



Kommissionsdrucksache 19(28)49-EN

24. Mai 2019

**Konstantinos Pouliakas,
European Centre for the Development of Vocational
Training (cedefop)**

Stellungnahme

Öffentliche Anhörung

zum Thema

**„Berufliche Aus- und Weiterbildung im internationalen
Vergleich (2. Sitzung): Vergleich zu digitalisierten Regionen,
Lernen von den Besten“**

am 3. Juni 2019

**STUDY COMMISSION ON VOCATIONAL TRAINING
IN THE DIGITAL WORK ENVIRONMENT****DEUTCHER BUNDESTAG**

“Vocational training and continuing training: an international comparison – comparison with digitally advanced regions, learning from the best”

RECOMMENDATIONS FOR ACTION FOR POLICYMAKERS

Konstantinos Pouliakas, Expert, Cedefop

Although the proliferation of digitalisation in EU countries is elevating skill needs and productivity, offering opportunities for new and better learning methods that can foster social inclusion, improving education delivery and overall job quality, new technological advances associated with the Industry 4.0 era (artificial intelligence, 3D printing, cloud computing, big data analytics, internet of things, robotics, nano- and biotechnology) have raised concerns about their potential to foster widespread job displacement. As revealed by the analysis of Pouliakas (2018) using Cedefop’s *European skills and jobs survey* (ESJS) data, about 14% of EU jobs face a very high risk of automation, but 35-40% are also likely to see their job tasks and skill needs transformed in the medium-term. In addition to job losses, digitalisation also breeds skills obsolescence. As revealed by the ESJS data, 16% of EU adult workers consider it very likely that their skills will become outdated in the near future as changing technologies affect their work.

In the face of such rapid technological advances, changing skill needs require significant upskilling and reskilling efforts among both the young and adult population. But the skills set required so that learners can operate effectively in the digital economy supersedes the simple acquisition of digital competences, or being trained for ICT posts. Curricula and vocational education and training (VET) programmes that can actively prepare young and adult learners for the future of work must be characterised by a blend of data/technological and human literacy. As also revealed by Cedefop’s ongoing *CrowdLearn study* – a study of the skills needed and developed among digital (crowd) workers, a mix of soft and entrepreneurial/business skills (e.g. organisational etiquette, boundary management, self-branding, self-efficacy/evaluation, risk tolerance) are increasingly required, in addition to technical digital skills (e.g. coding, search engine optimisation, data mining etc.) in the online job market, – skills which are often at the fringes of traditional VET systems.

What the above trends highlight is a need for both initial and continuing VET systems to integrate these changes into more flexible and adaptive VET infrastructure, programmes and curricula, rendering them ‘robot- or future-proof’. While much emphasis has been given in recent years to making VET more inclusive, focusing on work-based learning and integrating key competences in study programmes, including digital competences, less attention has been paid to promoting VET excellence, through creativity, innovation and entrepreneurship – key features associated with i.4.0 technologies.

While no one system of VET is perfect, and all face challenges in keeping up with the fast-paced advances in the digital economy, digitally advanced regions appear to be characterised by a number of common features and priorities:

- ❑ A dedicated **national policy strategy** (and action plans) for meeting the challenges of digitalisation and Industry 4.0 that includes and envisages VET reform and initiatives as part and parcel of such a strategy.
- ❑ **Alignment of training programmes with labour market and skill needs**, the latter increasingly identified via the use of big data and AI analytics.
- ❑ A focus on **digital (lifelong) learning**, involving
 - adequate access of learners to digital infrastructure (personal devices, interoperable information systems, open data) and innovative and interdisciplinary learning materials (open educational resources);
 - integration of key competences in curricula
 - validation of informal digital skills (digital credentials)
 - digital competence assessment modules
- ❑ **Digitally competent (and motivated) teachers and school leadership**

Overall, on the basis of experience observed in digitally advanced regions, policymakers should aspire to implement policies that facilitate the following goals for reforming their VET systems:

- 1) Promote **interdisciplinary learning** with an aim to enable students prepare for cross-industry 'hybrid' skill needs and job profiles e.g. combination of mathematics and science with arts and multimedia design courses
- 2) Integrate the principle of **data and technological literacy** as key competences in curricula
- 3) Promote the acquisition of **human literacy** and of cognitive abilities (creativity, problem-solving/critical thinking, entrepreneurship, collaboration and communication) in curricula
- 4) Promote the further use of **experiential learning** (e.g. via apprenticeships) that is focused on project-based learning and learning from business start-ups/venture capital models
- 5) Ensure the frequent and systematic updating of educational curricula in alignment with **real-time and robust labour market intelligence**
- 6) Embed digital technologies (simulators, AI virtual assistants) into teaching, learning and student assessment, overall ensuring **schools' "digital readiness"** (e.g. via the use of the EU's [SELFIE](#) tool)