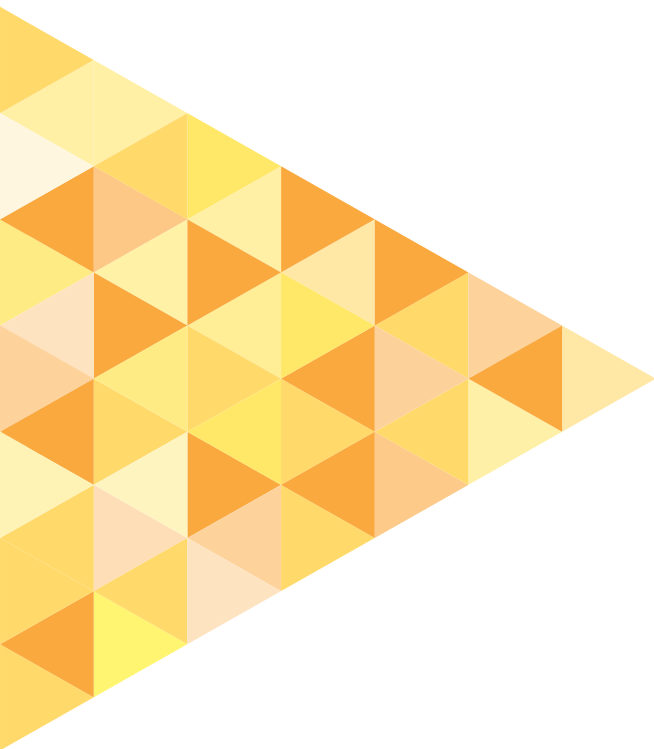


Snizhana Leu-Severynenko

A Short Overview on Vocational Education and Training in Ukraine

Current Status, Challenges and Reform Intentions



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A Short Overview on Vocational Education and Training in Ukraine: Current Status, Challenges and Reform Intentions

Snizhana Leu-Severynenko*

Abstract:

The following article deals with the current state of vocational education and training as well as with planned reform projects and those already being implemented. In the first step, the challenges, obstacles and progress up to the outbreak of the war are presented. In a further step, the text looks at the plans for the post-war period. Aspects of legislation, financial support, and coordination needs are addressed. The contributions of international donor organisations are also presented and classified in this context. The author analyses the plans for reconstruction and further development of vocational education and training presented by the Ukrainian government at international and national levels. As a result, she suggests possible directions for the development of vocational education and training that are in line with the current reform process in Ukraine.

Der folgende Beitrag befasst sich mit dem aktuellen Stand der Berufsbildung sowie mit geplanten und bereits umgesetzten Reformvorhaben. In einem ersten Schritt werden die Herausforderungen, Hindernisse und Fortschritte bis zum Ausbruch des Krieges dargestellt. In einem weiteren Schritt befasst sich der Text mit den Plänen für die Nachkriegszeit. Dabei werden Aspekte der Gesetzgebung, der finanziellen Unterstützung und des Koordinierungsbedarfs angesprochen. Auch die Beiträge der internationalen Geberorganisationen werden in diesem Zusammenhang dargestellt und eingeordnet. Die Autorin analysiert die von der ukrainischen Regierung auf internationaler und nationaler Ebene vorgelegten Pläne für den Wiederaufbau und die weitere Entwicklung der Berufsbildung. Als Ergebnis schlägt sie mögliche Richtungen für die Entwicklung der Berufsbildung vor, die mit dem aktuellen Reformprozess in der Ukraine in Einklang stehen.

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Table of Content

The place of VET within the system of education in Ukraine	2
Challenges, obstacles, and progress	6
Reforming the system: pre-war achievements	14
What happens next? Post-war recovery and plans	18
A brief outlook	21
REFERENCES	25

A Short Overview on Vocational Education and Training in Ukraine: Current Status, Challenges and Reform Intentions

Snizhana Leu-Severynenko¹, Kyiv

Vocational education and training (VET) is crucial to ensure that the skills of the labour force are well matched to the needs of the labour market, with a corresponding impact on employment rates and productivity. In the current situation, VET in Ukraine ensures the provision of knowledge and skills in a wide range of VET degrees and certificates. Those who have completed vocational training can work as helpers/assistants, skilled workers, advanced workers or specialists. However, the prestige of blue-collar professions in Ukraine is not very high, and the national labour market is desperate for skilled workers in trade, crafts and industry. The article briefly reviews the challenges and progress of the pre-war period, the obstacles and achievements of the war period, and the plans for the post-war period.

In 2015, when many Ukrainians left the country to find work in countries of the EU, the "hunger for skilled labour" became clearly visible for the Ukrainian economy. At the same time, this challenge prompted local employers to develop better working and living conditions for their employees and forced VET and companies to be more active and open to each other. This was the starting point for increasing cooperation between VET and business, public-private partnerships and joint activities to improve VET content by developing professional (vocational) and educational standards in the VET sector in Ukraine even before February 2022.

The place of VET within the system of education in Ukraine

In Ukraine's education system, vocational education and training (VET) plays an important role in ensuring the training of skilled workers and professionals for all sectors of Ukraine's economy. VET is open to all and free of charge. VET is inclusive and provides knowledge and skills for young people from different target groups, e.g. orphans, young people from single-parent families, young people from disadvantaged and low-income families and people with special needs.

In Ukraine, there are three levels of VET – the first (basic) level, the second (basic) level, and the third (upper) level (Figure 1). The first (primary) level is dedicated to active vocational guidance and meets the vocational education needs of secondary school students, orphans, or children aged 12-13 from low-income families. Secondary school students (especially at higher levels) can acquire vocational skills in out-of-school training courses. Orphans and children from low-income

¹ with support and collegial feedback from Christiane Eberhardt, BIBB

families can attend a VET school from grade 7 onwards and receive free meals and accommodation at school.

The most widespread and popular level is the second (basic) level of VET. It can be entered after completing grade 9 (14-15 years) or grade 11 (16-18 years) of a secondary school. When a young person enters the basic level after grade 9, he or she goes through a three- to four-year programme that includes the entire secondary school programme and vocational qualifications. The training period can be extended to acquire up to four vocational specialisations. The same mechanism applies to young people who enter the basic level after completing grade 11. In this case, the training lasts between 1 and 2 years.

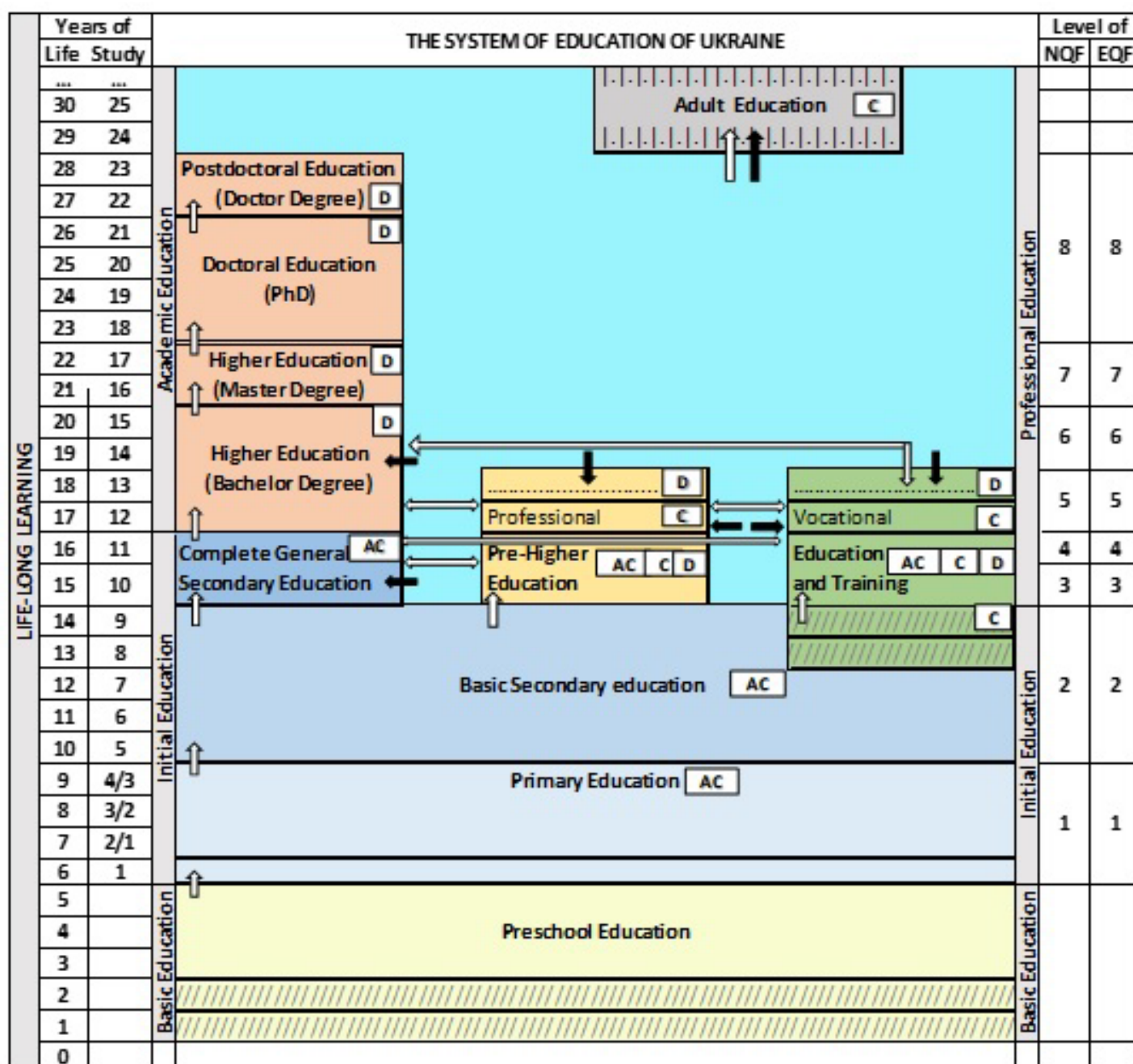
The third (upper) level is for further qualification and retraining of adults. For this purpose, adults can use the training services of various providers, e.g. vocational schools, training centres in companies and private providers. Adults can acquire a new qualification or raise their occupational level through individual educational pathways or day, part-time and out-of-school training or a dual form of training. The duration of the training depends on the qualification level of the person and the desired level of professional development. It can therefore last from three months to 3 years.

Accordingly, the three levels of VET belong to the 2nd, 3rd, 4th and 5th levels of the National Qualifications Framework (NQF) and correspond to the same levels of the European Qualifications Framework (EQF). In 2020, Ukraine has significantly updated the NQF so that there are now eight levels as in the EQF. The latest results of the comparison show that they are fully aligned (NQA, 2022).

VET of Ukraine still struggles with its low standing in Ukrainian society, while higher education remains popular. This was one of the reasons for the creation of "professional pre-higher education". As a rule, this type of education (Professional Pre-Higher Education) raises additional questions and leads to a misunderstanding about the general structure of the Ukrainian education system, as this level of education exists only in Ukraine. In simple terms, it is the more prestigious version of VET with the characteristics of higher education provided by colleges (higher education institutions). Therefore, professional pre-higher education offers both vocational education qualifications and the first higher education degree, the so-called junior bachelor's degree.

VET shares 3-5 NQF levels with professional pre-higher education and both are for people after the 9th or 11th grade. After successfully completing a VET school, a person has a certificate or diploma of a qualified worker or a junior bachelor (vocational college) and can enter the labour market or continue their education at a college or university. The college offers the diploma of a junior bachelor for a person. Colleges have less autonomy than VET schools and usually serve as structural subdivisions of universities.

Figure 1: The system of Education of Ukraine



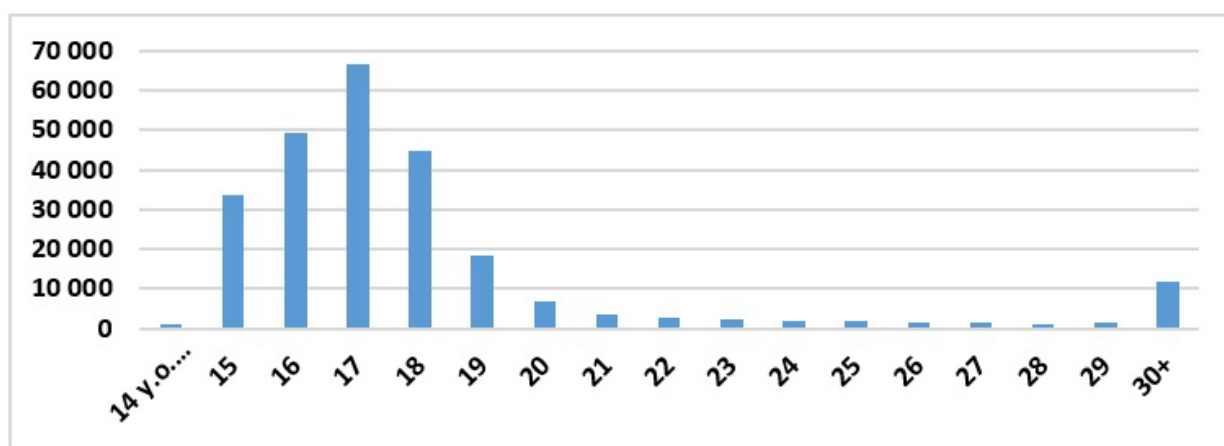
Legend

A	Attestation Certificate	/////////	Optional opportunity
C	Certificate	- - -	Training providers of non-formal learning and Qualification Centres
D	Diploma		Can serve as a Qualification Centre
	Available for Adults		
	Available for Young people		

Source: based on the information of State Statistics Service (SSS, 2022, Secondary Education and Vocational Education and Training in Ukraine, n.d.) and the Ministry of Education and Science of Ukraine (MoES, 2022) (Leu-Severynenko, 2022)

In 2021, 170,886 students entered VET schools after grade 9 and obtained a dual qualification (secondary school diploma plus VET qualification) at the basic level. About 75 % of VET students typically enter post-9th grade secondary school, 25 % of students have completed secondary school, and only 4 % of the total student population are adults (Figure 2).

Figure 2: Age of VET students



Source: Snizhana Leu-Severynchenko based on the information of State Statistics Service (SES, 2022, Secondary Education and Vocational Education and Training in Ukraine)

The VET system offers training services for 407 occupations, where 316 are financed by regions in terms of the regional order, and only 103 occupations correspond to regional labour market needs (IPQ, 2022, slide 14). In 2021, 89,996 out of 110,212 graduates of VET schools found a job according to their VET qualification in the sectors of industry (26,940), agriculture (11,376), transport (14,695), communications (397), construction (9,937), trade and catering (18,407), housing and utilities (8,244) (more details see in the Tables 1 and 2). The rest of the 2021 VET graduates continued their education (7,861), were called up for military service (1,741), or did not find work (10,614) (SSS, 2022).

Table 1: The rates of employment of VET graduates 2018-2020

Code	Title	% of employed
8311	Assistant driver of electric locomotive	73.56%
8311	Driver of an electric locomotive	73.98%
8122	Operator of the hot rolling mill control post	75%
5133	Sign language translator	64,58% (since 2019)
5162	Policeman	89,74% (since 2019)
7233	Reactor-turbine equipment repairmen	75.00%
7241	Electrician for repair and maintenance of alarm, interlocking and interlocking devices	72.73%
7241	Electrician for repair and maintenance of solar electrical installations	81,82% (since 2019)
7241	Electrician underground	75.71%
8124	Cold rolled mill rolling mill	71,05% (no results in 2020)

Source: Qualification Map of Ukraine – Career Map of Ukraine (IPQ, 2022, slide 13)

Table 2: The most popular jobs for young people to study at VET schools (2021)

Code	Title	Number of students
5122	Cook	19297
7231	Locksmith for the repair of wheeled vehicles	9.518
8331	Tractor-driver of agricultural (forestry) production	7.106
7212	Electric gas welder	6.94
5141	Hairdresser (hairdresser-fashion designer)	6.423
7433	Tailor	3.137
7241	Electrician for repair and maintenance of electrical equipment	3.306
5162	Policeman	3.601
7133	Plasterer	2.77
4113	Information Processing and Software Operator	2.442
7122	Bricklayer	2.18
7233	Locksmith for the repair of agricultural machinery and equipment	1.979
7212	Electric welder of manual welding	1.578
7233	Locksmith-repairman	1.226
5220	Seller of food products	1.095
8211	Wide profile machine worker	1.015

Source: Source: *Qualification Map of Ukraine – Career Map of Ukraine (IPQ, 2022, slide 8)*

Currently, VET aims at flexibility and adaptability to ensure skills and "hands on" for the country's recovery and reconstruction once the war is over. Therefore, the Ministry of Education and Science of Ukraine (MoES) has launched a communication campaign that actively offers adults opportunities to retrain and/or upskill at the best possible conditions.

Challenges, obstacles, and progress

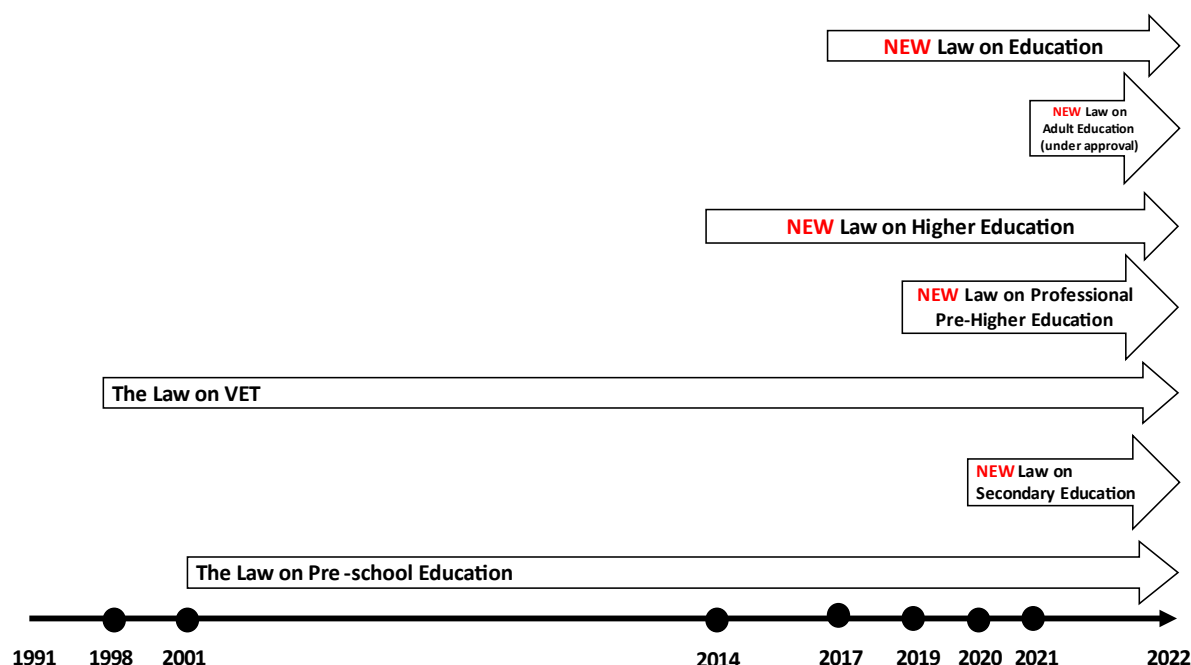
In 2017, the European Union Delegation to Ukraine (EU Del) conducted the project 'Formulating EU support for VET reforms in Ukraine' and studied the state of VET in Ukraine (AECOM, 2017). The study identified the bottlenecks and opportunities for further support to VET system reform in the areas of *legislation, financial support, management and coordination, quality of education and balance of needs and resources*. The following is a brief summary of the findings of the EU-Del project and current progress in VET sector reform.

Legislation. In Ukraine, the education system has been going through a slow and lengthy reform process since Ukraine gained independence in 1991. For many years, Soviet-era legislation and pedagogical approaches were applied in the education sector, while attempts were made to make changes in various sub-sectors. Due to various social, political, and economic reasons, the ad hoc reform measures could not ensure the complex change in the Ukrainian education system. One of these reasons was the lack of a complex vision of the education system as a whole through the gradual change of its general framework and structure with the subsequent logical production of each sub-sector from a lower to a higher level.

Unfortunately, the progress in VET reforms is not so great compared to compulsory or higher education (Figure 3). The framework law for education was passed in 2017. This is three years later than the law on higher education, which came into force in 2014. The Secondary Education

Act was enacted in 2020, and the draft Adult Education Act has been adopted since 2021. The new Law on VET has been drafted since 2015.

Figure 3: The chronology of legislation updates in the education of Ukraine



Source: Snizhana Leu-Severynenko based on the list of legislation documents for education (Osvita.UA, 2019, Laws of Ukraine on Education - Normative Documents)

The VET Act was adopted in 1998, and since then, it has undergone many different changes (e.g. creation of documents on education, improvement of VET administration, organisation of activities for VET schools with specific training conditions, etc.). Unfortunately, these did not help to adapt VET to the changing needs of the modern labour market. Ukrainian education officials have been trying to draft a new VET law for more than 10 years, but the other version is still being revised. The main obstacle is that the VET law should be harmonised with the laws on other types of education, but they were created in different periods (Supreme Council of Ukraine, 1998).

In order to keep the VET sector up to date (while the new VET Law is being drafted), the Ukrainian government adopted in 2019 the Concept for the Implementation of the State Policy in the VET Sector "Modern VET 2027" (UA VET Concept) and in 2020 the Strategy for the Development of VET until 2023. The UA VET Concept aimed at restructuring the VET system in Ukraine, with the aim of modernising curricula and increasing the number of students enrolling in VET. Currently, these two documents secure the vision of VET development and outline approaches to adapting VET to the changing needs of the modern labour market.

Financial support. Between 1991 and 2017, the VET system in Ukraine received "minimal support" for 26 years until the Ukrainian government (GoU) determined the strategic nature of VET in meeting the needs of a professional, skilled workforce for the implementation of the country's priority development areas until 2020. At that time, VET schools already had outdated technical infrastructure and misunderstandings with the business community, and teachers and students lacked modern knowledge and skills.

In 2016, the Ministry of Education and Science of Ukraine (MoES) started the decentralisation of VET. The main goal was to combine financial support from state and local budgets, the private sector, external donors, non-governmental organisations (voluntary contributions), households (including tuition fees), VET institution's own funds, and other sources. This innovation initially caused many problems in the VET sector. Currently, on the one hand, it helps to meet the regions' needs for skilled labour. On the other hand, young people have more opportunities to take up the desired profession in another region of Ukraine. Local budgets are limited to finance the training of students from different regions. The analysis of this initiative for 2016-2018 shows the lowest share of contributions from the private sector and external donors, the medium share from non-governmental organisations (voluntary contributions), households (including tuition fees), VET institution's own funds and other sources, and the highest shares of financial support for VET still come from local and state budgets (ETF, 2022, pp. 137-140). Due to the war, the minimum level of financial support is back, and development budgets are lacking.

Management and coordination. The study by the European Union Delegation to Ukraine (AECOM, 2017) also identified the challenges of ineffective management at all levels of VET, the lack of coordination in the sector, the low motivation of partners to participate in VET sector policies and activities, and the negative impact of the separation of VET into two tracks – VET and professional pre-higher education.

Since then, the situation has changed for the better in some aspects. The establishment of a VET Directorate in the Ministry of Education and Science (2017-2018) has led to more efficient management and coordination of the sector. There are regular coordination meetings with VET schools from different regions, partners, and donors. However, the still undeveloped mechanisms of public-private partnership (PPP) and social dialogue in the VET sector result in a lack of PPP for the development and modernisation of VET. This is compounded by the loss of established partnerships with businesses due to the war. The lack of prestige of VET persists, and colleges use all opportunities to remain as structural sub-departments of universities instead of wearing the "crown" of the VET sector.

Quality of Education. The same study by the EU Delegation to Ukraine identifies numerous reasons for the low quality of training in the VET sector. These are (a) the outdated technical infrastructure of VET schools, (b) the lack of a quality assurance system, (c) incompatibility with

the needs of the labour market, (d) a lack of training tools and materials, (e) a low proportion of applied training, (f) an increasing shortage of pedagogical staff, especially masters for applied training, and (g) outdated vocational guidance approaches.

Technical infrastructure. Due to the low level of financial support, the outdated technical infrastructure of VET schools was and still is one of the main reasons for the insufficient match between the competencies of VET graduates and the requirements of the modern labour market. In 2017, it was found that 60% of the technical infrastructure of VET schools dated back to the mid-twentieth century (AECOM, 2017). The situation is worsening. Currently, the situation is worsening, as the war has caused considerable destruction and damage to VET schools.

VET digitalisation. To address the challenge of damaged infrastructure and ensure adequate safety conditions for VET students, MoES is launching a digital platform for the VET sector "Professional Education Online". This initiative is based on the experience of the All-Ukrainian Online School, which was created in response to the challenges and constraints of the COVID-19 pandemic. MoES thus aims to collect best practices, lessons, and lab work and put them on the digital platform. Teachers and VET students can use it to learn the theoretical part of the curriculum in safe conditions through distance learning and then use the time on-site to acquire practical skills. In order to fill the platform with the quality training material, MoES has invited various partners (national and international NGOs, institutions, companies, etc.), donors, and projects to produce training courses. To ensure proper quality, there is a special MoES working group that carefully reviews and selects the training products produced. If this initiative is maintained, training approaches in VET could change significantly once the platform becomes operational (around November 2022). Later, the platform may also be available to adults who want to upgrade their qualifications and then have this validated by a qualification centre (see the NQA sub-section below for details). So, as we can see, there is positive progress in addressing the previously identified challenge of the "lack of modern tools for assessing learning outcomes during the assignment/confirmation of vocational qualifications". Soon, citizens of Ukraine will have more opportunities for lifelong learning, professional mobility, and flexibility.

VET-business partnering. The mismatch of VET programmes and employers' needs has always been a critical challenge that has necessitated VET reform in Ukraine. There is still a great need to align training programmes and conditions with the needs of employers, already taking into account the needs of the economy/infrastructure during reconstruction/recovery. The current obstacle is the significant loss of links between VET institutions and enterprises due to the suspension (termination) of their activities as a result of relocation processes.

Dual training. In order to align the quality of education with the needs of the labour market, Ukraine has introduced some elements of a dual education system since 2016 (Kulalaieva et al, 2019). For example, students have the opportunity to follow VET programmes that consist of 30-40%

theoretical instruction and 70-60% practical training and official work while they study to pay their bills and support their families. The other initial key elements enable VET schools to provide work-based training for VET students in the company using their technical and human resources, to work closely with a company in organising the training process, and to regulate the partnership between VET school and company through a tripartite agreement (VET school, company and student). Currently, 217 VET schools provide dual training for 12,395 students. The largest number of students undergoing dual training is in institutions in Khmelnytsky (877 people), Lviv (807), Vinnytsia (529) and Kyiv (464) regions. Currently, VET schools offer dual training for more than 190 out of 407 professions.

Improving VET's image. Before the war in February 2022, the need to adapt VET content to the needs of the labour market created the ground for discussion platforms between representatives of the education and business sectors. A good example of a partnership between education and business is the World Skills Ukraine competition (WSU). It has attracted several large and small companies to work more closely with VET schools and support the competition. The WSU organising committee consists mainly of representatives of the business community (Employers' Association of Ukraine, Association of Metallurgists of Ukraine, companies of the Association of Metallurgical Enterprises). Together with VET representatives, they define the competences for each competition, taking into account the actual demand for skilled labour and the dynamics of young people's enrolment in VET, especially for the professions that are in high demand in the Ukrainian labour market (e.g. locksmiths, electricians, welders, cooks, hairdressers, plumbers, etc.) (WSU, 2021). WSU also provided an opportunity to slowly improve the reputation of VET and show society the 'cool side' of the VET pathway. At this stage, MoES launched a new initiative to draw young people's attention to VET. As part of the EU4Skills project, the platform "Thanks to us" (Vocational Education in Ukraine, 2022) was launched under the communication campaign "Everything works thanks to us". The platform explains why not everyone needs higher (university) education and promotes eight VET professions (locksmith, tractor driver, baker, carpenter, turner, welder, tailor and system administrator). This new initiative will improve the quality of career counselling which is still outdated despite efforts to establish Career (Development) Centres (CDC) at VET schools. The lack of trained staff in the CDCs diminishes the desired impact of this initiative.

Development of modern VET standards. Currently, there is also some progress in overcoming the identified lack of a quality assurance system. In 2019, GoU launched the National Qualifications Agency (NQA), which now supports the creation of vocational standards with the active involvement of representatives of employers, VET institutions, and the research community. This will provide the basis for a comprehensive update of educational standards for VET. Traditionally, the educational standard (i.e. the curriculum) is updated as soon as the occupational standard (i.e. the job-related standard) is in place. This change increases the quality

of the VET content and later, the outcomes. To this end, MoES uses a modular competence approach, which is a comprehensive approach to building the training content in a given occupation and focuses on acquiring the knowledge, skills, and abilities required for the job. The competence-based educational standards in VET thus have specific characteristics. There are no standard curricula for subjects and industrial training. The list of subjects is determined by the VET schools together with their partner companies. The VET schools develop the work curricula together with the partner companies and coordinate them with the regional VET institutions. The curriculum is divided into modules. As of August 2022, there are over 200 newly updated and created VET standards (MoES, 2020).

The National Qualifications Agency (NQA) and the Ministry of Education and Science (MoES) share the responsibility for creating and managing the standards. Thus, NQA supports the creation of occupational standards and manages the register of occupational standards. MoES is responsible for the creation of VET standards and manages their register. Occupational standards are important to outline the clear requirements for a worker. They are the list of competences. VET standards must ensure adequate training to provide all the required competences. Therefore, training materials (textbooks, online training materials) need to be updated according to the new standard, and simulators and trainers need to be trained. It is important to ensure quality access to the internet and relevant e-learning tools (gadgets and software). VET teachers must include the introduction of innovative technologies into the production process. It is useful to involve practitioners and production specialists in the training process and it is crucial to maintain the organisation of dual training and internship programmes.

Balance of needs and resources. The reasons for reforming the VET system before 2017 also included the inefficient network of VET schools, the lack of understanding of the importance of VET for the development of the region and Ukraine, the lack of medium-term planning and the stable decline in student numbers due to the poor image of VET and the demographic situation. Accordingly, the number of VET schools is also declining (Table 3).

Table 3: Quantity retrospective on VET sector responsiveness to population decrease in Ukraine

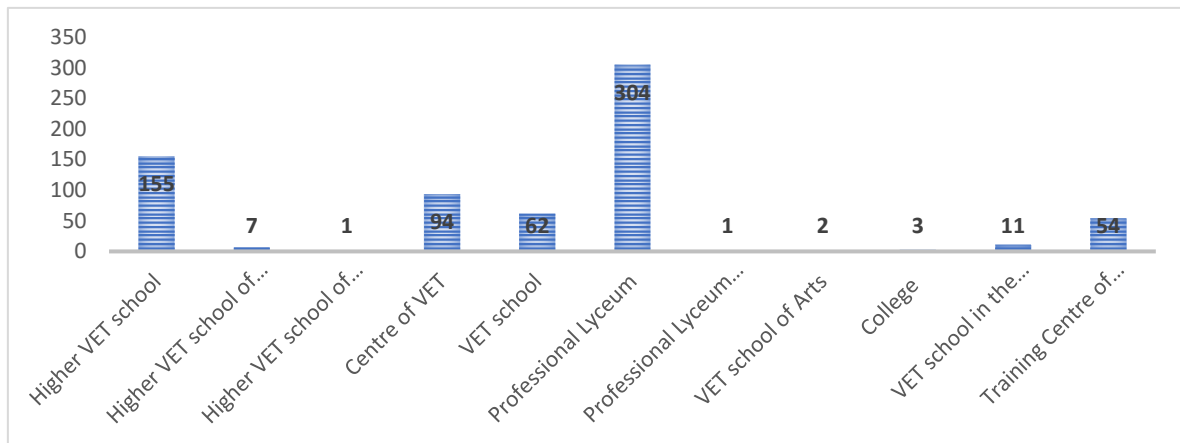
Year	Number of the population of Ukraine	Number of VET students	Number of VET schools
2010	45,778,500	416,469	940
2015	42,928,900	304,113	798
2016	42,760,500	285,820	787
2017	42,584,500	269,359	756
2018	42,386,403	254,991	736
2019	42,153,201	245,775	723
2020	41,902,416	246,855	711
2021	41,588,354	250,336	694
2022	41,167,336	up to the results of the enrolment campaign 2022-2023	approx. 634 as of October 03, 2022

Source: Snizhana Leu-Severynenko based on the information from the State Statistics Service (SSS, 2020) and the Unified State Digital Database on Education (Register of educational entities (2022))

As of 1 January 2022, there were 694 VET schools in Ukraine, of which 685 were under MoES and 9 VET schools were managed by other ministries. Most VET schools are located in the regions of Dnipropetrovsk (57), Lviv (53) and Donetsk (43). The most popular regions for vocational students are Lviv (21,166), Dnipropetrovsk (20,994) and Kharkiv (13,867). Traditionally, VET schools were under the supervision of the Ukrainian government, but under the decentralisation reform (since 2016), the MoES now supports the transfer of ownership of VET schools from the state to municipalities (e.g. 257 VET schools were transferred to municipal ownership in 2021). This is crucial for the development of regions, as they want to cover VET expenditure from their budgets and use VET resources to meet their development needs with as few bureaucratic procedures as possible.

Currently, there are different types of VET institutions. There are vocational schools, higher vocational schools, vocational lyceums, vocational training centres, and some other types (Figure 4). They offer different VET programmes at different levels of VET. The ongoing reform process aims to reduce the number of VET institutions to four types (e.g. VET lyceum, VET school, VET centre and VET centre for workers) to enable better understanding and improve the image of the VET system.

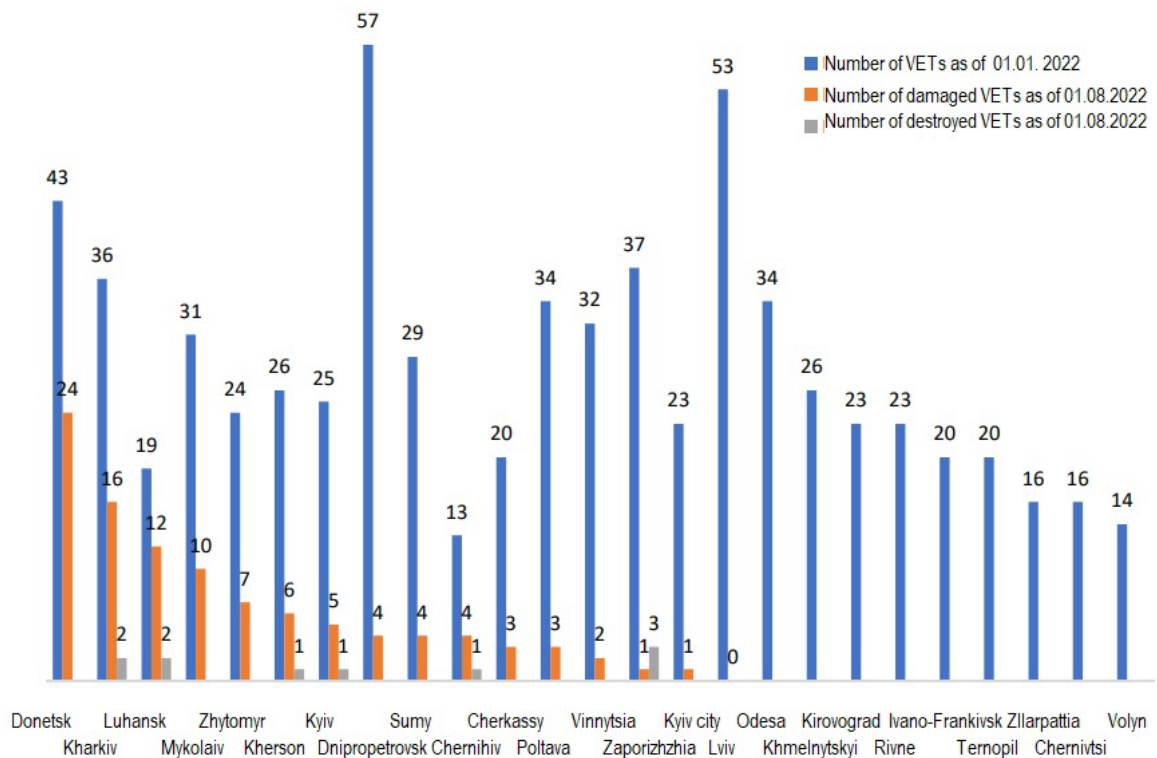
Figure 4: Number and types of VET schools



Source: Snizhana Leu-Severynenko based on the information of State Statistics Service (SSS, 2022 – pre-war statistic)

In the conditions of Russia's military aggression, VET suffered significant losses that seriously affected its facilities, infrastructure and functioning. By 12 August 2022, 14 VET schools were destroyed, and 96 VET schools were damaged. 16 VET schools have already managed to renovate their premises (Figure 5). It is, therefore, necessary to restore and optimise the network of VET schools as soon as the war is over. This will make it possible to match the number of VET schools and students with the financial capacity of the regions to meet their needs for skilled labour.

Figure 5: Number of VET schools as of August 2022



Source: Ministry of Education and Science of Ukraine (MoES, 2022 (c), p 141)

According to the statistical data, the number of students in VET schools has decreased from 315,600 people in 2014 to 243,825 people in 2022. One of the reasons for this is the decline in the share of young people aged 15-24 in the total population (from 11.3% to 9.5%), alongside ineffective career guidance activities and insufficient popularisation of occupations. In addition, there is a rapid change in the demographic composition of the population due to the war, with a simultaneous increase in the labour market's demand for skilled labour.

Forced resettlement has also exacerbated the problem of staff and personnel in VET schools. Before 24 February 2022, about 32,000 teachers are employed in VET system. As of 25 June 2022, 194,697 VET students were studying in the territory controlled by Ukraine. Most VET students studied in Lviv (19 837), Dnipropetrovsk (15 760), Odesa (12 405) and Vinnytsia (11 099) regions. 18 499 VET students studied outside the territory of Ukraine. They came mainly from the regions of Dnipropetrovsk (1643), Kharkiv (1387), Lviv (1382) and the city of Kyiv (1547). At the same time, 173 people left Ukraine and were enrolled in foreign educational institutions. According to statistical reports as of 1 August 2022, the number of applicants for VET is expected to be 202,836 people (MoES, 2022 (c), pp. 145-146).

There is currently a shortage of staff and students in VET schools. In October 2022, 29,467 VET teachers started training 227,056 VET students in 564 VET schools (out of 694), using face-to-face teaching (157 VET students), distance learning (120 VET students) and mixed teaching (287 VET students) (MoES, 2022 (c), p. 141). The admission campaign is currently active, and the 'true picture' will be available in November 2022.

Reforming the system: pre-war achievements

In addressing the above challenges and obstacles to VET development, Ukraine was supported by various sources and partners. At the same time, the Ukrainian government managed to match its own initiatives with supporting projects and measures. As a result, there was some progress in VET development before the war started, which is presented in more detail in the following chapter of the article. You will learn more about the supporting and implementing partners, their projects and initiatives, and the results of the joint efforts.

Stakeholders, partners, and actors involved in supporting and developing VET include the authorities of the Ukrainian government, public institutions, research institutes, social partners, private sector partners, and VET providers. Ukraine is also supported by international and EU institutions that have a high level of expertise in VET. They help to provide the background and ensure the next level of support for VET development in Ukraine, namely the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the EU Delegation to Ukraine (EU Del), the European Training Foundation (ETF), the Federal Institute for Vocational Education and

Training (BIBB), the International Labour Organization (ILO), the United Nations Development Programme (UNDP), the United States Agency for International Development (USAID), the World Bank (WB) and others. Each stakeholder, partner, or actor brings its specific expertise at a high level and supports the development of VET by addressing various development issues and trends in the national and foreign labour market, namely

- Addressing VET policy issues, VET policy analysis, decentralisation of VET, VET institution network building, modular approach to training and skills development, dual training, training and employment, socio-economic and regional development, lifelong learning, human capital, and workforce development, etc.
- They conduct scientific and applied research and provide the appropriate methodological support to ensure the continuous and forward-looking development of the VET sector to meet the needs of the current and future labour market. Initiate and develop the links between education and business based on common goals and needs through win-win interventions, activities, and partnerships.
- Support the progressive provision of VET, the implementation of approaches to recognize the results of prior learning, and the implementation of LLL principles to meet an individual's skill needs and promote the relevance of their employability in the labour market and professional development opportunities.

ETF. The European Training Foundation (ETF) has been working with Ukraine for many years as one of its priority countries. In 2010, as part of its mid-term support strategy, ETF conducted the first cycle of reviews of VET policies and systems in all its partner countries and territories, known as the Torino Process. In 2010, ETF launched the Torino Process initiative to ensure a periodic review of VET systems in the wider context of human capital development and inclusive economic growth. The quality assessment of VET policy is based on four fundamental principles: ownership, participation, and holistic and evidence-based analysis. Ukraine joined the initiative from the very beginning, and since then, four national reports for 2010-2011 (ETF, 2011), 2014-2015 (ETF, 2015), 2016-2017 (ETF, 2017), 2018-2020 (ETF, 2019,) have been published. Those assessments provide an external, forward-looking analysis of Ukraine's human capital development issues and VET policy responses from a LLL perspective. They identify challenges related to education and training policy and practice that hinder the development and use of human capital. The reports identify these challenges and put forward recommendations on possible solutions to address them.

The Torino Process is not the only initiative that ETF is using to support the reforming of VET in Ukraine. The country is actively involved in a number of ETF initiatives to reform the VET system, focusing on issues such as qualifications, the future of skills in key economic sectors, and governance arrangements to modernise the system and bring it closer to the EU. ETF has already

invested in teacher training (ETF, 2020), career guidance (ETF, 2022), vocational excellence (ETF, 2022 (b)) as well as green, digital and entrepreneurial key competencies (ETF, 2021, (a) and (b)) ETF has also supported the modernisation of labour market information systems through the make-it-match network and big data analysis of the labour market. Currently, in terms of the war, ETF is continuing its work where circumstances allow, in close cooperation with the Ukrainian partners. In the future, ETF plans to step up its cooperation with its Ukrainian counterparts in close cooperation with the European Union to do everything possible to further support Ukraine in its efforts with regard to VET and labour market expertise of Ukraine.

EU4Skills and the reform of the Government of Ukraine. In 2017, the European Delegation to Ukraine project "Formulating EU support for vocational education and training (VET) reforms in Ukraine" succeeded in mapping and analysing the state of VET in Ukraine. This laid the foundation for a profound reform of VET, which is being piloted under the programme EU4Skills: Best Skills for Modern Ukraine" (EU4Skills programme, 2019-2023). In 2018, the Ukrainian government and the EU Commission signed an agreement on funding the programme "EU4Skills: Best Skills for Modern Ukraine" and its implementation in seven pilot regions (Chernivtsi, Lviv, Mykolaiv, Poltava, Rivne, Vinnytsia, and Zaporizhzhia) (Supreme Council of Ukraine, 2018). In order to ensure a balanced development of the VET system across the country, the Ukrainian government launched a parallel reform process. It started implementing the concept for the implementation of the state policy in the field of VET "Modern vocational education and training" for the period until 2027 (UA VET Concept, 2019) (CMU, 2019; CMU, 2020). The aim of the programme is to support the reform of VET, to adapt training to the demands of the labour market, and to help young people and adults realise their potential. Three components play an essential role in achieving this goal. They are improving the effectiveness of VET reform (1), improving the quality and attractiveness of VET, increasing its match with labour market needs (2) and modernising VET infrastructure and equipment (Supreme Council of Ukraine, 2018). The EU4Skills programme and the UA VET concept are well balanced and planned to ensure an efficient step-by-step reform process that aligns VET with labour market needs, improves the quality of VET content and increases the attractiveness of VET in Ukraine. Some of the results in terms of achieving the three strategic objectives are already available (Infobox 1) (Leu-Severynenko, 2022, (b)).

Info Box 1. The results of the current reform process as of 2021.

The **first strategic goal** of the UA VET Concept (2019-2021) is aimed at the modernization of the infrastructure of VET schools and the development of a new funding and management model. Its results are already in place. The GoU signed the financial agreement (EUR 58 million) between Ukraine and the European Investment Bank (EIB) «Program for the VET support in Ukraine» for creating the Centers of excellence (CoE). MoES financed the establishment and modernization of training-practical centers in 62 VET schools, supported the transfer of VET schools' properties from state to communal ownership for 257 VET schools, and launched a series of capacity-building sessions for the Regional VET Councils. EU4Skills program supported the signing of 17 Memoranda on the infrastructure modernization between VET schools, the Ukrainian Social Investment Fund (USIF), and local authorities in seven pilot regions, started piloting methodical recommendations on VET network optimization in pilot regions, conducted the survey of employers in 10 regions (more than 20,000 enterprises) and a survey of graduates (13,000) to analyze labour market needs, provided methodological support for establishing the Supervisory Board at VET schools, launched the development process of the electronic VET management system (EMIS). MoES and EU4Skills program supported the elaboration of the VET Regional Development Plans by 11 Regional VET Councils.

Under the realization of the **second strategic goal** of the UA VET Concept MoES financed the publishing of 67 000 copies of educational literature and approved the set of legislative and supportive documents. They are the *order on the recognition in Ukraine of professional qualifications obtained in other countries*, the *State Standard on VET*, *Methodological recommendations on the development of competency-based educational programs* (piloted), and *Methodical recommendations on developing the internal quality assurance system for VET*. MoES also piloted the online tool SELFIE in collaboration with ETF and developed four online courses together with ILO. EU4Skills program ensured digital competence development for 2,500 VET teachers, conducted the online course on safe digital education for representatives of 21 VET schools and 25 educational and methodological centers for VET, provided ToT on management issues for 69 directors and deputy directors of VET schools, developed methodological recommendations on creating career centers at VET schools (93 centers established in 2021) and prepared the guidance manual for VET schools «Blended learning at VET schools». MoES approved 22 state educational standards and drafted 30 more in collaboration with the EU4Skills program.

In terms of the **third strategic goal** of UA VET Concept, MoES implemented the communication campaign on VET reform “We are changing”, developed the network of contacts, and improved communication with Regional VET Councils, administrations of VET schools, education departments, and scientific and methodological centers for VET (906 contacts). MoES also conducted a series of events aimed at increasing the attractiveness of the VET system, namely: the regional stage of WorldSkills Ukraine 2021-2022 competition (except Khmelnytskyi region), the Ukrainian National Vocational Skills Week, National Competitions of Professional Excellence (for the 1st time – online), the competition «My VET school is building up the energy-efficient Ukraine” (under the communication campaign on the popularization of professions and education in the field of energy efficiency; organized by GIZ). EU4Skills program organized the Conference «Education of opportunities: new horizons of vocational education and training in Ukraine», realized the media project «Explaining dual education in Ukraine», and provided support on career-guidance issues, namely: developed the concept of professional orientation and started its piloting in 8 regions; created 4 out of 15 professional-oriented manuals for students, developed a communication strategy and a creative concept for the promotion of working professions under the national communication campaign, and created and shared 5 professionally-oriented videos with a psychologist for parents of potential VET students.

Source: Snizhana Leu-Severynenko based on the information of the Ministry of Education and Science of Ukraine (MoES, 2022, (a))

National Qualification Agency (NQA). In 2019, the Government of Ukraine established the NQA. The NQA is empowered to implement state policy in the area of qualifications. This includes the development of mechanisms for the transparent and effective allocation of vocational qualifications based on modern occupational standards and forecasts of labour market needs, as

well as the adaptation of the Ukrainian qualifications system to the objectives of the European VET policy. It is planned that NQA will accredit Qualification Centres whose task will be to validate qualifications acquired in Ukraine or abroad through formal, non-formal education or informal learning (NQA, 2021). The first qualification centre has already started its work at the Higher Vocational School No. 33 in Kyiv. It offers services to confirm qualifications for cooks and confectioners. To ensure the proper work and expertise of the Qualification Centres, NQA has already trained more than 132 accreditation experts and more than 100 assessors to a professional level (NQA, 2022).

In addition, NQA coordinates the development of modern professional standards oriented to the needs of the labour market and maintains a register of occupational standards and a register of qualifications. Other tasks include issues of professional development, retraining, compliance with occupational standards, and the further development of the National Qualifications Framework (NQF). NQA maintains communication with enterprises, trade unions, and the central executive bodies in the field of qualifications and forecasting of labour market skills needs (e.g. Ministry of Education and Science, State Statistics Authority, State Employment Service, State Education Quality Authority, State Labour Affairs Authority, etc.).

The NQF was approved at the end of 2011. It was only aligned with the European Qualifications Framework for Lifelong Learning (EQF) in June 2020, which contributes to its harmonisation with European policies. Currently, the NQF is in the active operation phase. From October 2021 to May 2022, the European Commission and the ETF supported the comparison of the NQF and EQF. As a result of this work, a report on the comparison of EQF and NQF was produced and presented to the EQF Advisory Group in June 2022. It shows that the NQF and EQF levels are well aligned (Figure 1). Therefore, the main priority at present is to ensure the preparation and implementation of a joint action plan for the deep harmonisation of the NQF and EQF. This will make the NQF and the qualifications system as a whole transparent and understandable, which will facilitate the recognition of Ukrainian qualifications abroad, international academic and professional mobility, and the international positioning and application of the EQF.

In addition, there is the New Ukrainian School programme. This is a complex reform of general and secondary education, which provides for the gradual integration of VET into the higher grades of secondary education. The share for VET and academic directions is planned until 2027 (MoES, 2016).

What happens next? Post-war recovery and plans

As soon as the war began in February 2022, the reformation process was interrupted. The main concern was to save people and ensure their chances of survival. The VET sector played an

important role in this process. By April 2022, VET schools provided hostels, premises, and support to 17,503 IDPs. Since then, the number of IDPs supported has changed due to internal and external migration of the Ukrainian population. An increase is expected in Autumn 2022. There are no or inadequate heating facilities in the damaged and destroyed cities and towns. The VET schools allocate dormitories or other suitable premises to the IDPs and provide food and some psychosocial support. The staff of VET schools help the IDPs to adapt to the conditions in which they have been and still are.

As a result of the war, training processes at all levels of education in Ukraine have been significantly disrupted. According to MoES, by 20 June 2022, at least 650,000 students and 22,000 pedagogical staff of general education schools had been forced to flee abroad, including some 2,029 children with special educational needs. In addition, at least 2,028 educational institutions were damaged by shelling and bombing, 209 of which were completely destroyed. About 15% of the research infrastructure of universities and research institutions was also destroyed (MoES, 2022, (b)).

In the first months of the war in Ukraine, MoES developed a three-stage plan based on real-time needs and damage to ensure flexibility and adaptive development of all levels of education. In most regions, students of all school types had the opportunity to acquire their knowledge and skills through distance learning, VET students could graduate early in April 2022, and secondary students used a simplified enrolment procedure to continue their education at VET schools or universities.

In May-June 2022, GoU prepared the National Recovery Plan for Ukraine, which was presented by the President of Ukrainian at the fifth Ukrainian Reform Conference (URC 2022) in Lugano on 4-5 July 2022 (URC2022). The objectives of the plan are resilience (economic, social, and environmental resilience in the marathon of victory), recovery (efficient solutions for restoring key economic and social processes and natural ecosystems as quickly as possible), and modernisation and growth (developing a modernisation plan to ensure accelerated sustainable economic growth and prosperity of the population). In addition to the general view and steps, there are thematic sections for each sector of Ukraine's development.

The analysis of the materials of the Working Group on Education and Science of the Reconstruction Plan (URC2022) and the analytics collection of MoES (MoES, 2022, (c)) show that there is still a need to address the previous and new challenges of VET in the areas of *legislation, financial support, management and coordination, quality of education and balance between needs and resources*. The recommendations developed are briefly presented below (and Annex 1).

Legislation. There is still a great need for a new law on VET in Ukraine. It will make it possible to ensure the proper development of the sector and to resume VET reform as set out in the Ukrainian "Concept of Modern VET 2027", which was interrupted by the war.

Financial support. It is planned to implement the mechanism for financing the training of specialists from the state budget and the retraining of adults for the reconstruction of Ukraine in response to the challenges of the war. A draft law amending the Budgetary Code of Ukraine regarding the financing of VET schools is already available. It aims to (a) restore the main funding instrument for VET – the state mandate; (b) reopen the possibility of issuing a regional mandate for the training of VET entrants in VET schools; (c) maintain regional financial support for regional networks of VET schools until they change the form of ownership from public to municipal. There is also a bid to give VET schools genuine financial autonomy, to change their status from a budgetary institution to an economic entity, and to remove them from the purview of ministerial administration.

Management and coordination. The Recovery Plan (URC2022) provides for the restoration of comprehensive independent assessment for student admission and certification, PPP development, the establishment of expert centres and the guarantee of their training, the digital management of VET institutions, the development of learning platforms, and the creation of electronic education passports. There are active discussions on the possible corporatisation of colleges.

Quality of education. There is a wide range of plans to ensure a better quality of VET. There are plans to address the challenges of war by adapting education programmes, creating new programmes using the modular methodology, and building a network of Qualification Centres. This will ensure a better response to the needs of the labour market during and after the war. VET schools and enterprises will continue to provide dual training and on-the-job training. It will support the development of partnerships between enterprises and VET institutions and more accurate coverage of sectoral and regional labour needs. VET teachers will have the opportunity to receive further training to ensure the development of soft skills and entrepreneurial skills among trainees. It is also planned to improve career guidance and the attractiveness of VET in order to attract more young people to VET. To this end, it is important to continue the reform of the New Ukrainian School and to integrate VET-focused career guidance into primary and secondary education programmes (e.g. "Health, Safety and Well-being", "Entrepreneurship and Financial Literacy"). And, of course, the range of activities will target psychosocial support for participants in the educational process – both VET staff and students. It is planned to introduce psychological rehabilitation programmes, and adapt and support students and other participants in educational processes in war and post-war periods. In order to increase security, it is recommended to create an accessible and secure digital education and research environment for VET students and teachers.

Balance needs and resources. To ensure a balance between needs and resources, the National Recovery Plan provides for the resumption of the education process in war-torn areas, the restoration of the infrastructure of education and research institutions, and the establishment of an effective network of VET schools to meet the post-war needs of individuals, society and the economy. Under conditions of limited resources for winterisation, there is a need to improve the economic and energy efficiency and reliability of the heat supply systems of VET schools and to implement a range of measures to increase the energy efficiency of VET school buildings. In order to avoid the shortage of skilled labour for recovery and reconstruction, it is proposed to reduce the minimum duration of training in the VET sector to 1 to 1.5 years and to establish a real register of VET qualifications to ensure adequate employment. The sectoral working group also recommends the standardisation of VET and professional pre-higher education, but as long as the image of VET is poor, this will not be possible. And, of course, the return of young people to Ukraine must be supported, with one of the proposed solutions being to implement scholarship programmes for those who could be employed in the near future.

At present, the EU4Skills programme is being resumed. It continues the implementation of previously planned measures to increase the quality and attractiveness of VET. In cooperation with MoES, the visibility of the 2022-2023 admission campaign was increased. A new slogan "Put your hand to..." was introduced, and attractive visuals were developed (MoES, 2022, (d)). They created the landing page for the communication campaign "Everything works thanks to us" (Vocational education in Ukraine, 2022). It contains the main promotional video and eight video stories about the heroes of the campaign: a locksmith, a tractor driver, a baker, a carpenter, a turner, a welder, a tailor and a system administrator. The resource also explains the pros and cons of VET and provides tools to create stickers and GIFs.

To increase the attractiveness of VET for young people, MoES and the EU4Skills project launched the VydnoKurs (I see the course) training course in September 2022 (MoES, 2022 (e)). It aims to train more than 200 VET representatives (managers, staff, teachers, etc.) in working with social media to build effective communication with young people. Participants will be able to create a communication plan, learn how to work with media and opinion leaders, develop a social media strategy and learn how to write texts and create visual content. The main expectation is to improve the reputation of VET and to have interesting communication with future students. The main objective is to increase the proportion of apprentices in VET by attracting more young people to VET and providing further training/retraining opportunities for adults.

A brief outlook

So there are both obstacles and opportunities on the way to creating a national model of VET in Ukraine. It is possible that the current consequences of the war damage and its results will help

to create a new model from scratch. Once the war is over, MoES will use the experience and expertise already gained to rebuild the Ukrainian education system at all levels.

The Ukrainian government must resume the reform of VET interrupted by the war, as set out in the Ukrainian "Concept of Modern Vocational Education and Training 2027". This process includes the establishment of new multifunctional VET centres equipped with modern facilities and curricula, and the reconstruction of destroyed VET institutions. In addition, GoU must promote PPP within the framework of a dual VET system that was established before the war. It is worth recalling that the successful implementation of this reform is crucial to ensure that Ukraine's education system is well aligned with the needs of the labour market in order to improve productivity and long-term economic growth.

Annex 1: The potential directions of VET development

Advised interventions in 2017	Years						Progress as of 2022	Updated advised interventions as of 2022	Responsible parties	Timeline		
	1	2	3	4	5	6				2022	2023-2025	2026-2032
Creation of the National VET Council	X						Order About Priority Measure for the development of professional (vocational and technical) education (2021)	Resume the work of the National VET Council	GoU and stakeholders	X		
Creation of Regional VET Councils	X						Decree about the Model regulation on the regional council of professional (vocational and technical) education (2019, CMU)	Resume the work of the Regional VET Councils	Local authorities	X		
Development and approval of the National VET Strategy	X	X					Concept of implementation of state policy in VET "Modern professional (vocational) education" up to 2027 (UA VET Concept) (2019, GoU) Development strategy of professional (vocational and technical) education until 2023 (2020, MoES) Concept of State targeted social program for VET development 2022-2027 (2021, GoU) Law for VET is still under development	Keep the process of creating and realizing the National VET Strategy	GoU and stakeholders	X		
Creation of a legally regulated policy monitoring system		X					Education Management Information System (EMIS) for the VET sector is under development.	Complete the creation and start using EMIS	MoES and stakeholders	X	X	
Strengthening the potential and capacity of national authorities to coordinate, implement and monitor credible and relevant sector reforms		X						Ensure upskilling of responsible specialists	MoES and stakeholders	X	X	
Development and approval of regional VET strategies		X					Regional VET strategies are in place	Adapt the strategies to the current situation and align with the priorities of the national level Create the Supervisory Boards at VETs	Local authorities	X	X	X
Implementation of transitional measures and/or VET Strategy (3-5-years)	X	X	X	X	X	X	UA VET Concept (2020) EU4Skills Project interventions (2019)	Keep the reforming process going and attract additional funding for further steps realisation	GoU, MoES and local authorities	X	X	X
Decentralization and optimization of VET management	X						69 directors and deputy directors of VETs are trained	Continue training VET managers (especially on the issues of project management)	GoU and MoES	X	X	
Optimization of the network of VET schools	X	X					Recommendations for VETs network optimization (2021, MoES) Transfer VETs from state to communal ownership (2021, MoES)	Continue optimization process considering the needs of regions and VETs (if damaged or ruined) Implement the model of Centres of Professional Excellence for VETs Create Qualification Centres at VETs	GoU, MoES and local authorities	X	X	

Improvement of financing mechanisms	X	X					Phased transition to financing VETs located in the cities-regional centers from regional budgets (UA VET Concept)	Ensure the state order for a qualified workforce. Financial independence to VETs	GoU, MoES and local authorities	X	X	
Improvement of legislation in VET	X	X	X				The Law for VET is still under development	Approve and launch the Law for VET	GoU and MoES	X	X	
Improving VET quality and ensuring its compliance with the needs of the labor market	X	X	X	X	X	X	2,500 trained VET teachers (2021, EU4Skills). 22 state educational/VET standards are approved and 30 ones are drafted (2021, MoES)	Set education-business partnerships, engage the companies to the training process Implement PPP Model and mechanisms Keep state educational/VET standards development Develop and offer short-term training courses for adults Start the register of Professional Qualifications Train Assessors of learning outcomes Monitor VET quality	MoES, VET schools, stakeholders, social and business partners	X	X	X
Professional guidance and career development		X	X	X	X	X	8 regions piloted professional orientation concept; 4 out of 15 promo manuals for students; communication strategy; 5 promo videos for parents of VET students (2021, MoES and EU4Skills) 93 CDCs created at VETs (methodological recommendations)	Keep the promo campaigns going Attract new partners to develop VET visibility Equip CDCs to make them hubs for career development, guidance, engaging private sector Train career guidance and development consultants Keep the conduction of World Skills Ukraine	MoES, VET schools, stakeholders, social and business partners	X	X	X
Modernization VET technical infrastructure and equipment			X	X	X	X	GoU created 194 training-practical centers (TPCs) Businesses and partners created 180 TPCs	Keep creation of TPC/create VET platforms Upgrade or build bomb shelters in VETs Rebuild the damaged VETs (campuses, dormitories, etc.)	MoES, VET schools, stakeholders, social and business partners	X	X	X
Pilot testing of innovative models in selected VET schools or at the system level	X	X	X	X	X	X	The process is going on in terms of EU4Skills Project and the UA VET Concept realization.	Keep piloting and using of best practices e.g. VR/AR, simulation-based learning, online /distance learning, practice-based training Keep implementation of dual education elements, pilot use of training in networks Participation of VETs in the Erasmus+ projects Upskill VET teachers	MoES, VET schools, stakeholders, social and business partners	X	X	X

Source: Snizhana Leu-Severynenko based on Formulation of EU Support to Reforms in Vocational Education and Training (VET) in Ukraine (AECOM, 2017), URC2022– Recovery plan (UEC2022) and Education of Ukraine in the conditions of Martial Law. Information and analytical collection. (MoES, 2022, (c))

REFERENCES

- AECOM (2017). *Formulation of EU Support to Reforms in Vocational Education and Training (VET) in Ukraine*. Final Formulation Report (2017). Retrieved October 24, 2022, from https://www.auc.org.ua/sites/default/files/sectors/u-137/zvit_yevo.pdf
- CMU (2019). *Concept of implementation of state policy in VET field "Modern professional (vocational) education" for the period up to 2027*. | Cabinet of Ministers of Ukraine. Retrieved October 25, 2022, from <https://zakon.rada.gov.ua/laws/show/419-2019-%D1%80#Text>
- CMU (2020). *About approving the Action Plan 2020-2027 on realization of the Concept of implementation of state policy in the VET field "Modern professional (vocational) education" for the period up to 2027*. | Cabinet of Ministers of Ukraine. Retrieved October 25, 2022, from <https://www.kmu.gov.ua/npas/pro-zatverdzhennya-planu-zahodiva508r>
- ETF (2011). *Torino Process 2010-11* | European Training Foundation. Torino Process 2010-11 | ETF. Retrieved October 25, 2022, from <https://www.etf.europa.eu/en/publications-and-resources/publications/torino-process-ukraine>
- ETF (2015). *Torino Process 2014-15* | European Training Foundation. Torino Process 2014-15 | ETF. Retrieved October 25, 2022, from <https://www.etf.europa.eu/en/publications-and-resources/publications/torino-process-2014-ukraine>
- ETF (2017). *Torino Process 2016-17* | European Training Foundation. Torino Process 2016-17 | ETF. Retrieved October 25, 2022, from https://www.etf.europa.eu/web.nsf/pages/Torino_Process_2016-17
- ETF (2019). *Torino Process 2018-20* | European Training Foundation. Torino Process 2018-20 | ETF. Retrieved October 25, 2022, from https://openspace.etf.europa.eu/sites/default/files/2020-10/TRPreport_2019_Ukraine_EN.pdf
- ETF (2020). *Five teachers from ETF partner countries nominated finalists for the Global Teacher Prize 2020* | ETF. (2020, September 25). Five Teachers From ETF Partner Countries Nominated Finalists for the Global Teacher Prize 2020 | ETF. Retrieved October 25, 2022, from <https://www.etf.europa.eu/en/news-and-events/news/five-teachers-etf-partner-countries-nominated-finalists-global-teacher-prize>
- ETF (2020). *Torino Process 2018–2020 Ukraine National Report*. (2020). European Training Foundation. Retrieved October 24, 2022, from https://openspace.etf.europa.eu/sites/default/files/2020-10/TRPreport_2019_Ukraine_EN.pdf
- ETF (2021). (a). *Decentralising vocational education and setting up centres of vocational excellence and innovation: The case of Ukraine* | ETF. (n.d.). Decentralising Vocational Education and Setting up Centres of Vocational Excellence and Innovation: The Case of Ukraine | ETF. Retrieved October 25, 2022, from <https://www.etf.europa.eu/en/publications-and-resources/publications/decentralising-vocational-education-and-setting-centres>
- ETF (2021). (b). *The key competence lighthouse: Key-competence-driven reforms in Ukraine and Georgia* | ETF. (2021, September 9). The Key Competence Lighthouse: Key-competence-driven Reforms in Ukraine and Georgia | ETF. Retrieved October 25, 2022, from <https://www.etf.europa.eu/en/publications-and-resources/publications/key-competence-lighthouse-key-competence-driven-reforms>
- ETF (2022). (a) *A review of national career development support systems in Armenia, Azerbaijan, Georgia and Ukraine* | ETF. (n.d.). A Review of National Career Development Support Systems in Armenia, Azerbaijan, Georgia and Ukraine | ETF. Retrieved October 25, 2022, from <https://www.etf.europa.eu/en/publications-and-resources/publications/review-national-career-development-support-systems-armenia>
- ETF (2022). (b). *Decentralising vocational education and setting up centres of vocational excellence and innovation: The case of Ukraine* | ETF. (n.d.). Decentralising Vocational Education and Setting up Centres of Vocational Excellence and Innovation: The Case of Ukraine | ETF. Retrieved October 25, 2022, from <https://www.etf.europa.eu/en/publications-and-resources/publications/decentralising-vocational-education-and-setting-centres>
- IPQ (2022). *Qualification Map of Ukraine - Career Map of Ukraine*. (n.d.). Institute of Professional Qualifications. Retrieved October 24, 2022, from <https://www.futureskills.org.ua/ua/map>
- Kulalaieva, N., Leu, S. (2019). *Work-based learning involving the dual education elements*. Professional pedagogy, 1(18), 162-168. <https://doi.org/10.32835/2223-5752.2019.18.162-168> Retrieved October 20, 2022, from <https://jrnls.ivet.edu.ua/index.php/1/article/view/323/273>

Leu-Severynenko, S. (2022). (b). *Reforming VET systems of Ukraine: pre-war achievements*. Collection of Scientific Papers «SCIENTIA», (April 22, 2022; Chicago, USA), 8–10. Retrieved October 25, 2022, from <https://previous.scientia.report/index.php/archive/article/view/126>

Leu-Severynenko. (2022). (a). *Govet / Vocational education and training in Ukraine: A system in transition*. BIBB - Vocational Education and Training in Ukraine: A System in Transition. Retrieved October 24, 2022, from <https://www.govet.international/en/159632.php>

MoES (2016). *The concept for "New Ukrainian School" (2016)*. | Ministry of Education and Science of Ukraine. Retrieved October 25, 2022, from <https://mon.gov.ua/eng/tag/nova-ukrainska-shkola>

MoES (2020). *Educational standards, curricula and programs*. Educational Standards, Curricula and Programs. Retrieved October 25, 2022, from <https://mon.gov.ua/ua/osvita/profesijno-tehnichna-osvita/reforma-profesijnoyi-osviti/zmist-profesijnoyi-osviti-osvitni-standarti-programi-informaciya-dlya-uchniv-ta-pedagogiv/derzhavni-standarti-navchalni-plani-ta-programi>

MoES (2022) (a). *Ministry of Education and Science of Ukraine - Home*. Home | Ministry of Education and Science of Ukraine. Retrieved October 24, 2022, from <https://mon.gov.ua/ua>

MoES (2022) (c). *Education of Ukraine in the conditions of Martial Law. Information and analytical collection*. (2022) | Ministry of Education and Science of Ukraine. Retrieved October 25, 2022, from <https://mon.gov.ua/storage/app/media/zagalna%20serednya/serpneva-konferencia/2022/Mizhn.serp.n.ped.nauk-prakt.konferentsiya/Inform-analityc.zbirn-Osvita.Ukrayiny.v.umovakh.voyennoho.stanu.22.08.2022.pdf>

MoES (2022) (d). *Video* | Ministry of Education and Science of Ukraine. Retrieved October 25, 2022, from <https://mon.gov.ua/ua/osvita/profesijno-tehnichna-osvita/vstupna-kampaniya/vstup-2022-profosvita/video>

MoES (2022) (e). *More than 200 vocational educators started training at "VidnoKurs."* (2022). Ministry of Education and Science of Ukraine. Retrieved October 25, 2022, from <https://mon.gov.ua/ua/news/ponad-200-proftehosvityan-rozpochali-navchannya-na-vidnokursi>

MoES (2022, March 10) (b). *Education under threat*. Save Schools | Ministry of Education and Science of Ukraine. Retrieved October 25, 2022, from <https://saveschools.in.ua/en/>

NQA (2021). *Qualification Centres*. (n.d.). National Qualifications Agency. Retrieved October 25, 2022, from <https://nqa.gov.ua/qualification-centers/>

NQA (2022). *There are already 132 experts on accreditation of qualification centers in Ukraine* експерти із акредитації кваліфікаційних центрів. (2022). National Qualifications Agency. Retrieved October 25, 2022, from <https://nqa.gov.ua/news/v-ukraini-vze-e-132-eksperti-iz-akreditacij-kvalifikacijnih-centriv/>

NQA (2022). *Webinar "Integration of professional qualifications of Ukraine into the European space."* (2022, September 20). YouTube of the National Qualification Agency. Retrieved October 24, 2022, from <https://www.youtube.com/watch?v=U2laDwfjp68>

Osvita.UA (2019). *Laws of Ukraine on education - normative documents - legislation*. (2019, June 7). Osvita.UA. Retrieved October 24, 2022, from <https://osvita.ua/legislation/law/>

Register of educational entities (2022). *Vocational (vocational and technical) education institutions* | Register of educational entities. (n.d.). Register of Educational Entities. Retrieved October 25, 2022, from <https://registry.edbo.gov.ua/profesiyno-tehnichna-osvita/>

SSS (2022). *Secondary education and vocational education and training in Ukraine*. State Statistics Service of Ukraine. Retrieved October 24, 2022, from https://ukrstat.gov.ua/operativ/operativ2022/osv/osv_rik/arch_pto_u.htm

Supreme Council of Ukraine (1998). *On professional (vocational. . .* | from 10.02.1998 № 103/98-BP. (n.d.). Official Web Portal of the Parliament of Ukraine. Retrieved October 24, 2022, from <https://zakon.rada.gov.ua/laws/show/103/98-%D0%B2%D1%80#Text>

Supreme Council of Ukraine (2018). *The Agreement about financing "EU4Skills: Better Skills for Modern Ukraine"*. | Official Web Portal of the Parliament of Ukraine. Retrieved October 24, 2022, from https://zakon.rada.gov.ua/laws/show/984_005-18#Text

URC2022. *URC2022– Recovery plan*. (2022, July 5). URC2022– Recovery Plan. Retrieved October 25, 2022, from <https://www.urc2022.com/urc2022-recovery-plan>

Vocational education in Ukraine (2022, July 7). Vocational Education in Ukraine. Retrieved October 24, 2022, from <https://thanks-to-us.in.ua/?fbclid=IwAR2gvGuJzICsabA3BU26jd0jNFjc4guJeYCau8trj-ZJd1xZfm3N2FQVUDY>

WSU (2021). *Competencies – WorldSkills Ukraine*. (2019, September 23). WorldSkills Ukraine. Retrieved October 24, 2022, from <http://www.worldskillsukraine.org/kompetencii/>

List of Figures

Figure 1: The system of Education of Ukraine.....	4
Figure 2: Age of VET students	5
Figure 3: The chronology of legislation updates in the education of Ukraine	7
Figure 4: Number and types of VET schools	133
Figure 5: Number of VET schools as of August 2022.....	13

List of Tables

Table 1: The rates of employment of VET graduates 2018-2020.....	5
Table 2: The most popular jobs for young people to study at VET schools (2021)	6
Table 3: Quantity retrospective on VET sector responsiveness to population decrease in Ukraine.....	12
Annex 1: The potential directions of VET development	23

List of abbreviations

CDC	Career development center
EQF	European Qualification Framework
ETF	European Training Foundation
GoU	Government of Ukraine
LLL	Lifelong learning
LM	Labour market
MoES	Ministry of Education and Science of Ukraine
NQA	National Qualifications Agency
NQF	National Qualification Framework
PPP	Public-private partnership
TPC	Training and practice center
VET	Vocational education and training
WSU	World Skills Ukraine