

*Oryginalna praca badawcza*

DOI: 10.34858/SNB.1.2020.008

**Nina DIDENKO**

ORCID: 0000-0002-7365-9370

e-mail: [ngdidenko58@gmail.com](mailto:ngdidenko58@gmail.com)

**Viktor TSUGAN**

Państwowa instytucja szkolnictwa wyższego Wyższa Szkoła Zarządzania Oświatą  
Narodowa Akademia Nauk o Edukacji Ukrainy

Kijów, Ukraina

ORCID: 0000-0002-9750-8155

e-mail: [77tsugan22@gmail.com](mailto:77tsugan22@gmail.com)

## DEVELOPMENT OF VOCATIONAL EDUCATION AS A FACTOR OF NATIONAL SECURITY

## ROZWÓJ EDUKACJI ZAWODOWEJ JAKO CZYNNIK BEZPIECZEŃSTWA NARODOWEGO

**Zarys treści:** Rozwój wysokiej jakości i konkurencyjnego systemu kształcenia zawodowego (VET) jest istotnym czynnikiem zapewniającym bezpieczeństwo narodowe i koncentruje się na rozwoju systemu VET w zakresie zgodności zakresu i obszarów szkolenia pracowników z potrzebami gospodarki i rynku pracy; finansowanie kształcenia zawodowego z udziałem pracodawców; inwestowanie w szkolenie wysoko wykwalifikowanych pracowników. Pilność rozwoju szkolnictwa zawodowego na Ukrainie jako czynnika bezpieczeństwa narodowego dodatkowo nasila się w kontekście rosyjskiej agresji zbrojnej na Ukrainę, gdyż dotyczy ona zdolności i gotowości absolwentów kształcenia zawodowego do służby w Siłach Zbrojnych Ukrainy i pracy w przemyśle obronnym. Celem artykułu jest analiza rozwoju szkolnictwa zawodowego pod kątem wzmocnienia bezpieczeństwa narodowego, przygotowania absolwentów do pełnienia obowiązków w zakresie bezpieczeństwa narodowego, organizowania działalności placówek kształcenia zawodowego na zasadach partnerstwa publiczno-prywatnego.

**Abstract:** The development of a high-quality and competitive system of vocational education (VET) is an important factor in ensuring national security, which focuses the development of the VET system on the compliance of the scope and areas of training of workers to the needs of the economy and labour market; financing of vocational education with the participation of employers and investing in the training of highly skilled workers. The relevance of the development of vocational education in Ukraine as a factor of national security is further growing in the context of

Russia's military aggression against Ukraine, as it concerns the ability and readiness of graduates of vocational education to serve in the Armed Forces of Ukraine and work in the defence industry. The purpose of the article is to analyse the development of vocational education in terms of strengthening national security, preparing graduates to perform responsibilities for national security and organizing the activities of vocational education institutions on the basis of public-private partnership.

**Słowa kluczowe:** bezpieczeństwo narodowe, szkolnictwo zawodowe, wyzwania i zagrożenia bezpieczeństwa narodowego, partnerstwo publiczno-prywatne

**Key words:** national security, vocational education, challenges and threats to national security, public-private partnership

## Introduction

The urgency of reforming the system of vocational education in accordance with the requirements of national security is determined, in our opinion, by the following factors:

- 1) the competitiveness of the national economy largely depends on the skills of workers, their ability to quickly acquire new knowledge, skills and adapt to the latest technological changes, so the quality of vocational education and competencies received by graduates of vocational schools is an important factor for national security. The latest military and defence-industrial technologies require qualified personnel capable of high-quality and rapid acquisition of new knowledge and skills. At present, while Ukraine is waging war in the east, this factor is especially important because new weapons are being delivered to the army and new technological methods of warfare are being used, which requires appropriate competencies from soldiers to use them;
- 2) the introduction of information technology in the defence sector necessitates the improvement of computer literacy of those who work in this field. Separately, we can talk about cyber threats, which requires the training of technicians who can adequately protect the information systems of critical infrastructure, in particular, this applies to the training of telecom operators, providers of transport and banking services, etc.;
- 3) an important factor of national security is the appropriate level of patriotism and resistance to hostile influences, because most graduates of vocational schools serve in the military after graduation.

The National Security Strategy of Ukraine adopted in 2020 identified the following areas of its implementation: the development of human capital of Ukraine through the modernization of education and science and the development of public-private partnership. According to Article 57, for the development of human capital it is necessary to: create jobs in Ukraine; to modernize the system of preschool and complete general secondary education, vocational and higher education, to bring educational standards to the needs of social development and to the best world standards. According to Article 60, strengthening the combat potential of the Armed Forces of Ukraine and other

bodies of the defence forces should be done by modernizing the system of mobilization training and mobilization, as well as pre-conscription training and military-patriotic education of youth. Article 61 stipulates that the defence industry will meet the needs of the Armed Forces of Ukraine, other components of the security and defence sector of Ukraine in armaments and military equipment, invest in the development of technology, production capacity, human resources, attract investment, participate in joint international projects, implement potential public-private partnership and will thus act as a driver of economic growth<sup>1</sup>.

Thus, the main issues of vocational education development in the context of national security cover the following aspects: modernization of vocational education system, mastering by graduates of competencies necessary for state defence, use of public-private partnership projects and active military-patriotic education.

The subject of the article is the main directions of development of the system of vocational education to ensure national security.

The purpose of the article is to analyse the development of vocational education in terms of strengthening national security, preparing graduates to perform responsibilities for national security and organizing the activities of vocational education institutions on the basis of public-private partnership.

The main problem of the research, formulated in this article, is the following: how the reform and modernization of the vocational education system can contribute to strengthening national security and how to organize these activities on the basis of public-private partnership.

## Safe dimensions of vocational education

Analysis of safety dimensions of vocational education shows that the main indicator of educational institutions is the compliance of training of workers with the needs of the national economy, in the field of national security – training of highly skilled workers for the defence industry. At present, there is an imbalance in the interaction between public administration bodies, the system of vocational education, employees and employers for the training of such personnel. This, of course, requires forecasting the necessity for specialists in the economy and communication of educational institutions with potential employers. Therefore, the issue of formation of mechanisms and structures capable of effectively implementing the state policy of bringing the educational market in line with the labour market and the needs of the domestic economy is on the agenda, as well as the legislative support for their functioning. Successful foreign experience can be a certain reference point here. For example, in the United States, issues of national security and education are considered in the context of human capital development, improving the state and society's protection against current and potential threats. Back in 1983, the report of the National Commission for the

<sup>1</sup> Ukaz Prezidenta Ukrainy №392/2020 «Pro rishennya Rady natsional'noyi bezpeky i oborony Ukrainy vid 14 veresnya 2020 roku «Pro Stratehiyu natsional'noyi bezpeky Ukrainy» URL:[www.president.gov.ua](http://www.president.gov.ua) > 3922.

Improvement of Education “A Nation At Risk: The Imperative For Educational Reform” (1983) referred to the low level of education in the workforce and the challenges of international competition in the United States, which led to the need to provide assistance in this area, which should come from the students themselves; from parents, teachers, school boards; from colleges and universities; from local, state and federal officials; from teachers’ and administrators’ organizations; from industrial and labour councils; and from other groups interested in educational reform that are responsible for it.

In 2012, the Council on Foreign Relations Expert Group prepared a report entitled “U.S. Education Reform and National Security”<sup>2</sup>, which covers issues of education and security and their interactions. The Task Force sets forth three central recommendations:

- Implement educational expectations in subjects vital to protecting national security. The states should expand the Common Core State Standards, ensuring that students are learning the skills and knowledge necessary to safeguard the country’s national security. Science, technology, and foreign languages are essential — as are creative problem-solving skills and civic awareness. It is essential that necessary resources accompany these enhanced standards to fuel successful implementation.
- Make structural changes to provide students with good choices. States and districts should stop locking disadvantaged students into failing schools without any options; this is bad for the students and bad for the United States as a whole. Enhanced choice and competition, in an environment of equitable resource allocation, will fuel the innovation necessary to transform results.
- Launch a “national security readiness audit” to hold schools and policymakers accountable for results and to raise public awareness. At the heart of this recommendation is the creation of more meaningful assessments and simulations of student learning and, then, a coordinated, national effort to create targets and repercussions tied to the Common Core. A high-publicity public awareness campaign linked to the audit will engage the American people<sup>3</sup>.

In our opinion, an important conclusion of experts is that the United States needs to build a stronger foundation of skills and knowledge among its citizens. Without high quality standards, assessments, and accountability, citizens’ life prospects are limited, and the United States’ economic, military and diplomatic security is severely impaired<sup>4</sup>.

The report also drew attention to the fact that the acute problem for the United States is the unsatisfactory state of health of graduates, which makes it difficult to meet the requirements for future armed services recruitment (health, educational level, criminal record)<sup>5</sup>.

We believe that the main recommendations of this report are extremely important

<sup>2</sup> Joel I. Klein, C. Rice, Julia C. Levy, *U.S. Education Reform and National Security* (Independent Task Force Report No. 68) – New York: Council on Foreign Relations Press March 2012. – 120 p.

<sup>3</sup> *Ibidem*.

<sup>4</sup> *Ibidem*.

<sup>5</sup> *Ibidem*.

for Ukraine. This is also due to human development indicators, where Ukraine is below the average level in Europe and Central Asia, and this figure has not improved in 10 years. As a result, Ukrainian youth do not have the opportunity to grow into productive adults. A newborn child in our country only achieves 63% of the productivity of an adult with a sufficient level of education. The World Bank notes that this figure is higher among countries with similar levels of economic growth, but at the same time it is lower than in Europe and Central Asia. To solve this problem, large investments in education, health care and social protection are needed. For example, in Poland a child can expect to achieve 75% productivity and in Tajikistan – 50%<sup>6</sup>.

One of the threats to national security is the departure of qualified specialists abroad. The National Report “Ukrainian Society: Migration Dimension”<sup>7</sup> states that the negative impact of natural and migratory factors of population decline on the country’s defence system is manifested in two key areas. In both cases, it is the working population of working age, which has the necessary physical development, education, professional knowledge and skills to perform the relevant functions, which determines the mobilization potential of the population.

The processes of natural and migratory population reduction also affects the ability to meet the labour needs of those enterprises that are involved in the implementation of military (defence) orders. Manufacturing in the interests of the security and defence sector requires highly qualified specialists, who are already in significant demand, which, due to migration, remains largely unsatisfied.

According to the authors of the study<sup>8</sup>, the most threatening is the reduction of the economically active population of working age (1.8 million people, or 9.7%), which is the basis of the mobilization potential of the country. Prolonged depopulation and ageing of the population and its high migration mobility have an extremely negative impact on the mobilization potential of the basic component of the security and defence sector – the Armed Forces of Ukraine.

Thus, the practice of working abroad not only reduces the number of mobilization opportunities, but also simplifies the decision to abandon military service and work at defence enterprises, even in conditions of armed aggression. This can lead to a general mobilization depletion of the population of Ukraine, so it increases the threats not only in the field of military development, but also for the sovereignty and territorial integrity of our country.

<sup>6</sup> Indeks lyuds'koho rozvytku v Ukrayini za ostanni 10 rokiv ne pokrashchuvavsya URL: mind.ua ›novyny› 20215947-indeks-lyudskogo-rozvitku-

<sup>7</sup> Ukrayins'ke suspil'stvo: mihratsiynyy vymir: nats. dopovid' / Instytut demohrafiyi ta sotsial'nykh doslidzhen' im. M. V. Ptukhy NAN Ukrayiny. - K., 2018. – 396 p.

<sup>8</sup> Ukrayins'ke suspil'stvo: mihratsiynyy vymir: nats. dopovid' / Instytut demohrafiyi ta sotsial'nykh doslidzhen' im. M. V. Ptukhy NAN Ukrayiny. - K., 2018, pp. 280–282.

## **Development of public-private partnership in the field of vocational education as a factor of strengthening national security**

In the field of vocational training, the close relationship between education and work is extremely important. This requires knowledge of changes in the demand for vocational skills for the rapid response of the education and vocational training system to structural changes in the economy and society. The success of initiatives in these areas is determined by the correlation with the objectives of economic and social policy.

A special role in their solution belongs to the implementation of public-private partnership (PPP) projects. The positive consequences of the implementation of PPP projects should be: promotion of better management and coordination of the VET system with the needs of the labour market; introduction of educational innovations; improving the quality of vocational education; increasing the level of employment of graduates.

In recent years, Ukraine has developed the necessary legal framework for the implementation of PPP in the VET system, in particular in Article 6 of the Law of Ukraine “On Education” (2017)<sup>9</sup> public-private partnership is included in the foundations of public policy in education and principles of educational activities.

The main areas of partnership between VET institutions and employers are, in our opinion, the following:

- joint development of professional and educational standards;
- joint provision of professional qualifications to graduates;
- providing practical training of students and internships for teachers and masters of industrial training at enterprises;
- introduction of payments by enterprises and organizations of branches and nominal scholarships for the best students;
- providing enterprises and organizations with assistance in the maintenance and development of the material and technical base of vocational and technical institutions;
- introduction by enterprises and organizations of material and moral stimulation of teachers and masters of industrial training.

In recent years, the practical implementation of public-private partnership projects in the form of dual education has become popular in Ukraine. The main changes in the organization of the educational and production process in the introduction of elements of the dual form of education are to strengthen the practical orientation of training skilled workers, the introduction of block-modular construction of the educational process: evaluation of learning outcomes according to employers' needs.

Since September 1, 2019, elements of the dual form of education in vocational (technical) education institutions have been implemented by 262 institutions, 1,000 employers, training of 190 working professions is carried out and 12,000 students study in dual education programmes.

<sup>9</sup> Pro osvitu: Zakon Ukrainy (2017) URL: zakon.rada.gov.ua.

Currently, the training of modern workers requires new approaches to training, the use of modern and effective educational technologies, the main result of which should be the employee's ability to self-improve, rapid adaptation to changes in production and services, which highlights the need for quality education and innovative development VET on the basis of public-private partnership. This determines the relevance of modernization of the educational process and the transition from traditional to a targeted model of training, which is implemented in the format of network interaction of educational institutions and enterprises, which should focus on the specifics of the order for economic needs.

The above analysis shows that combining the efforts of the VET system with employers for systematic, constructive and mutually beneficial cooperation to ensure high quality training, attract additional resources for the development of the VET system and its focus on modern labour market requirements, is an important factor in national security.

### **Post-pandemic need for modern and quality vocational education**

Lucia Duriš Nicholsonová points out in the article “The post-pandemic need for modern and high-quality vocational education and training” that, despite the damage caused to society and individuals by the coronavirus crisis, we must ensure that the European workforce is ready to solve future challenges. According to her, employment and education are among the most affected by the crisis due to lockdowns and measures taken by governments to prevent the spread of the virus and its devastating effects. According to Eurostat, in January 2020 the unemployment rate in the EU was 6.6%, the lowest in 20 years. After the crisis in September 2020, the unemployment rate in the EU-27 rose to 7.5%, and youth unemployment also rose from 14.5% last year to 17.1%<sup>10</sup>.

We believe that the pandemic has become a significant threat to the national security of all countries, so we agree that in addition to combating the coronavirus, the focus should be on stimulating economic recovery and employment. Vocational education and training are tools that can quickly overcome skills shortages and labour market needs, thus contributing to economic recovery and strengthening national security.

To this end, the European Commission has proposed action at the EU level to support vocational education reform as part of its post-COVID-19 recovery agenda. The Parliamentary Committee on Employment and Social Affairs calls for the modernization of VET to meet the needs of sustainable competitiveness, social justice and sustainability in the following areas:

- VET systems must be accessible to all citizens, including vulnerable groups. All relevant stakeholders should be involved throughout the design and supply process;

<sup>10</sup> Lucia Duriš Nicholsonová. The post-pandemic need for modern and high-quality vocational education and training. URL:[www.theparliamentmagazine.eu](http://www.theparliamentmagazine.eu).

- when implementing a new policy, specific, measurable goals need to be set so that the advantages and disadvantages of such a policy can be compared and assessed;
- sharing best practices and collecting data will lead to a data-based policy that will strengthen the role of VET in the recovery process<sup>11</sup>.

Also noted are the constant technological advances and increasing automation requirements and transforming of the labour market. According to the OECD, 50-70% of work tasks will change dramatically due to automation. Many tasks will be replaced and many new jobs will be created. The VET curriculum should reflect this, focusing on knowledge and current skills<sup>12</sup>.

Another factor that will significantly affect labour markets is the fact that European society is ageing and the working-age population is decreasing. According to the Commission's report on the impact of demographic change, the EU's population is expected to decline by 18% by 2070, with different projections for different Member States and regions. This raises the question of the need to make VET more attractive to young people and to promote lifelong learning and vocational education.

Particular emphasis is placed on the cooperation of VET institutions with micro, small and medium enterprises and all relevant stakeholders. To make VET more attractive, it is important to promote mobility through programmes such as ErasmusPro and Erasmus +. In the 2014-20 budgetary period, almost €3 billion from the Erasmus + budget was allocated to VET. This has allowed around 130,000 students and 20,000 staff to take advantage of this mobility opportunity each year. Moreover, Erasmus+ strategic partnership programmes fund almost 500 VET projects each year<sup>13</sup>.

Thus, recovery from the coronavirus crisis is seen as an important step in creating a modern and high-quality VET system that can provide jobseekers with modern skill sets that allow them to remain able to work and be competitive in the labour market.

To predict the development of the VET system in the post-pandemic period, the report "Impact of Covid-19 on Technical and Vocational Education Market 2020–2028 – Pearson, CleanEdison, GP Strategies, CORE Education & Technologies, First 4 Skills, Interserve Learning & Employment, etc"<sup>14</sup> can be used, which provides a comprehensive overview of market findings to analyse the impact of COVID-19. The report aims to provide an idea of how COVID-19 has affected the market for technical and vocational education, the dynamics, trends and prospects for the future during the forecast period from 2020 to 2028. In addition, the report offers an in-depth analysis of individual segments in some major markets in different regions, such as North America, Europe, Asia-Pacific, Latin America, the Middle East and Africa.

---

<sup>11</sup> *Ibidem.*

<sup>12</sup> *Ibidem.*

<sup>13</sup> Lucia Duriš Nicholsonová, *The post-pandemic need for modern and high-quality vocational education and training*, URL: [www.theparliamentmagazine.eu](http://www.theparliamentmagazine.eu).

<sup>14</sup> Impact of Covid-19 on Technical and Vocational Education Market 2020-2028 – Pearson, CleanEdison, GP Strategies, CORE Education & Technologies, First 4 Skills, Interserve Learning & Employment, etc URL: <https://www.zealinsider.com/report/9755/technical-and-vocational-education-market#sample>.



In order to further determine the directions of development of the VET system, it is worth paying attention to the study “Key lessons from national industry 4.0 policy initiatives in Europe” (2017),<sup>15</sup> which determined that the development of industry 4.0 will lead to many job cuts where production is already largely automated and in office workers employed in the service sector. According to the study, the global labour market will lose about seven million jobs, two-thirds of which are administrative and office positions. On the other hand, the need for IT specialists will increase. Therefore, the most important investment that people, firms and governments can make to change the nature of work is to increase human capital. At the general economic level, human capital is positively correlated with the general level of implementation of advanced technologies. Firms with a higher proportion of educated workers are better able to innovate. Individuals with more powerful human capital receive higher economic returns from new technologies.

Thus, the post-pandemic period requires new forms and directions of VET development, which will have a positive impact on economic development and strengthening national security.

We believe that in the matter of strengthening the national security of the country, education should ensure the formation of critical thinking, national consciousness, and the strengthening of spiritual security in VET students. This will contribute to the formation of patriotic, civic consciousness, which, of course, affects the state of national security.

The purpose of the article is achieved and the research problem is solved by substantiating the main directions of development of the VET system as a factor of national security. The study allows us to draw the following conclusions.

Modernization of the VET system and introduction of new forms of interaction with employers are important factors in ensuring the demand for professionals trained in the system of vocational education and training. The benefits of a successful public-private partnership for skills development mean increased access to learning, a focus on demand for vocational education and training, employment and economic growth. This indicates that the use of PPP in vocational education combines educational and labour processes affects the participation of the economically active population in the labour market, is an important factor in strengthening the economy and defence, and it is one of the mechanisms to provide the labour market with qualified personnel.

The functioning of the partnership mechanism between vocational education institutions and employers in Ukraine requires the following conditions: a sufficient legal framework that is in line with international agreements and allows partners to agree on the terms of interaction; state and public institutions that will promote dialogue and partnership between educational institutions and employers in the new socio-economic environment, providing financial, organizational, political support; free, independent and empowered partners who seek mutual understanding and are able to develop a common vision of the labour market prospects; adherence to certain

---

<sup>15</sup> Key lessons from national industry 4.0 policy initiatives in Europe. URL: [ec.europa.eu > default > files](https://ec.europa.eu/default).

principles by social partners and promotion of such forms of partnership that meet the modern needs of socio-economic development of the country.

For the national security of Ukraine, the importance of the development of vocational education is also that the additional vocational education received on the basis of VET institutions contributes to the adaptation and rehabilitation of social and professional groups to the rapidly changing social environment and prepares specialists for new production.

### Bibliography

- A Nation At Risk: The Imperative For Educational Reform. An Open Letter to the American People (April 1983). United States Department of Education. URL :<http://www2.ed.gov/pubs/NatAtRisk/index.html>.
- Bezpekovi vymiry osvithn'oyi polityky: svitovyy dosvid ta ukrayins'ki realiyi : analit. dop. / [Ishchenko A.YU., Zubchenko S.O., Karpenko M.M., Lozovyy V.S., Chernenko T.V.]. – K. : NISD, 2017.
- Hoeckel K. Key Evidence on Vocational Education and Training Policy from Previous OECD WorkURL:[www.oecd.org/education](http://www.oecd.org/education) > .
- Impact of Covid-19 on Technical and Vocational Education Market 2020-2028 – Pearson, CleanEdison, GP Strategies, CORE Education & Technologies, First 4 Skills, Interserve Learning & Employment, etc URL:<https://www.zealinsider.com/report/9755/technical-and-vocational-education-market#sample>.
- Indeks lyuds'koho rozvytku v Ukrayini za ostanni 10 rokiv ne pokrashchivsya URL:[mind.ua > news > 20215947-indeks-lyudskogo-rozvitku-](http://mind.ua/news/20215947-indeks-lyudskogo-rozvitku-)
- Key lessons from national industry 4.0 policy initiatives in EuropeURL:[ec.europa.eu > default > files](http://ec.europa.eu/default/files).
- Klein Joel I., Rice C., Levy Julia C.U.S. Education Reform and National Security (Independent Task Force Report No. 68). New York : Council on Foreign Relations Press. March 2012.
- Natsional'na bezpeka Ukrayiny u vyklykakh novitn'oyi istoriyi : monohrafiya / avt.-uklad. V. I. Shpak; ker. avt. kol. S.I. Tabachnikov. – K. : DP «Ekspres-ob'yava», 2020.
- Nicholsonová L.D. The post-pandemic need for modern and high-quality vocational education and training. URL:[www.theparliamentmagazine.eu](http://www.theparliamentmagazine.eu) > .
- Pro osvitu:Zakon Ukrayiny (2017)URL:[zakon.rada.gov.ua](http://zakon.rada.gov.ua) > .
- Ukaz Prezidenta Ukrayiny №392/2020 «Pro rishennya Rady natsional'noyi bezpeky i oborony Ukrayiny vid 14 veresnya 2020 roku «Pro Stratehiyu natsional'noyi bezpeky Ukrayiny» URL:[www.president.gov.ua](http://www.president.gov.ua) > 3922.
- Ukrayins'ke suspil'stvo: mihratsiynyy vymir : nats. dopovid' / Instytut demohrafiyi ta sotsial'nykh doslidzhen' im. M.V. Ptukhy NAN Ukrayiny. K., 2018.

### **Summary**

The development of a high-quality and competitive system of vocational education (VET) is an important factor in ensuring national security and focuses the development of the VET system on the compliance of the scope and areas of training of workers to the needs of the economy and labour market; financing of vocational education with the participation of employers; investing in the training of highly skilled workers.

The purpose of the article is to analyse the development of vocational education in terms of strengthening national security, preparing graduates to perform responsibilities for national security and organizing the activities of vocational education institutions on the basis of public-private partnership.