Digital Transformation challenges and opportunities for Vocational Education and Training (VET)
An agency of the European Union
KEY FACTS

- Based in Torino, founded in 1994
- An EU external action tool
- It responds to EU Commissioner Marianne Thyssen, Commissioner for Employment, Social Affairs, Skills and Labour Mobility
- It employs 130 people
WHAT WE DEVELOP

SKILLS AND VET GOVERNANCE

VET PROVISION AND QUALITY ASSURANCE

QUALIFICATIONS AND QUALIFICATION SYSTEMS

ENTREPRENEURIAL LEARNING AND ENTERPRISE SKILLS

EMPLOYMENT, SKILLS AND EMPLOYABILITY

POLICY ANALYSIS
HOW WE DO IT

- Country Specific Capacity Building
- Regional Networks and Peer Learning
- Regional and Thematic Analyses
- Support to the EU Delegations
- Policy Learning
WITH WHOM WE WORK

Ministries of Education, Labour, Economy
Specialised agencies and professional institutions
Employment services
Social partners
4th Industrial Revolution

Smart Systems
Increasing convergence of physical, digital and biological technology

Faster innovation cycles
Example: product -> smart product -> smart system

Telephone: 75 years, 50m users
Mobiles: 20 years, 2bn users
Faster innovation cycles
More households in developing countries own a mobile phone than have access to electricity

What are the implications on jobs?
Jobs transformation, creation but also substitution

Job losses is the real source of concern
The European Skills and Jobs (ESJ) survey

Launched in 2014, Cedefop’s survey involved 49 000 adult employees (aged 24 to 65) across all 28 Member States. It examined **skill needs** and **mismatch** in relation to the changing **complexity of the tasks** and **technological change** in the workplace over 5 years.
Adults employees with technological change in workplace in the past five years by sector, EU-28

Across EU-28
47% have seen changes in working methods or tasks
43% of jobs economies may be automated

However, the amount of work is not fixed. Greater use of technology has created many new jobs.

Source: European skills and jobs survey (ESJ), Cedefop
What are the needs for digital skills in EU workplaces?
High need for digital skills overall

70% adult employees need some basic+ digital skills

As a result, 30% are at risk of digital divide

Level of digital (ICT) Skills needed to do the job for adult employees a share of EU workers are still in an analogue world

Source: the European Skills and Jobs (EJS) survey – Cedefop
What skills are still necessary?
Evidence shows that to keep up with digital developments, simply improving digital skills and competence is not enough.

Complementarity between digital and non-digital skills needed for work, adult employees, EU-28 (estimated)

Source: the European Skills and Jobs (EJS) survey – Cedefop
The European Skills and Jobs survey provides evidence that jobs to keep up with the digital transformation will increasingly need digital skills (and not only)
What is the role of VET?
VET aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market in a lifelong learning perspective.
VET systems need to be flexible and efficient in responding to the digital transformation and emergence of new skills.
VET System

Initial VET
Formal VET programmes

Basic VET
EQF level 1-3

Upper-secondary VET
EQF level 4

Post-secondary VET
EQF level 5-8

Continuing VET
non-Formal VET programmes

Different levels, regulation and certification

e.g. in company training organised by public and private providers, sectoral and trade organisations or commercial vendors

School-based

Work-based
VET Curricula

Basic digital skills
- General Subjects at School

Job-specific digital skills
- Vocational Theory at School
- Vocational Practice at schools (workshops) or in-company (workplace)

interplay of theoretical and practical learning
Provision of VET has changed substantially since the early 1990s.

Dual regulated model (e.g. in DE)
Formal – Informal – non-Formal Learning

Validation of non-formal and informal learning (VNFIL)

“Many of the skills Europe needs will be learned at work. Digital skills are among those most likely being developed on the workplace”
What the EU is doing to support the development of digital skills and support the digital readiness of educational organisations (e.g. VET schools)?
Role of the European Union in Education - The Lisbon Treaty - Article 165

The Union shall contribute to the development of quality education by encouraging cooperation between Member States and, if necessary, by supporting and supplementing their action, while fully respecting the responsibility of the Member States for the content of teaching and the organisation of education systems and their cultural and linguistic diversity.
EU Digital Education Action Plan

3 Priorities - 11 Key Actions 2018-20

January 2018
EU Digital education action plan

Priority 1
Making better use of digital technology for teaching and learning

Priority 2
Developing relevant digital competences and skills for the digital transformation

Priority 3
Improving education through better data analysis and foresight

3 Priorities - 11 Key Actions 2018 – 2020
Open and innovative education and training, fully embracing the digital era
Priority 1
Making better use of digital technology for teaching and learning
DigCompOrg
74 Descriptors grouped in 7 areas

The Digital Competence Framework for Educational Organisations (DigCompOrg)

**Aim:** to help schools assess their use of digital technologies for teaching and learning

**How:** online questionnaire self-evaluation, reflection, anonymous free and paperless

**Who:** school leaders, teachers and students

DigCompOrg - Self-assessment online tool “SELFIE”
Three questionnaires (for School leaders, Teachers, & Students)

Launch in September 2018 – all EU languages

YouTube: https://www.youtube.com/watch?v=n_Ma0-2f_1w&index=2&list=PLGI5zHT2w7jB2i_VBAxpoQdT85DSuYve

Leadership & Governance

Descriptors

• 1.1 The school has a digital plan
• 1.2 Progress are reviewed
• 1.3 Pros and cons are openly discussed
• 1.4 Teachers choose the technologies they need
• 1.5 digital technologies are used to make learning more effective
Self-assessment tool piloted in EU in 2017

- 650 schools
- >67,000 users in 14 Countries

- 237 Primary – 37%
- 189 Lower Secondary – 29%
- 151 Upper Secondary – 23%
- 73 Upper Secondary Vocational – 11%

- School Leaders: 2,979
- Teachers: 11,773
- Students: 52,962
Schools’ Digital Readiness Review Process
participative and bottom-up approach
Despite their pervasiveness in everyday life, the benefits of technology are not always felt in education and training.
Priority 2
Developing relevant digital competences and skills for the digital transformation
Digital Competence for Educators
The Digital Competence Framework for Educators (DigCompEdu) self-assessment tool for teachers and trainers

To consider and respond to learners’ (digital) expectations, abilities, uses and misconceptions, as well as contextual, physical or cognitive constraints to their use of digital technologies.

Address learners’ **diverse learning needs**, by allowing learners to advance at different levels and speeds, and to follow individual learning pathways and objectives.

To use digital technologies within pedagogic strategies that foster **learners’ soft skills**, deep thinking and creative expression. To open up learning to new, real-world contexts, which involve learners themselves in hands-on activities, scientific investigation or complex problem solving, or in other ways increase learners’ active involvement in complex subject matters.

**Example: the competence area empowering learners**

DigCompEdu - Progression Model
Progression model based on Common European Framework of Reference for Languages (CEFR)
Priority 3
Improving education systems through better **data analysis** and **foresight**
Main sources of benchmarking at global level
- EC’s surveys including the 2013 ICT in Education survey and the annual survey on ICT usage by households and individuals,
- OECD’s Programme for International Student Assessment (PISA) and Survey of Adult Skills (PIAAC) studies.

**Erasmus+ Key Action 3**: grants for education policy experimentation, surveys etc.
https://eacea.ec.europa.eu/erasmus-plus/actions/key-action-3-support-for-policy-reform_en

**Digital Skills and Digital Learning**
There is a need for more understanding (research) and evidence (data gathering and analysis)
What the ETF is doing for digital skills and digital learning in VET in our partner countries
To different extent, the digital transformation is taking place in ETF partner countries.
Digital skills and digital learning our priorities

ETF Partner Countries

Policy Dialogue
The Case of the Western Balkans (WB)
Attractiveness and access to VET - 2016

Share of VET enrolment in upper secondary education (%), last available year

<table>
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<tr>
<th>Country</th>
<th>Year</th>
<th>Share</th>
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<tr>
<td>AL</td>
<td>2015</td>
<td>19.5</td>
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<tr>
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<tr>
<td>XK*</td>
<td>2016</td>
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Sources: UNESCO, Eurostat, National Statistical Offices. * Only public schools
Digital Agenda for the WB (EU regional initiative)

As part of the **Western Balkans Platform, the EU's initiative for cooperation in education and training** with Albania, Bosnia & Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo, Montenegro and Serbia.

**Aim:** support **digital transformation of economies** in the region and its integration within the **European Digital Single Market**

**ETF:** Input to the terms of reference for digital skills in VET
Digital Skills and Digital Learning in VET in Candidate Countries

Factsheet
- Macedonia (FYROM)

- Montenegro

- Serbia
Digital Skills and Learning in VET in Serbia

Evidence-based policy and practice analysis

- Case study on digital and online learning in VET in Serbia

- ICT sector skills needs analysis in Vojvodina (Serbia)
  http://www.etf.europa.eu/web.nsf/pages/ICT_skills_needs_analysis_Serbia
Digital transformation
Challenges and Opportunities for VET
Digital transformation will accelerate
VET is key to sustain economy growth, competitiveness, innovation and for social inclusion

“Everyone has the right to quality and inclusive education”
Skills forecast 2025
EUROPEAN UNION - 28 EU Member States
Digital Transformation

VET Challenge #1 - digital divide & polarization

30% of employees in EU need only basic/no digital skills and they are at risk of unemployment, poverty and social exclusion

Source: Cedefop
Digital Transformation
VET Challenge #2 – *(digital) skills gap & mismatch*

53% of employees need to up-skill and re-skill due to the increasing complexity and variety of their tasks or technology advance.

**Gender issue:** less than 20% of ICT professional in EU-28 are women.

Source: Cedefop
More supportive Continuing VET needed

Source: European skills and jobs survey (ESJ), Cedefop
Digital Transformation

VET Opportunity #1 – Improving Access to Skills

Especially for continuing VET, digital learning widens access to relevant and quality skills development solutions, for example through MOOC (including EQF 5+)

Source: Cedefop
Higher Technical Institutes (EQF 5+)

Germany: 880000 students
France: 360 students
Italy: 93 ITS, 390 courses, 8232 students
(1000000 students by 2020 – Manifesto Industria 4.0)

Source: J.P. Morgan, Nov 2017
Digital Transformation

VET Opportunity #2 – Innovative Pedagogy
thus making VET more attractive and more efficient (internally and externally)

Digital technologies offer new ways for teaching and learning (e.g. simulation tools) and a better connection between school-based and work-based learning (better learning outcomes)