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DIGITAL SKILLS AND ONLINE LEARNING IN UKRAINE

DIGITAL SKILLS FOR VET STUDENTS

Policies, strategies, initiatives, practices

The modernisation of the education system has been a key national priority in Ukraine since 2016, when the Ministry of Education and Science began the reform of general education with the New Ukrainian School concept. It introduced the development of a competence-based approach and the EU key competences, including digital competence, as an obligation of the state in formal primary and secondary education. The adoption of the Law on Education in 2017 legally endorsed the concept of the New Ukrainian School and provided the basis for the reform of vocational education and training (VET)[1].

In the Modern Vocational Education concept[2] and the draft Law on Vocational Education[3], vocational key competences include the development of information and digital technologies. These policies require new educational standards in VET, with digital key competences and skills for using information and communication technologies (ICT) according to the new demands of the labour market.

All VET learners currently acquire basic digital skills through compulsory ICT lessons (144 hours in total – 72 hours per year for two years) and through compulsory and elective vocational subjects. Students in three-year VET programmes are required to study ICT in their first year, with two lessons a week. VET students are expected to acquire basic digital skills and competences (DSC) through a cross-curricular approach[4]. Different versions of the course are tailored to the specific needs of certain specialisations (e.g. enhanced MS Excel in financial accounting).

Digital competence as a key competence for VET learners

The Ministry of Education and Science is working on a new, competence-based standard for upper secondary education level, applying the EU Digital Competence Framework for Citizens (DigComp 2.1). Based on the standard adopted, the national curriculum and teacher training will be revised at system level.

VET reform is further supported by the EU4Skills: Better Skills for Modern Ukraine initiative aimed at improving workforce skills to help modernise the country's economy. It provides for the modernisation of technical and IT equipment in vocational schools.

Joint initiatives of public-private partnerships

Since 2018 there have been various joint initiatives between the public and private sectors. These are aimed at implementing in educational settings digital technologies that directly and indirectly influence the development of students' DSC.

One example is the Memorandum on Cooperation between the Ministry of Science and Education and the ICT school child social project, which covers the development of a new curriculum on informatics, the use of modern teaching methods, requirements for textbooks and school digital equipment, training of IT teachers and the preparation of future teachers.

[1] www.etf.europa.eu/en/publications-and-resources/publications/ukraine-education-training-and-employment-developments-2018

[2] https://zakon.rada.gov.ua/laws/show/419-2019-%D1%80

[3] https://mon.gov.ua/ua/news/yakoyu-maye-stati-profosvita-v-ukrayini-uryad-uhvaliv-zakonoproyekt-pro-profesijnu-profesijno-tehnichnu-osvitu

[4] https://mon.gov.ua/ua/osvita/profesijno-tehnichna-osvita/derzhavni-standarti-navchalni-plani-ta-programi/zatverdzheni-standarti-profesijnoyi-osviti-2019

To extend ICT qualifications, new programmes were introduced in initial VET (IVET) (formal education): information and software processing operator (80 institutions), telecommunications operator (5 institutions), office administrator (5 establishments), and radio and television programme administrator (1 institution). However, VET ICT courses and relevant statistics on digital competence remain limited.

Facts and trends

The Ukrainian information technology (IT) industry has demonstrated a steady growth of 19% on average per year. IT specialisations are mainly acquired in universities (91% of IT specialists in Ukraine are higher education graduates). The failure of the supply side to meet the growing demand for IT specialists is hindering the industry's development[5].

In 2016/17 there were 285 800 students in vocational schools, less than 1% of them enrolled in the telecommunication stream[6].

[5] https://en.brdo.com.ua/development-ukrainian-industry-2018-analytical-report/
[6] https://mon.gov.ua/ua/tag/profesiyno-tekhnichna-osvita

DIGITAL SKILLS FOR VET TEACHERS AND TRAINERS

Policies, strategies, initiatives, practices

According to the Law on the National Qualifications Framework[7], VET teachers and masters acquire DSC during their university studies through a subject exam or credit. However, this is usually a basic digital course and it is not part of the final state exam to enter the teaching profession in a relevant VET field.

Continuing professional development for VET teachers and trainers is provided through the 25 regional institutes of in-service teacher training. Once every five years teachers have advanced face-to-face training, usually of one week's duration, and their training programme contains an obligatory module of 36 hours on the use of ICT in the learning process.

Other training institutes in the regions conduct separate elective courses for VET teacher training. Further opportunities for peer learning and training include participation in professional online networks and platforms. For example, the Scientific-Methodological VET Centre in the Zaporizhzhia region organises training for teachers in DSC[8].

As an initial measure, in 2018 the Cabinet of Ministers approved the Development of Pedagogical Education concept[9], which includes the introduction of a digital competence standard for educators. The concept also provides for the creation of a teacher's e-portfolio and a new open educational e-platform for students and teachers[10].

To facilitate the use of distance and online learning in continuing professional development for VET teachers and trainers, the Ministry of Education and Science adopted a Provision on distance learning in formal and non-formal settings[11]. An example of this type of initiative is the Prometheus portal[12]. This portal offers groups of massive open online courses (MOOCs), which are useful for enhancing the digital competence of VET teachers and students.

DOL platform for teachers

The AIRO platform (www.airo.com.ua) was developed by the Academy of Innovative Development of Education, a scientific-pedagogical project of the Institute for Modernisation of Education Content (IMZO) at the National Academy of Educational Sciences of Ukraine. It offers online and blended courses and training for education specialists, including VET teachers, on a vast range of topics. In September 2019 the platform had 708 active users (out of 2 822 registered), and 260 registered users have completed distance courses.

An example of a distance-learning course for teachers is 'Designing and creating e-textbooks using Bristar UniMaster programme'.

www.airo.com.ua/proektuvannya-ta-stvorennya-elektronnyh-pidruchnykiv-u-programi-bristar-unimaster

www.etf.europa.eu/sites/default/files/document/Session%203%20Natalia%20Kliasen_EN.pdf

Cisco Academy for DSC of IT teachers

The Cisco Networking Academy programme provides professional and career development through DSC training for IT teachers.

In 2018 about 100 teachers from vocational schools upgraded their ICT skills. In 2019 the figure was 200 teachers. The first course in the training is 'Introduction to cyber security'. The course consists of 5 modules and takes 17 hours.

www.cisco.com/c/uk_ua/training-events/networking-academy/press-releases.html

[7] https://zakon2.rada.gov.ua/laws/show/1341-2011-%D0%BF/paran12#n12
[8] http://nmc-pto.zp.ua/
[9] https://mon.gov.ua/ua/npa/pro-zatverdzhennya-koncepciyi-rozvitku-pedagogichnoyi-osviti
[10] https://zakon.rada.gov.ua/laws/show/z0702-18
[11] https://mon.gov.ua/ua/npa/pro-zatverdzhennya-polozhennya-pro-distantsiyne-navchannya
[12] https://prometheus.org.ua/courses-for-teachers/

The draft Law on Vocational Education is in progress and will have formal requirements for teacher certification with an assessment of their digital competence.

Facts and trends

In 2015 the VET Institute of the National Academy of Pedagogical Science created a platform (LMS Moodle) for online learning[13] to provide distance-learning courses for VET specialists. The number of users of this portal is steadily increasing.

[13] https://e-learning.org.ua/

DIGITAL AND ONLINE LEARNING IN INITIAL VET

Policies, strategies, initiatives, practices

A number of policies, such as the Digital Agenda for Ukraine, highlight actions towards the digitisation of education, using digital and online learning (DOL) in education and training.

However, there are no formal requirements to use DOL in VET curricula. The Distance Learning Regulation[14] states that schools can choose to use distance learning in their provision.

Some colleges provide vocational courses through DOL. These are powered by Moodle and include video demos and interactive digital content, including tests and self-assessments. Examples include courses offered by the VET Centre for Construction Technologies in Kharkiv[15] and the VET Centre for Agricultural Education in Kyiv[16].

Online/electronic resources are considered a useful complementary tool in delivering ICT-related and other vocational programmes. However, few IVET schools regularly use digital learning methods, and these are mainly limited to using projectors and smart boards, with teaching focused on delivering traditional lessons by digital means (e.g. PowerPoint). The use of digitally innovative teaching methods is limited. In some technical vocational schools, VET-specific teaching software and simulators are used to reproduce work-like contexts and practices.

Textbook digitisation is mostly limited to PDF versions of printed books. Most vocational schools use Facebook as a convenient means of communicating with students and of students working together.

There are no ICT coordinators in VET institutions to support digitalisation in the VET system. Teachers of informatics are often asked for help with technical issues. The concept of DOL is not sufficiently developed in VET and its application is not sufficiently clear for VET teachers.

[14] https://zakon.rada.gov.ua/laws/show/z0703-13
[15] http://cpto2.com.ua/index.php/studying/navchannya-onlajn
[16] http://nmcbook.com.ua/відкриті-онлайн-курси/

Manual for distance learning in vocational training

In 2018 a methodological manual, 'Technologies for distance learning in vocational training', was developed by the VET Institute of the National Academy of Pedagogical Science. The manual is based on research conducted in the period 2016–18 on DOL methods in VET.

The manual aims to introduce distance learning in vocational education for skilled workers. VET professionals can learn about the technology used in developing electronic content, the means of ensuring the success of future skilled workers, and the organisation of their work in the distance learning process.

https://ivet.edu.ua/repozytarii/elearning

DOL in Zolotiv VET Lyceum of Luhansk region

In 2014 the Ministry of Education and Science launched a pilot on DOL in vocational schools for students and adults in the temporarily occupied territories.

Based on this, and given the need to reach students who have moved with their families to other regions of Ukraine, Zolotiv VET Lyceum of Luhansk region has developed a number of distance-learning courses. This may give a new impetus to the development of DOL in IVET at national level.

www.etf.europa.eu/sites/default/files/document/Session%203_Svitlana%20Mozgova_EN.pdf

https://mon.gov.ua/ua/npa/pro-provedennya-eksperimentu-vseukrayinskogo-rivnya-za-temoyu-organizaciya-profesijnogo-navchannya-uchnivskoyi-molodi-j-doroslih-yaki-prozhivayut-na-timchasovo-okupovanij-teritoriyi-ta-v-naselenih-punktah-na-liniyi-zitknennya

Facts and trends

According to a 2017 survey on the use of DOL[17], all IVET schools have an internet connection, and some have more than one. Most schools (72.2%) have Wi-Fi.

Ukraine is in second place in the world out of 139 countries for the cheapest access to broadband internet[18], but the speed quality differs. About 41% of general education schools have a connection speed of less than 10 Mbps, 14% from 10 to 30 Mbps, 26% from 30 to 100 Mbps, and 6% over 100 Mbps. Most VET providers report a lack of up-to-date equipment and a lack of licensed training software, which is a major barrier to DOL.

[17] https://ivet.edu.ua/news/novyny-z-eksperymentalnykh-navchalnykh-zakladiv/783-tekhnolohii-dystantsiinoho-profesiinoho-navchannia-elektronnyi-resurs

[18] According to the International Telecommunication Union as of January 2016

DIGITAL AND ONLINE LEARNING IN CONTINUING VET

Policies, strategies, initiatives, practices

Continuing VET and adult learning is a relatively new field in national education policies and strategies in Ukraine.

Lifelong learning was included in the Law on Education in 2017. Since that time, the Ministry of Education and Science and Ivan Zyazun Institute for Pedagogical Education and Adult Education, with other institutions[19], have been developing the Law on Adult Education. These developments are closely linked to the Law on National Vocational Qualifications and the Law on the National Qualifications Framework.

Although there is no specific provision of DOL in formal settings, non-formal provision is developing rapidly. MOOCs have been created, and licensed adult education providers offer training for occupations, and for professional and personal development. For example, distance learning is used at the VET Institute of the National Academy of Pedagogical Science, which provides online courses for floriculturists, window dressers and florists (2016–20).

Prometheus

Prometheus is a Ukrainian MOOC project that provides free online access to DOL for anyone who is interested.

The platform was launched in 2014 by Ivan Prymachenko, a graduate of Kyiv National Taras Shevchenko University. Today it offers courses on programming, history, entrepreneurship, civic education, and more. The authors of the courses are professors from leading universities in Ukraine and around the world. The platform contains many training courses for teachers.

Courses include media literacy, basics of web UI development, software testing basics, basics of information security, key competences in the digital age, and programming basics.

The platform has up to a million registered users, of whom about 11% have already received certificates for successful completion of courses.

Some courses have been successfully completed by 67% of users. The median age of users is 27 years.

[19] https://mon.gov.ua/ua/news/usi-novivni-novini-2017-09-14-mon-rozpochinae-robotu-nad-zakonom-%C2%ABpro-osvitu-doroslix%C2%BB

Facts and trends

There is no data available on enrolment in various forms of adult learning in Ukraine.

Online platforms such as Prometheus[20] and EdEra[21] offer more than 120 free online courses[22].

The growth of the audience of online platforms in Ukraine indicates that adults are eager to develop and learn. It suggests that online education will become increasingly popular.

[20] https://prometheus.org.ua/
[21] www.ed-era.com/
[22] https://life.pravda.com.ua/society/2019/08/5/237759/