЦІЙ-НИМ ЗАГРОЗАМ НАЦІОНАЛЬНІЙ БЕЗПЕЦІ ТА НАЦІОНАЛЬНИМ ІНТЕРЕСАМ УКРАЇНИ В УМОВАХ ЗОВНІШНІХ І ВНУТРІШНІХ ВИКЛИКІВ

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Реферат.

Актуальність статті зумовлюється необхідністю обґрунтування викликів і проблем, що стримують процеси модернізації вітчизняної професійної освіти та можуть становити загрозу національній безпеці й національним інтересам України.

Мета: визначити основні зовнішні і внутрішні виклики для системи професійної освіти України, проаналізувати виявлені проблеми, визначити ступінь їх впливовості на систему вітчизняної професійної освіти, обґрунтувати шляхи їх подолання.

Методи: аналіз наукових та інших джерел – для виявлення зовнішніх і внутрішніх викликів системи професійної освіти; експертне оцінювання – для ранжування виявлених викликів, визначення їх впливовості на систему вітчизняної професійної освіти та небезпеки для національних інтересів України; систематизація та узагальнення – для обґрунтування шляхів подолання означених проблем.

Результати: на основі аналізу сучасних законодавчих і нормативно-правових джерел, матеріалів і рекомендацій міжнародних і всеукраїнських науково-практичних конференцій, семінарів, вебінарів, публікацій у фахових друкованих та електронних виданнях сформовано перелік зовнішніх і внутрішніх викликів для системи професійної освіти України; обґрунтовано детерміновані ними проблеми; визначено ступінь їх впливовості на систему вітчизняної професійної освіти; сформульовано пропозиції щодо їх вирішення.

Висновки: виокремлено зовнішні виклики (трансформація світових ринків праці, зумовлена зміною енергетичної парадигми, запровадженням раціональних моделей споживання і виробництва, активізацією «зеленої політики»; перехід розвинених країн світу на новий технологічний уклад і цифрову економіку; інформаційна війна проти України; кадровий дефіцит на зарубіжних ринках праці і зумовлена ним потужна трудова міграція з України) та внутрішні (запит суспільства та економіки на систему професійної освіти нової якості; високий рівень безробіття, дефіцит конкурентоспроможних кваліфікованих робітників на вітчизняних ринках праці); на основі методу експертного оцінювання встановлено проблеми, що в умовах гібридної війни можуть становити найбільшу загрозу для національних інтересів України (низька якість професійної підготовки педагогів закладів професійної освіти; не-достатнє забезпечення освітніми програмами підготовки майбутніх фахівців розвитку критичності мислення сучасної молоді; недостатній рівень розвитку цифрової культури і цифрової компетентності педагогів та учнів закладів професійної освіти), її економічної безпеки (невідповідність якості підготовки майбутніх кваліфікованих робітників вимогам сучасних роботодавців, недостатня сформованість підприємницької, кар'єрної, самоосвітньої компетентностей випускників; низький рівень профорієнтаційної роботи; низькі темпи впровадження дуальної освіти; недосконала система управління закладами професійної освіти), а також екологічної та енергетичної незалежності (низький рівень енергозберезувальної та екологічної компетентностей випускників закладів професійної освіти, низька мотивація партнерів до участі в модернізації професійної освіти).

Ключові слова: професійна освіта, зовнішні і внутрішні виклики, інформаційна війна, компетентності, освітня політика.

Received: 15 January 2022

Accepted: 10 February 2022