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THE KEY ROLE OF VOCATIONAL EDUCATION AND TRAINING SYSTEMS IN THE DIGITAL TRANSITION. RECOVERY AND RESILIENCE OF VET POST COVID-19.

ABSTRACT: *The COVID-19 outbreak has brought to the fore in Europe the difficulties and challenges of Education and Training (VET) systems and made possible a marked acceleration in the adoption of innovation measures in all sectors to overcome the digital divide. This is even more evident in Italy, which for a decade has been ranked at the bottom for digital innovation and use of new technologies, as well as for the digital skills of citizens. Amidst so many critical issues, it seems that the challenge of digital transformation has been taken up and will play a key role in post-emergency management as well, building on the new interactive modalities tested during the Covid-19 pandemic. These modalities will have to be implemented, giving them an organic character that will make them usable also after the crisis. The 2020 Coronavirus emergency in Italy did not in fact catch society, the public administration, the business world, the school and, the training world completely unprepared, as they demonstrated an extraordinary capacity to adapt by making massive and sudden use of distance learning and remote working. The reactivity of the training system, which has opened up to innovation and the use of networked services and platforms, has also made it possible to relaunch and implement the lifelong learning paradigm through various methods, including customisable ones, which were already the ones that best expressed demand. Innovation and digitalisation in VET play a key role in the broader green and digital transitions, as well as in the recovery and resilience of a post-COVID-19 Europe, confirming the results of studies carried out by the European Commission in recent years, which have been the starting point for a whole series of initiatives in this sense. Through an analysis of European policies for recovery and resilience, a reflection is proposed on the response of training systems to the challenges posed by the COVID-19 emergency and on the future of training systems. In particular, critical issues related to infrastructures, practical aspects of training, lack of e-skills and, digital devices will be identified and analysed. After this large-scale forced experimentation, distance learning carried out in synchronous mode could move from an extraordinary and limited use to ordinary and structured use for the provision of training, in particular continuous training, enriched with new technologies that would also make it possible to overcome the criticalities currently encountered. The main forms of distance learning and the trends for the near future, as identified by the European Commission in the new "Digital Education Action Plan 2021-2027 Rethinking Education and Training for the Digital Age", point to a new era for training. Education thus becomes the driving force for Europe's digital transformation that can no longer be postponed, fully based on the UN Charter and respect for the Universal Declaration of Human Rights, and open to a broader coalition of international partners sharing the same European vision to develop the rules of a human-centric digital transformation.*

KEYWORDS: *VET, Innovation, Digitalisation, Recovery, Training, Learning, Digital.*

Introduction

The COVID-19 pandemic has given an unmistakable signal of confirmation and evolution of the role and perception of digitisation in education and training systems in Europe.

Innovation and digitisation in vocational education and training (VET) play a key role in the broader green and digital transitions, as well as in the recovery and resilience of a post-COVID-19 Europe, confirming the results of studies carried out by the European Commission in recent years. Particularly significant has been the *European Commission's ET 2020 working group* which has

been questioning, with meetings and studies since 2018, the role of innovation and digitisation to boost high-quality VET and Higher VET.

The vision of a proactive education system, with smarter policy choices, capable of anticipating innovation and supporting the process of digitalisation, has been leading European policies in the last 10 years. Considering the impact on VET, innovation could trigger a virtuous circle leading to the adoption of more and more advanced technologies and methodologies.

But innovation also needs a new approach to teaching and training through collaborative platforms, new hybrid professional models.

The *coronavirus* emergency has therefore called for disruptive innovation and an acceleration of the policy reform agenda in the area of digitisation, with a series of extraordinary financial instruments combined with cohesion programmes, to overcome vulnerabilities in the availability of technology and infrastructure and low levels of e-skills.

1. Paving the way to the Digital Transition of VET Systems.

The concept of widespread digital deployment, already present in the *2019 European Green Deal* (based on the *Sustainable Development Goals -SDGs of the UN 2030 Agenda*), was reinforced in the subsequent February 2020 *Action Plan for Europe's Digital Future*, giving a strong political impetus to digital transformation, well before the arrival of the pandemic.

The trend towards innovation and digitisation has been confirmed by the new policies put in place by the European Union, which have accelerated their implementation following COVID-19.

The EU Commission's *SURE Initiative*, launched in April 2020 (establishing a European temporary support instrument to mitigate the risks of unemployment in an emergency following the COVID-19 pandemic), also includes a focus on training, including training for laid-off workers as a company and individual investment.

On 26 June 2020, the Council called for accelerating the digital transformation of education and training systems and strengthening the digital capacity of education and training institutions to reduce the digital divide, paying attention to equal access opportunities, ensuring quality and encouraging validation and recognition of learning outcomes. Subsequently, the European Commission launched a new *Digital Education and Training Action Plan*, inviting Member States to build on the experience of the emergency to develop better quality, more accessible and inclusive digital teaching, learning and assessment as a key element of Europe's transition, using the *EU Recovery and Resilience Facility* with national NRRPs.

The Plan foresees two strategic priorities: on the one hand the promotion of a new digital education and training system (infrastructures, connectivity, digital devices, development of digital organisational capacities, improvement of digital competences of staff involved in training and education, high-quality learning content with accessible tools and secure platforms). On the other hand, developing the digital competences and skills needed for digital transformation.

The Council, in November 2020, then called on all Member States to strengthen distance learning and skills upgrading, indicating that VET can be an attractive option if based on modern and digitised training/competence provision. Encourage the development of open, digital and participative learning environments in VET programmes, supported by accessible and efficient advanced technology infrastructure and equipment (including ICT-based simulators and augmented reality) which increase the accessibility and efficiency of training also for SMEs. Vocational education and training for sustainable competitiveness, social fairness and resilience, is the core of the Council Recommendation of 30 November defined key principles for ensuring and agile vocational education and training capable of adapting swiftly to labour market needs, providing quality learning opportunities for young people and adults. The Recommendation focus on increased flexibility of vocational education and training, reinforced opportunities for work-based learning and apprenticeships and improved quality assurance, replacing the *European Quality*

Assurance in Vocational Education and Training Recommendation and including an updated *EQAVET Framework* with quality indicators and descriptors.

The subsequent *Osnabrück Declaration* of 30 November 2020 on vocational education and training as a key to recovery and a just transition to a green and digital economy outlines four objectives to be achieved through measures at a national and EU level: promoting resilience and excellence through quality, inclusive and flexible VET; creating a new culture of lifelong learning that adapts to digitalisation; including sustainability and eco-sustainability in VET; strengthening the international dimension of VET and a European area of education and training.

2. The Digital Decade: a new era for training.

The main forms of eLearning and the trends for the near future as identified by the European Commission in the new *Digital Education Action Plan 2021-2027 Rethinking Education and Training for the Digital Age* hint at a new era for education.

The Plan for the *Digital Decade 2021-2030* adopted on 9 March 2021 by the European Commission effectively integrates the activities already launched by the Commission during 2020, which are reorganised and reformulated into a framework of actions setting specific targets for 2030, as requested by the Council of the EU. The plan's approach reflects the experience of the pandemic, and the impetus it has given to digital deployment and its accelerated field testing and fits into the *Next Generation Eu* perspective.

The Commission organises the logic of the plan with a “Compass” to map Europe's trajectory, called the *Digital Compass 2030: the European model for the digital decade*. Based on four main themes, the four cardinal points of the “Digital Compass” - skills, infrastructure, business and public administration - aims to achieve the goal of Europe's digital transformation. The “Compass” defines a solid common governance structure with the Member States, based on a monitoring system with annual reports using a “traffic light” system.

For skills, the reference remains the *Digital Education Action Plan 2021-2027* and the *European Pillar of Social Rights Action Plan*, which sets the target that at least 80% of people aged 16-74 should have basic digital skills. The Commission also adds the target of having 20 million ICT specialists by 2030 with convergence between men and women. With the adoption of this act, the principle is established that the possession of basic digital competences is a right for all European citizens, and that lifelong adult learning must become a reality. These principles, identified as an integral part of the *EU Digital Principles*, will be enshrined, after a consultation process with the Member States, in an *Inter-institutional Solemn Declaration of the European Parliament, the Council and the Commission*, which will see the light of day by 2021, complementing the principles already affirmed in the *European Pillar of Social Rights*.

Member States' digital transformation performance will also be monitored by the DESI (*Digital Economy and Society Index*). The latest data collected by the European Commission in 2020, in the context of the digitisation of the Member States, see Italy, concerning the DESI, in 25th place among the 28 Member States. The low level of e-skills among the general population, which also indirectly affects the state of digitalisation of online public services, due to the still too low level of use by citizens, stresses the implementation of initial, continuous and lifelong training strategies dedicated to e-skills even more urgent.

The financial instrument of the *Recovery and Resilience Facility*, approved by the European Parliament in February 2021, provides for the elaboration by the States of PNRR, plans of investment and reforms in 7 “flagship areas”. Training is included in the *Reskill and Upskill* flagship, which calls for reskilling and upskilling, with the adaptation of VET systems to support e-skills and vocational education and training for all ages. In a comprehensive vision of developing the VET system as a whole, the *Commission Recommendation on effective active employment*

support (EASE) presented together with this action plan can also facilitate investment and reforms in this area.

Member States will also benefit from *ESF+*, *Erasmus+* and the *European Regional Development Fund (ERDF)* to support training infrastructure and equipment to create inclusive strategies for adult learning and retraining, to design certification and validation systems and to promote continuity of learning and mobility between VET providers. To facilitate access to funding for recovery and resilience, within the broader *Next Generation EU Facility*, a *Technical Support Facility* has also been put in place to assist national authorities in preparing, amending, implementing and reviewing national plans (NRPs), which must include a coherent package of reforms and public investment projects to be implemented by 2026, outlining reforms and investments to address the challenges identified in the context of the European Semester, in particular in the country-specific recommendations adopted by the Council, including the digitisation of administrative structures and public services as one of the key actions.

The implementation of the principles of the social pillar and the challenges identified in the country-specific recommendations adopted in the context of the *European Semester* will provide the basis for Member States to prepare their *ESF+* operational programmes.

3. Challenges and Opportunities for Digitalisation in VET.

In the *Italy 2020 Country Report* of 26 February 2020, the European Commission noted that Italy has made limited progress and that no significant measures have been taken, beyond the recruitment of new teachers (with an extremely limited number of hires of digitally literate teachers). *Recommendation 2* called on Italy to take action in 2019 and 2020 to, inter alia, improve educational outcomes, including through targeted investments, and promote skills upgrading, in particular by strengthening digital competences. *Recommendation 19* underlined that the attainment of basic skills varies considerably across regions and that the rate of early school leavers is well above the EU average (13,5 % compared to 10,3 % in 2019), in particular for students not born in the EU (33 %). Data on lifelong learning also show that companies invest too little in ICT training for their employees. The low participation rate of low-skilled adults in training is also worrying, given the decline in jobs requiring low qualifications. In turn, *No 20* stressed that tertiary education suffers from a lack of funding and staff shortages, that the proportion of graduates remains low, particularly in the scientific and technical fields, and that vocational tertiary education is limited. Concerning the *United Nations Sustainable Development Goals (SDGs)*, the Commission pointed out that the achievement of *Goal 4* - devoted to quality education and divided into 10 targets - requires further efforts in all the areas concerned: basic education, tertiary education and adult learning.

The digital transition of education and training systems is part of the transition from the fourth industrial revolution, which we entered only in 2011, to the fifth, characterised by a business model in which the role of man and his collaboration with machines and artificial intelligence (co-robots or cobots) in production processes (Collaborative Industry) will be redefined, bringing research strategies (research factory) to the fore.

These factors have become predominant for the recovery from the Covid pandemic, which has made evident with its disruptive aspect, the unpreparedness of the work and VET systems, which have succeeded in a massive shift to remote working and learning. with difficulties and problems related to infrastructure, skills and inclusiveness to resist. With millions of workers and learners across the EU affected by the physical closure of workplaces and education institutions and venues, 2020 has been an unprecedented year of challenge and disruption. This has raised significant challenges in terms of quality, equity, connectivity, infrastructure and capacity for rolling out key digital skills on a huge scale.

The COVID-19 crisis has shown how important it is to increase the availability of digital solutions for teaching and learning in Europe and has made weaknesses evident. The switching of scheduled

courses from face-to-face to e-learning has highlighted the bureaucratic obstacles of the system and the more general criticalities of the delays in the country's digitalisation: lack of connectivity (uneven diffusion of ultra-wide bandwidth) and lack of digital skills with negative repercussions on the use of digital devices and services, which in turn are not widely present in society. The *European Commission's DESI 2020 index* (referring to 2019 data) has again recorded very low values for the 'Human Capital' indicator, as well as the *OECD (TALIS 2018)* findings that, despite the use of ICT being included in teacher training, only 36.6% were prepared to use it effectively in teaching at the end of 2019. Moreover, investments in digital infrastructure and tools have not always been adequately accompanied by proper teacher training and have not been homogeneous across European countries.

Concerning the digital competences of young learners, contrary to popular belief, they are not innate. Although it is commonly believed that today's young generations are *digital natives*, the results of the *International Computer and Information Literacy Study (ICILS)* indicate that young people do not simply use digital devices while growing up to develop sophisticated digital skills. Underachievement, in the sense of an inability to understand and perform even the most basic computer tasks, is widespread in the EU. In 2018, as many as 62.7 % of Italian pupils failed to pass the sufficiency threshold. The same applies to 50.6 % of pupils in Luxembourg, 43.5 % in France, 33.5 % in Portugal, 33.2 % in Germany, 27.3 % in Finland and 16.2 % in Denmark.

The difficulties related to *Work-Based Learning* in remote training can be overcome by smartly integrating digitalisation (use of immersive technologies through virtual and augmented reality and artificial intelligence).

Adult learners, especially low-skilled ones, sometimes lack the digital skills needed to benefit from digital learning, which can affect their opportunities to improve their skills levels and retrain.

Adaptation to the crisis has thus been easier for the most advanced Member States in digital education and training thanks to the recent implementation of comprehensive national strategies (e.g. Finland, Denmark and Estonia). This demonstrates the importance of making investments an integral part of comprehensive digital education policies covering everything from digital equipment to skills development, from pedagogical content to an adequate support mechanism.

Concerning lifelong learning, despite some innovative excellences that are being experimented with especially in the field of corporate training (*experiential learning of collaborative methods based on the application of artificial intelligence, augmented reality with immersive virtual reality technologies for simulation learning, the use of big data for training evaluation using data collected from digital learning systems, mobile learning, virtual tutors elearning chatbots*), and partly in the field of initial training (IVET) (mixed models of digital integrated with analogue in presence, such as the *flipped classroom*, with learning based on videos replacing textual or in-presence instructions), the difficulty linked to practical training activities remains, especially for dual learning and in VET.

Carrying out the practical parts of the curricula is particularly challenging in the context of distance learning. This is particularly relevant in VET, where practical learning forms a large part of the curricula.

Another major challenge has been the management of assessments and grades: this is linked to the challenge of efficiently organising the end of the school and academic year, which is particularly important in the context of school-leaving examinations and final diplomas as it has an effect on enrolment in the various levels of education and training.

The crisis has thus triggered an irreversible process of innovation but has also made tangible the inadequacies and inequalities sometimes present in education systems, bringing to the fore not only the need for action on infrastructure and skills but also attention to equity and the inclusion of the most vulnerable groups.

During the suspension of face-to-face training, many measures were taken, at a national and regional level, to ensure the protection of vulnerable groups of learners and their access to distance activities. Access to online learning, as reiterated by the European Commission (EU 2020) must be

guaranteed for all, and can also facilitate (OECD 2020) the acquisition of some of the key competences of the 21st century, such as collaboration, communication, independent research and higher-order cognitive skills, as well as digital skills.

There are also learners with special educational needs who require additional advice and support while learning. Closure of education and training institutions was particularly problematic for socio-economically disadvantaged learners, who are more likely to live in family environments that are not conducive to studying at home, or who are usually entitled to free school meals, as well as for learners at risk of dropping out. The need for greater cooperation between the learners' families on the one hand and teachers and trainers, on the other hand, emerged, as well as the need for stronger efforts to make distance learning possible.

The pandemic has also had considerable consequences for learning mobility opportunities at the European and international level.

Conclusion

The digitisation processes, which the European Commission has increasingly linked in recent years to continuing education and training with new technologies, can have a beneficial effect on VET systems, also amplifying innovation for companies. The training and development of human resources and the organisation of companies are the basis for dealing with digital transformation. The advent of technological innovation and the development of the Internet require the central element of the person to multiply the effects of growth.

Training, therefore, plays a decisive role in the transition to digitalisation, triggering a virtuous circle and multiplying opportunities for growth by combining innovation with transformation. Digital training can be an opportunity to get to grips with digital thinking and, first and foremost, with the necessary corrections and special implications, it can help, if well managed, not to marginalise certain generations.

Training thus becomes the driving force for Europe's digital transformation that can no longer be postponed, based fully on the *UN Charter* and respect for the *Universal Declaration of Human Rights*, and open to a broader coalition of international partners who share the same European vision, aimed at developing the rules of a “human-centred” digital transformation.

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