



DIGITAL FACTSHEET OCTOBER 2017

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 Education¹ 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 computing² as a self-standing subject for all first grade students in 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 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 vocational schools.

Use of internet by individuals in last 12 months



Source: Eurostat and Statistical Office of the Republic of Serbia

Facts

- 95% of vocational schools have internet access, yet only 47% have access to Wi-Fi in the classroom³.
- 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 old³.
- On average there is one computer for every 8.8 VET students (below OECD average)⁴.
- In only 12% of cases do VET teachers use ICT in classes where it is not compulsory³.
- The majority of schools do not have internet safety or BYOD (Bring Your Own Device) policies³.

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 vocational 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

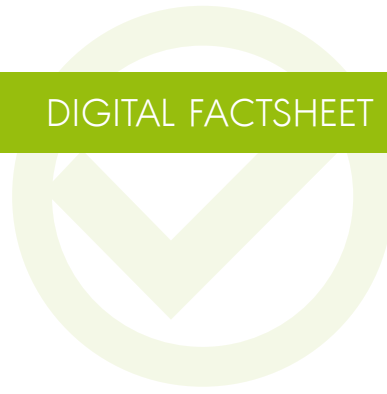
Branko Radicevic Gymnasium and Economics School in Kovin offers quality teaching, achieving high improvement in reading literacy for two years in a row. A key factor in achieving this has been the use of digital and online learning methods in regular teaching and learning, as well as training for teachers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

¹ Official Gazette, No 55/2013

² www.mpn.gov.rs/wp-content/uploads/2016/06/RI-strucne-skole.pdf

³ Ministry of Education's internal data on population of VET and continuing VET schools

⁴ www.oecd.org/publications/students-computers-and-learning-9789264239555-en.htm



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 SELFIE⁵, self-assessment tool for schools' progress towards digital age learning based on the European framework for digital competent educational organisations⁶. In collaboration with the European Commission's Joint Research Centre⁷ and the European Training Foundation (ETF)⁸, 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 vocational schools.
- Publication of the report *Digital Competence Framework – Teacher for a Digital Age*⁹. 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.

Facts¹⁰

- 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 Mudri 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 digital and online learning for education and training in Serbia by (i) promoting, supporting and improving its use 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 the IPA project 'Support Human Capital Development and Research – General Education and Human Capital Development' (2014–15). <http://mms.edu.rs>

SHARE

Share, a joint project of UNICEF, the Institute for Education Quality and Evaluation, and the 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 vocational 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.

⁵ <https://ec.europa.eu/jrc/en/digcomporg/selfie-tool>

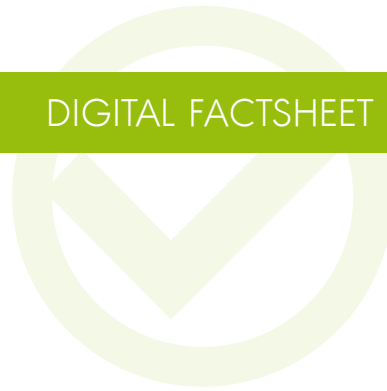
⁶ <https://ec.europa.eu/jrc/en/digcomporg>

⁷ <https://ec.europa.eu/jrc/en/about/jrc-site/seville>

⁸ www.etf.europa.eu

⁹ <http://sociojalnoukljucivanje.gov.rs/en/digital-competence-framework-published-teacher-for-a-digital-age/>

¹⁰ ETF paper on continuing professional development for vocational teachers and trainers in Serbia: www.etf.europa.eu/web.nsf/pages/CPD_Serbia



DIGITAL AND ONLINE LEARNING IN INITIAL VET

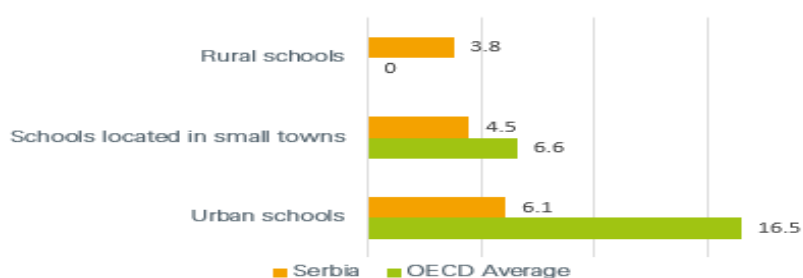
Vision and policy

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 vocational schools is weak in Serbia. However, the main obstacles to digital and online learning in VET are the fact that it is not compulsory in curricula and that VET teachers and trainers lack digital skills. The findings of a research paper comparing success in digital and online learning in vocational schools in the country¹¹ points to informal learning among VET teachers and trainers as critical to a more positive attitude towards this technology. The ETF's 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 paper on digital and online learning in VET in Serbia¹², highlighting good practices complementing the PISA 2015 results¹³, 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)



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, Ministry of Education www.dios.edu.rs/wp-content/uploads/2015/07/sekundarne-analize.pdf

¹² www.etf.europa.eu/web.nsf/pages/DOL_in_VET_Serbia

¹³ www.oecd.org/pisa

¹⁴ Ministry of Education's internal data

Facts¹⁴

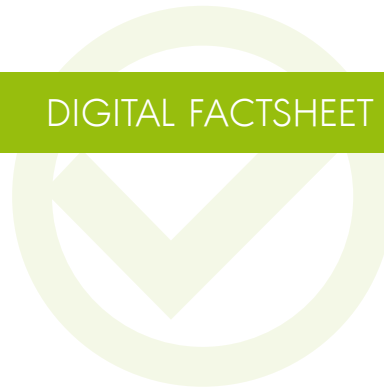
- Two thirds of the vocational schools with internet connections have an internet speed that varies from 2 Mbps up to 16 Mbps.
- More than 15% of the schools do not maintain and update their computers at all; in most cases, the ICT teacher or one of the other teachers is in charge of maintenance (in 41% of schools).
- Only 5% of the schools have developed or used some kind of learning management system (LMS), 8% use digital notebook with students' data and grades.

Creative School

The Institute for the Improvement of Education, in cooperation with Microsoft, has developed a digital repository of the good teaching practices for the primary and secondary schools, including vocational 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 and a catalogue of over 1,000 selected award-winning examples of classes. It came to an end in 2014 and the Ministry of Education is working to migrate the database and make it available to teachers again on a new platform.



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 in four priorities for adult education in 2015. This has generally been the case in recent years.

Many vocational schools offer specialised programmes meeting the needs of local businesses. The companies generally contact schools with a proposal, and the vocational schools design and deliver the training. For example, in Kragujevac, home of the FCA motor vehicle plant, continuing VET works 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.

The ICT cluster in central Serbia is an association of ICT companies which, in cooperation with the local authorities and relevant national ministries, provide 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 vocational 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 non-profit organisation for the improvement and promotion of adult education and training. It organises the annual adult learning festival, during 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 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).

<https://newsroom.cisco.com/press-release-content?type=webcontent&articleId=4848985>