DIGITAL SKILLS AND ONLINE LEARNING IN SERBIA

DIGITAL SKILLS FOR VET STUDENTS

Vision and policy

The Strategy for Education Development in Serbia 2020 highlights the role of ICT for raising the quality of teaching and learning at all levels of education. Although Article 2 of the Law on Secondary Education\(^1\), targets cross-curricular competences, it does not include digital skills. These are mainly promoted through the reform of curricula. The recent introduction of ICT and computing\(^2\) as a self-standing subject for all first grade students in Serbian vocational schools is the basis for developing digital skills as a key competence, with 74 classes a year.

Although there is a recognition of the importance of digital skills, this is not supported by a systematic and standard monitoring mechanism to measure progress against relevant national strategies and policies. The Institute for Education Quality and Evaluation (EQE) is currently developing instruments to evaluate key competences, including digital skills. In the meantime, periodic studies by the Ministry of Education seeks to compensate for current shortcomings.

Research findings indicate that schools understand the importance of ICT readiness and interactive teaching methods as part of the overall quality of education in VET schools.

Use of internet by individuals in last 12 months

\[\begin{array}{cccccc}
67\% & 42\% & 71\% & 46\% & 73\% & 52\% & 77\% \\
79\% & 47\% & 75\% & 59\% & 80\% & \\
\end{array}\]

Source: Eurostat and SROS

Facts

- 96% of VET schools have internet access, yet only 47% have access to Wi-Fi in the classroom\(^3\).
- Computers are very old and maintenance is poor: only 20% of computers are three years old or less, while 40% of computers are eight years old or more and 40% are between three and eight years old\(^4\).
- On average there is one computer for every 8.8 VET students (below OECD average)\(^5\).
- In only 12% of cases do VET teachers use ICT in classes where it is not compulsory\(^6\).
- The majority of schools do not have internet safety or BYOD (Bring Your Own Device) policies\(^7\).

Modernising the VET system

As part of a project on modernising the vocational education system in Serbia managed by the Ministry of Education with EU support, 98 VET schools were furnished with EUR 2 million worth of ICT equipment, consisting of 2,000 computers and accessories. Some 22 pilot schools were also installed with specialised equipment worth about EUR 1 million for delivering experimental curricula. www.vetserbia.edu.rs/aboutus.htm

Branko Radicevic school

Branko Radicevic Gymnasium and Economics School in Kovin offers quality teaching, achieving high improvement in reading literacy for two years in a row. A key factor in achieving this has been the use of digital and online learning methods in regular teaching and learning, as well as training for teachers on the educational use of ICT at home. www.gimeko.edu.rs/?cat=8

\(^1\) Official Gazette, No 55/2013
\(^3\) MESTD internal data on population of VET and CVET schools

Source: Eurostat and SROS
DIGITAL SKILLS FOR VET TEACHERS AND TRAINERS

Vision and policy

Initial vocational education and training (VET) teacher education does not include digital skills and competences as a mandatory subject. VET teachers and trainers mainly acquire digital skills through continuing professional development, which offers a growing number of digital skills courses. The official continuing professional development catalogue 2016–18 includes 158 seminars on media literacy and ICT skills. However, professional development continues to focus mainly on basic digital skills and is largely organised as in-service training only.

The development of digital skills for VET teachers and trainers is not supported by a systematic and standard monitoring mechanism to measure progress against relevant strategies and policies. To improve the situation, the Ministry of Education has launched the following initiatives in 2017.

- Pilot of SELFIE®, self-assessment tool for schools’ progress towards digital age learning based on the European framework for digital competent educational organisations®. In collaboration with the European Commission’s Joint Research Centre7 and the European Training Foundation (ETF)®, the framework intends to help schools reflect on their progress towards comprehensive integration and effective deployment of digital and online learning. It includes a module with specific indicators for VET schools.

- Publication of the report Digital Competence Framework – Teacher for a Digital Age®. Supported by the European Commission and the British Council, the framework intends to help teachers in the process of self-assessing and developing their own digital skills and digital learning practices, as well as to identify the next steps for their professional development. For trainers, this document can help improve the quality and relevance of professional programmes, while decision-makers can use it to assess and revise existing regulation and design specific policy measures.

Facts

- About 56% of VET teachers report that they require (at a high or moderate level) professional development in ICT-related fields.

- About 34% of teachers participated in training on new technologies, including ICT, in the past 12 months, 86% of whom reported a positive impact (strong or moderate) on their teaching practice.

- 57% of VET teachers report a financial barrier to their participation in continuing professional development.

Serbian Moodle Network

The Serbian Moodle Network (in Serbian Mudl Mreža Srbije – MMS) is a non-governmental, non-profit organisation, established to create a collaborative network of digitally competent teachers. The objective is to enhance the quality of DOL for education and training in Serbia by (i) promoting, supporting and improving the use of DOL in education; and (ii) implementing education development programmes in the online environment. The MMS core network of teachers was involved in the implementation of the online training of a large number of teachers (approx. 6,300) within the framework of IPA project ‘Support Human Capital Development and Research – General Education and Human Capital Development’ (2014–15). http://mms.edu.rs

SHARE

Share, a project of UNICEF Institute for Evaluation of Quality of Education and Centre for Education Policy, started with the creation of an online platform for training trainers and external associates to improve the quality of education in primary and secondary schools, including VET schools. It is a good example of how ICT resources can be used in networking and training trainers, and raising the overall quality of education.

---

7 https://ec.europa.eu/jrc/en/about/jrc-site/seville
8 www.etf.europa.eu
10 ETF study on CPD in VET in Serbia: www.etf.europa.eu/web.nsf/pages/CPD_Serbia
DIGITAL AND ONLINE LEARNING IN INITIAL VET

**Vision and policy**

Good use of digital and online learning can enhance the learning process, boost attainment of concepts, and strengthen the capacities of students to improve their digital skills in line with the demands of the information society.

Research by the Ministry of Education indicates that ICT infrastructure and support in VET schools is weak. However, the main obstacles to digital and online learning in VET in Serbia are the fact that it is not compulsory in curricula and VET teachers and trainers lack digital skills. The findings of a research paper comparing success in digital and online learning in vocational schools in Serbia\(^{11}\) points to informal learning among VET teachers and trainers as critical to a more positive attitude towards this technology. The ETF initiative to support the development of virtual networks is therefore timely and pertinent.

Important steps have been taken towards recognising digital and online learning as a relevant educational option. Recent initiatives to support digital skills and digital learning referred to above and the first Soft Policy Paper on ICT adopted by the National Education Council as early as 2013 provide a concrete policy base and tools for advancing the integration of digital learning in VET in the country. This positive trend is also acknowledged by the ETF’s study on digital and online learning in VET in Serbia\(^{12}\), highlighting good practices in Serbia complementing the PISA 2015 results\(^{13}\), which shows that 47% of students use computers in schools and 90% have internet access at home.

**Average number of students per computer connected to the internet in secondary schools (PISA, 2012)**

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Serbia</th>
<th>OECD Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural schools</td>
<td>3.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Schools located in small towns</td>
<td>4.5</td>
<td>6.6</td>
</tr>
<tr>
<td>Urban schools</td>
<td>5.1</td>
<td>16.5</td>
</tr>
</tbody>
</table>

**Creative School**

The Institute for Improvement of Education, in cooperation with Microsoft, has developed a digital repository of the good teaching practices for the primary and secondary schools, including VET schools, named Creative School.

This repository offers learning objects (digital learning materials), as well as tests, tasks for practical work and group work, for both general and some vocational subjects. In the PowerPoint presentations, teachers have embedded links to more learning objects to help students achieve the learning outcomes set out in curricula (e.g. multimedia, photos, movies).

The programme started in 2004, with 25,000 teachers registered, offering a catalogue of over 1,000 selected award-winning examples of classes. This project came to an end in 2014 and the Ministry of Education is working to migrate the database and make it again available for teachers on a new platform.

---

11 Jovanović, V. (2015), What are the differences between one successful and unsuccessful vocational school in Serbia, Secondary Analysis of the Research Findings in the Light of the New Policy in Education, MESTD
14 www.oecd.org/pisa
15 MESTD internal data
DIGITAL AND ONLINE LEARNING IN CONTINUING VET

Vision and policy

The Centre for the Adult Education of the Institute for the Improvement of Education establishes continuing VET qualification levels and types that can be certified and lays down standards for assessing the programme and the criteria to be applied by assessment committees.

So far, digital skills are recognised as a specific competence only for VET profiles directly concerned with ICT. However, digital skills are being seen increasingly as a key competence. A recent review of the final examination of 59 VET profiles now includes references to the assessment and evaluation of digital skills. Another encouraging sign is that digital skills were one of four priorities for adult education in 2015. This has generally been the case in recent years.

Many VET schools offer specialised programmes meeting the needs of local businesses. The companies generally contact the school with a proposal, and the VET schools design and deliver the training. For example, in Kragujevac, home of the FCA motor vehicle plant, continuing VET work in this way. Another good example comes for the PTT Technical School in Belgrade, which provides training and testing for the European Computer Driving Licence (ECDL).

The ICT cluster in central Serbia is an association of ICT companies which, in cooperation with the local authorities and relevant national ministries, provides digital skills training to raise the employability of citizens. The Vojvodina ICT cluster is also known for its many creative projects to improve the digital skills of the local population, especially young people, but also those already in employment.

The use of digital and online methods in continuing VET is limited, often aimed at delivering digital skills to use equipment with a digital interface or use or develop software for mechanical engineering and mechatronics.

Digital and online learning in continuing VET remains underdeveloped, with the vast majority of continuing VET courses delivered through traditional methods.

The European Computer Driving Licence

Some private and public VET schools, for example the PTT school in Belgrade, provide courses including digital and online modules, to obtain the European Computer Driving Licence. Students learn to work with MS Office, use the internet, databases and online services for citizens.

Adult Education Society

This is a no profit organisation for the improvement and promotion of adult education and training. It organises the annual adult learning festival, in which access, quality and provision of training for adults, including continuing VET, are explored through digital and online options. www.aes.rs/en/

Cisco Entrepreneur Institute®

The objective of the Cisco entrepreneur Institute is to help foster the creation and success of small and medium-sized businesses. Cisco provides the institute with an online course-management system and a choice of three levels of business curricula: Starting a business, Growing a business, and the iExecutive Education Programme (iExec).