



JRC CONFERENCE AND WORKSHOP REPORT

Vocational Education and Smart Specialisation Strategies

*Report from the joint JRC –
DG EMPL workshop*

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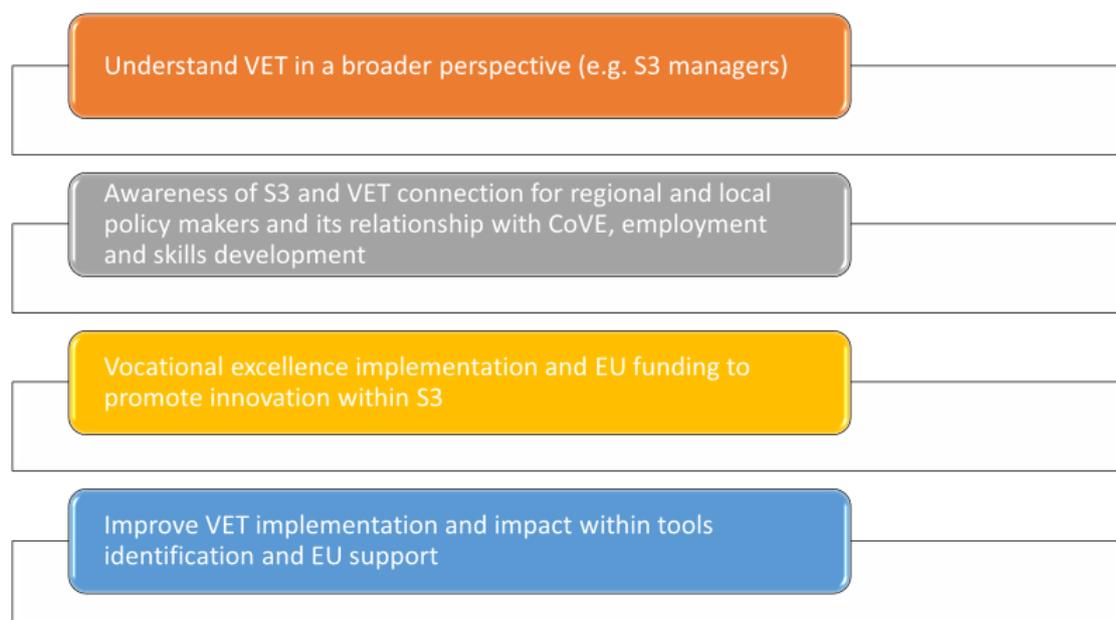
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1 Introduction

Vocational Education and Training (VET) has been recognized as fundamental in providing skills to support innovation and smart specialisation through what is referred to as 'Vocational Excellence'. It provides training that is responsive to business needs, for both initial qualifications of young people as well as for continuing upskilling and re-skilling of adults. Seeking excellence in VET is also the aim of the Erasmus+ Call on Centres of Vocational Excellence (CoVE). Despite the progress achieved, it is necessary to broaden the concept to help modernise this key sector of the educational and training system. CoVEs have a crucial role to play in providing the skills to deliver Smart Specialisation Strategies (S3), while also contributing to a wide range of other policy goals (e.g. Competitiveness, Social Cohesion, transition to the green and digital economy, active ageing, etc.), with targeted support from the EU funding instruments.

The organisation of this workshop reinforced the work already initiated by the Joint Research Centre and the Directorate General for Employment, Social Affairs and Inclusion to explore and strengthen the connections between VET and S3 (See Figure 1 – Workshop goals). It follows the Science for Policy Report (October 2019) on the subject. After the launch of the five CoVE pilot projects in 2019, and in anticipation of the results of the second Erasmus+ Call for Proposals (deadline for project applications by 20 February 2020), it is important to reflect on what can be improved, and propose recommendations on how the policy approach can provide most added value.

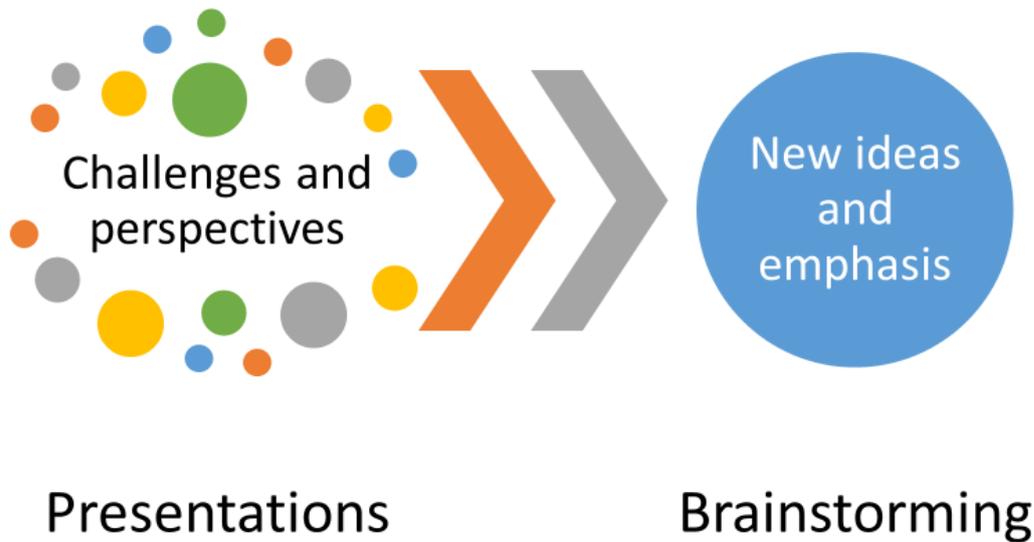
Workshop Goals



The workshop provided a forum for new ideas and issues related to the CoVE, and helps contribute to enhancing the profile of VET and improving its dissemination and communication.

2 Methodology of the Workshop

To achieve the workshop objectives a mixed methodology was chosen in order to promote reflection, discussion and the generation of new ideas, and then present solutions to strengthen the link between VET and S3. Different themes and examples useful for the analysis of the “What” and “How” of VET and S3 were presented.



3 Report of the proceedings



João Santos,
Deputy of Unit,
European
Commission, DG
Employment
Social Affairs
and Inclusion



Fernando Hervás,
Deputy Head of
Unit, Territorial
Development, JRC

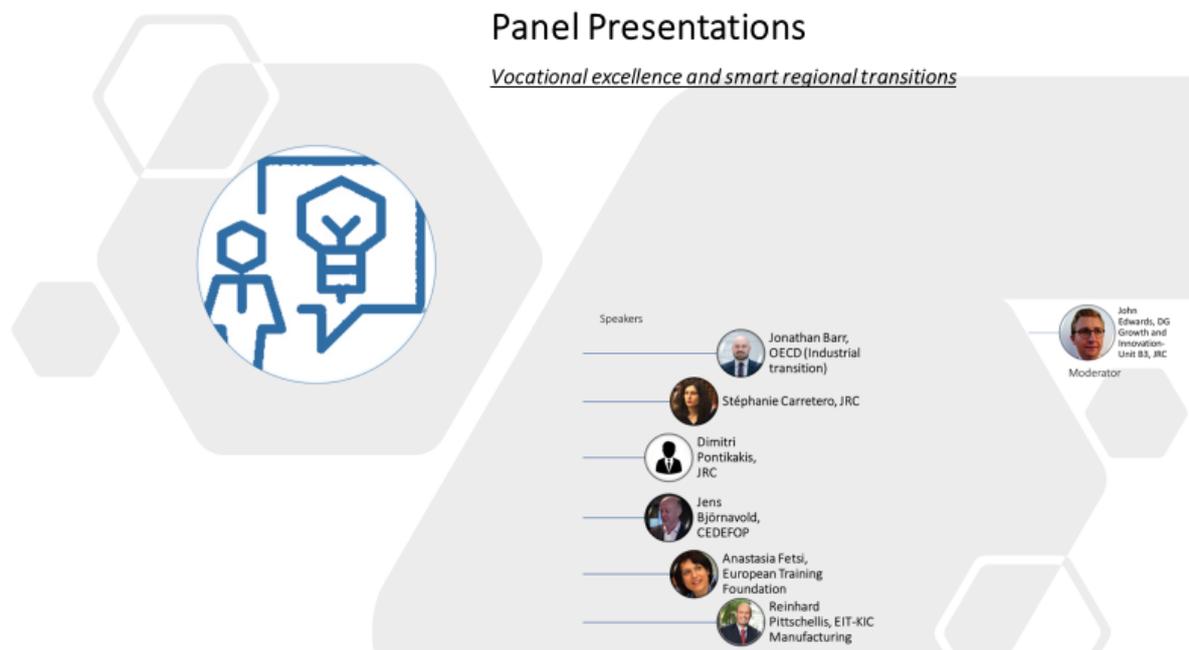
João Santos opened the workshop, emphasising that since 2002, the European Union has promoted the modernisation of Vocational Education and Training system through the Copenhagen process¹, enhancing its contribution to innovation and excellence. Over time calls have grown for VET policies to become more aligned with local and regional development strategies, most recently those for smart specialisation, to better serve their role in providing industry with the skills and competences to grow and to help promote balanced economic development of European regions. In 2018, the European Commission announced the launch of the Platforms of Centres of Vocational Excellence-initiative (Platforms of CoVE) with the main goal to promote the excellence, innovation and attractiveness of VET. The initiative aims to establish transnational collaborative platforms bringing together excellent VET providers (regional centres of excellence) in a specific sector or related to a specific societal challenge (e.g. upskilling, digitalisation, artificial intelligence). In 2018, through the Erasmus+ Programme, the European Commission launched a Call for Proposals to support “Platforms of Centres of Vocational Excellence” under the Erasmus+ KA2 sector skills alliances, after which four pilot projects were approved with a budget of 1 million euros each. A second call for 4-5 pilot projects was launched in October 2019 with a budget of 4 million euros per project. The results of these pilot projects will be used to inform the definitive format of the CoVE in the Erasmus programme for 2021-2027.

These calls and an associated [mapping exercise](#) set out a large and challenging agenda. CoVEs are expected to go beyond what is expected of VET. Vocational excellence in CoVEs means embracing a wide range of activities that are responsive to labour market needs, participating in innovation centres and business start-up activities. The CoVE concept implies that the different partners establish strong and enduring relationships at both local and transnational levels, contributing to wider frameworks of regional development, innovation and/or S3, and being part of “knowledge triangles”, working closely with other education and training sectors, the scientific community, and business.

From the perspective of the Joint Research Centre (JRC), **Fernando Hervás** underlined the importance of skills for industrial transition and innovation in Europe’s regions. The JRC has worked extensively in the fields of education and skills as well as innovation and smart specialisation, but vocational excellence provides an opportunity to bring these two fields together. Skills can and should play a much greater role in the design and implementation of S3. This has to be understood in the context of a broad definition of innovation; one that goes beyond science and technology, and also takes into account the ‘Doing, Using and Interacting’ mode of Innovation. Skills are a crucial factor in all regions, but particularly those which are less developed, and the integration of VET into S3 can help them catch up, increase cohesion and rebalance the European economy.

¹ Declaration of the European Ministers of Vocational Education and Training, and the European Commission, convened in Copenhagen on 29 and 30 November 2002, on enhanced European cooperation in vocational education and training https://www.cedefop.europa.eu/files/copenhagen_declaration_en.pdf

3.1 Panel 1 - Vocational Excellence and Smart Regional Transitions



The panellists represented different institutions who work on themes related to Vocational Excellence and Smart Specialisation. This section attempts to capture their main messages.

Jonathan Barr introduced the goals of the OECD's Centre for Entrepreneurship, SMEs, Regions and Cities', which are to support local and national governments to develop new ventures with SMEs, thus promoting more inclusive and sustainable regions and cities, boosting local job creation, and the implementation of tourism policies. Activities operate within the context of the Triple Helix, promoting the interconnection between government, society and industry. The research work produced in this Centre helps governments to define their policies in order to provide support for industry and to contribute towards a better society where there are jobs and improvements in quality of life. Researchers from this Centre assessed the risk of automation in the different levels of employment throughout Europe and observed that industrial transitions may lead to increased job polarisation. This implies an evident change in skills demand and employment structure. Jobs may not disappear but their role and the way they are performed may change. This represents a challenge for VET as well as an opportunity, as it is possible through vocational education to upscale to higher skilled jobs or help workers improve their careers and remain relevant. The education system has to work with local businesses to overcome the skills mismatches encountered in different regions and analyse how these skills need to evolve.

Policy makers can help support a successful jobs transition, but the challenge with much of the data and information that is available to policy makers is whether skills are being put to good use to focus on the individual worker. The intention is not to tell policy makers much about overall local and regional performance, nor provide information from the employers' perspective. Instead, while more must be done to develop information from the employer perspective, the OECD has developed a typology to understand whether skills are being put to good use within local economies. This analysis assesses the supply of and demand for skills at the local level. Policy makers play an important role in supplying the right skills for new and emerging activities, supporting workers in transition, investing in new sources of growth and employment, and creating adequate coordination and financing mechanisms.

The Joint Research Centre is also developing research and information to characterise the changing nature of work and skills in the digital age. Through this work it contributes to a better understanding of and cooperation with triple helix stakeholders. Presenting JRC research on "The changing nature of work and skills in the digital age," **Stephanie Carretero** explained that it is possible to understand the main challenges that Europe is facing regarding employment, skill and competences, and competitive industry. Data shows that the jobs most affected by automation are the ones that involve routine tasks and require little social interaction. Demand for complex skills sets is expected to rise, requiring problem solving abilities, strong non-cognitive skills (eg.

communication, planning, teamwork), and at least moderate knowledge of Information, Communication and Technology (ICT). Technology will be the key driver for new forms of work.

In 2017, an important share of the EU labour force had low or no digital skills (36%) and around 15% of employers thought that their staff were not proficient in digital technologies. And since the number of adults (25-64) participating in learning remains low (in 2018, only seven EU Member States have reached the Europe 2020 target of 15 % of adults participating in lifelong learning), not only VET for young students but also Life Long Learning programmes are needed to develop upskill and reskill workers to equip them with the required non-cognitive and digital skills..

Other important conclusions of this study are that the employment landscape is evolving differently across the EU, widening the gap between regions, since in addition to technological change many other factors shape the evolution of the employment landscape. The job structure of peripheral European regions remains very different to those in the core and urbanized areas show a much larger share of highly paid jobs.

Dimitrios Pontikakis, also from the JRC, presented other studies showing that innovation has a broader base than technology which is crucial to analyse and promote since it is linked to SMEs' capabilities with an implication on production and selling activities. This type of innovation is particularly important for less developed regions. Broad-based innovation (non-R&D type), that focuses on engineering, design, marketing, management, training and IT (Information technologies) are especially important for firms in services sectors and for those engaging in new-to-the-firm and new-to-the-market innovation. Empirical studies find that non-R&D innovation activities produce spill overs, correlate with the economic value of innovation and are complementary to R&D. Individual examples of extremely successful innovations, whether products or services, tell rich stories of creative combinations of R&D, design, marketing and organisational novelties.

In supporting EU Commission and Members States developing VET policies, CEDEFOP develops research and participates in different projects. **Jens Bjørnavold** announced that in early 2020, CEDEFOP will publish a document that seeks to illustrate the different paths VET should develop in the future regarding the mismatch of competences required for industry to innovate. The main idea of the report is to understand what VET is, more than apprentice training, with other solutions regarding higher education. It analyses the response of VET to the needs of the labour market, forecasting the competences needed, and, more importantly, how not to lose the feedback loop since in many countries it is incomplete and there is a disconnect between the needs of the labour market and VET institutions.

Anastasia Fetsi explained how the European Training Foundation (ETF) is also aware that skills are changing. The work done by the ETF focuses on countries outside Europe that need help developing VET so they may answer the needs of industry. These countries are not front runners of ICT, but they can use it for economic development since they start from a human capital base with knowledge to enhance IT for use in the future. There is the need for a new kind of innovation – for example, agriculture with new IT may give opportunities to develop economically.

As introduced by **Reinhard Pittschellis** from the Knowledge and Innovation Community for Manufacturing, the European Institute for Innovation and Technology (EIT) is an EU body created by the European Union in 2008 to strengthen Europe's ability to innovate through a new approach based on the integration of business, education and research, following the concept of the Knowledge Triangle. The EIT contributes to sustainable European economic growth and global competitiveness by reinforcing the innovation capacity of the Member States and the EU. It does this by what is called Knowledge Triangle Integration (KTI): Promoting synergies and cooperation among, and integrating, higher education, research and business of the highest standards. The EIT believes that through KTI systemic changes will be brought about for the benefit of innovation and entrepreneurship. Examples include developing more entrepreneurial mind-sets among all actors and sustainable intensification of the collaboration between Higher Education Institutes (HEIs), research organisations and the private sector. Both the KTI approach and the Entrepreneurial Discovery Process (EDP) of S3 bring together different innovation actors aiming to design and implement strategies based on a bottom-up approach.

The EIT promotes the creation of Knowledge and Innovation Communities (KIC), in long term dynamic European partnership among leading companies, research labs and higher education institutions that seek to find solutions to specific global challenges. These KICs offer a wide range of innovation and entrepreneurship activities: [education courses](#) that combine technical and entrepreneurial skills, tailored [business creation and acceleration services](#), and [innovation driven research projects](#). This brings new ideas and solutions to the market, turns students into entrepreneurs and, most importantly, delivers innovation.

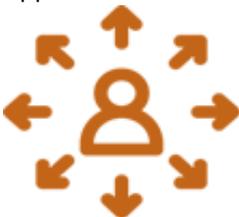
Recently the number of these communities grew and so did the challenges they seek to address. This implies new partnerships not only with higher education institutions that might already have more technical courses but also with the VET system in order to integrate their skills in developing the new solutions they are proposing. In this way it will be possible to address key issues in the labour market and the needs of industry.

3.2 Brainstorming on Challenges and Opportunities

Brainstorming “Challenges and Opportunities”

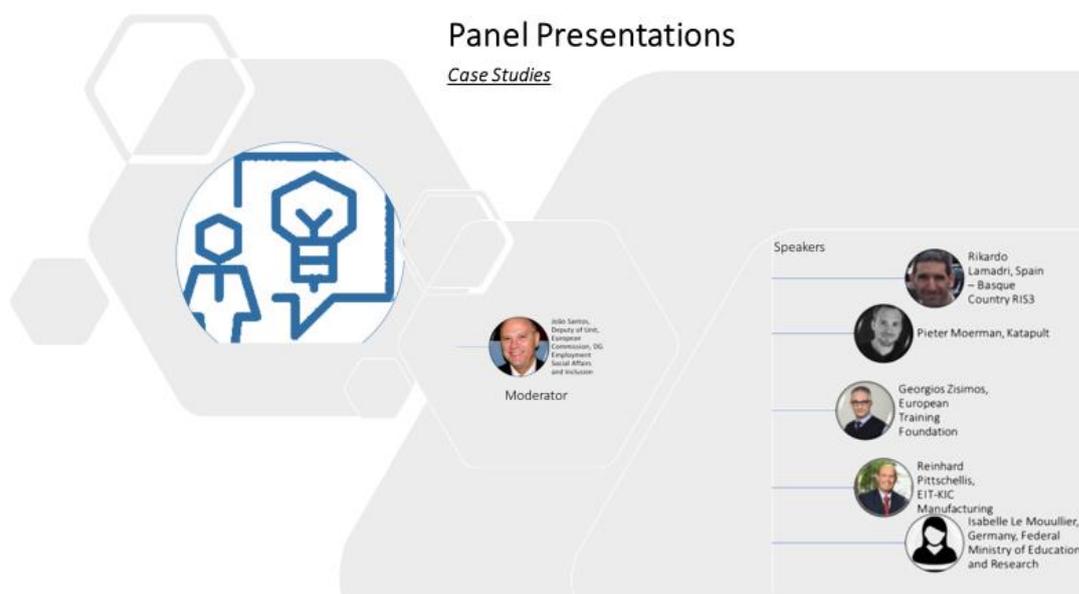
How can Centres of Vocational Excellence work with local and regional authorities to align skills with Smart Specialisation and regional development strategies?



<p>Challenges</p> 	<p>Goal - Identify three economic sectors and/or societal challenges that require a renewed focus on skills for innovation and regional development</p> <hr/> <p>Suggestions:</p> <ul style="list-style-type: none"> • Attract young qualified people to tech and industry and through incentives for mobility, get them to the right regions to fill the needs. • Upscale the workforce – from a more holistic perspective: what’s my profession? what do I need and why I am doing this? • How to bring partners together – employers, educators, and mobile individuals • How to address drivers of change in VET: sustainability; digitalization; greening • Rapid transformation and demographic mismatch
<p>Opportunities</p> 	<p>Goal - Identify three ways in which VET can play a proactive role in providing the skills needed to address those challenges</p> <hr/> <p>Suggestions:</p> <ul style="list-style-type: none"> • Improve the quality of life in regions • Public private collaboration – hybrid teachers; specific issues; include all levels of education • Facilitator in skills ecosystem that connect the dots between the different partners – neutral facilitator • Teaching innovative curricula (tacit knowledge and not just digital) • Development of new mindset (train the teachers; new learning environments; gamification)

	<ul style="list-style-type: none"> • Create tools to individualise learning, to give flexible place-based solutions; to identify needs of skills and knowledge
<p>Obstacles</p> 	<p>Goal - What are the obstacles that have to be addressed for VET to play a role in exploiting those opportunities</p> <hr/> <p>Suggestions:</p> <ul style="list-style-type: none"> • Lack of flexibility in education – schedule logistics, resources, mindset of teachers – from lectures to teachers’ facilitators • Competition within CoVE – potential obstacles • Low attractiveness of VET • Lack of a systematic approach

3.3 Panel 2 – Good practice case studies



The graphic features a large stylized 'E' shape composed of hexagons. Inside the 'E' is a blue icon of a person with a lightbulb above their head, symbolizing ideas and education. To the right of the 'E' is a section titled 'Panel Presentations' with a sub-heading 'Case Studies'. Below this, there are four circular portraits of speakers, each with their name and affiliation. The moderator is also identified with a portrait and name.

Panel Presentations
Case Studies

Moderator: Jukka Saarela, Deputy of Unit, European Commission, DG Employment, Social Affairs and Inclusion

Speakers:

- Rikardo Lamadri, Spain – Basque Country RIS3
- Pieter Moerman, Katapult
- Georgios Zisimos, European Training Foundation
- Reinhard Pittschellis, EIT-KIC Manufacturing
- Isabelle Le Moullier, Germany, Federal Ministry of Education and Research

In this session the different panellists presented their experience and examples of relevant practices. Relevant practices of VET integration for Smart Specialisation

Name	Smart Specialisation and the Basque VET & Regional Ecosystem
Target group	Students and Industry
Differentiating factors	<p>New Basque Law</p> <p>Basque VET plan: Combined three pillars framework</p> <p>Network of Basque VET Centres</p>

Seeking to anticipate the needs of businesses, the projects offer a response that will allow flexibility, versatility and broad-based application as key aspects for competitiveness, contributing to the rapid development of highly

specialised professionals. To do this the Basque VET vice-ministry, through its organic structures (TKNIKA, IDEATK, Basque Institute of Knowledge) introduced a new law, redefining the public policy and agenda that seeks to bring a more coherent policy between future skills needs, innovation, excellence, public-private partnership within the innovation strategy linked to S3, and connected to international and European networks (e.g. UNESCO-UNEVOC, EARLALL, TA3, WFCP).

At the same time a Basque VET plan was developed focusing on VET in the context of the fourth industrial revolution, so it would be possible to manage the change from innovation to intelligence and within the S3 for the Basque Region on the strategic domains/ environments of Automation; Automotive; Energy; Manufacturing; and Creative industries, presenting four Hubs on Biosciences, advanced manufacturing, Digital and connected factory and Energy. It is based on a three pillar model (Training; Applied innovation; Active entrepreneurship) and has a transversal domain of internationalisation.

A Network of Integrated VET Centres is being promoted so synergies can be obtained in achieving the same goal: Technological awareness; Courses offered; Quality Assurance System compliance; Project Results focus (previous and future); Alumni tracking. This network will focus on high performance training with 70 centres and has reached 24.325 students over the past six years. It offers training through a dual system of teaching and to match skills development with business needs, based on annual reports received from the companies. These specialised programs are tailored according to each company's needs. Recently, this Basque network, coordinated by the Institute for the Innovation of the Vocational and Educational Training System in the Basque Country - TNIKA, developed a CoVE project for Integration of Industry 4.0 technologies in VET centres.

Other Links /Useful documentation	https://www.euskadi.eus/contenidos/informacion/fpgeneral/en_def/adjuntos/FP_INGELESA_web.pdf https://tknika.eus/en/cont/the-basque-country-will-host-the-next-world-congress-of-vocational-education-centres/ https://tknika.eus/en/cont/proyectos/hobbide/# https://unevoc.unesco.org/go.php?q=UNEVOC+Network++Centre&id=3065
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Name	Katapult
Target group	Students, employees to receive lifelong learning training, SME-businesses to contribute towards innovation
Differentiating factors	Government, education and training institutions and private corporations investing in conversion of the workforce through Centres of Expertise. Variation and autonomy are a key characteristic: each Centre creates its own niche and market value.

Katapult is a learning network of more than 200 partners that supports public-private partnerships with tools and guidance so they can build robust organisations that will benefit students, educational institutions, industry and society. It was born from the need to adapt to changing job requirements and the joint forces of a public-private partnership (PPP) to accelerate change and invest in conversion of the workforce. They are referred to as Centres of Expertise (Higher Education) and Centres for Innovative Craftsmanship (Vocational Education) and the network is Katapult, representing collaboration between entrepreneurs, vocational schools, higher education institutions and government in various sectors offering – amongst others – nine to 12 months of intensive skills training for apprentices. The PPP are developed in phases called “building blocks” that allows for a focus on designing a strategy orientated to common goals.

The Centres that are part of Katapult have autonomy to understand the specific needs of the regional SMEs and balance them with the profile of the learners. They have support for understanding the students based on research (Innovators-30%; Doers-20%; Social implementers-23%; Explorers-17%; Creative makers-10%), and for each learner profile segment they design the appropriate training course to respond to SMEs’ needs. One of the good practice cases is the Denim Jean School in Amsterdam, where students learn “hands on” all they need

to know about the denim industry, learning and working together with professionals from the industry, in a dual system perspective. The key is to analyse what is the strength of the region and what is necessary to develop the activities and the curriculum, according to the learner’s profile, without rules and formal approaches. The costs of the programmes are shared by the regional government, companies and VET centres as well as ownership in the long term.

Katapult participates in different funding programmes, and recently they received an EU grant for a CoVE project “Platform of Vocational Excellence Water” which draws on existing and emerging vocational competences and skills needs in the water sector, translating them into an approach of vocational excellence in a transnational partnership, ensuring a strong connection and convergence between VET and the regional economic and social ecosystems, as part of the knowledge triangles (Triple Helix) convergence. The project goal is to create an infrastructure to embed vocational excellence in the water sector in Europe and lay the grounds for vocational curricula and competence development of VET students.

Other links /Useful documentation <https://www.wijzijkatapult.nl/english/>
https://www.wijzijkatapult.nl/files/downloads/English/B3782%20BetaTechMentality_ENG.pdf
https://www.wijzijkatapult.nl/files/downloads/Docs%20bij%20berichten/EA-01-19-571-EN-N_incl-exec-sum.pdf

Name	European Training Foundation
Target group	Countries outside Europe – policymakers, and VET entities
Differentiating factors	Transnational cooperation; CoVEs transnational network for Excellence (ENE)

The European Training Foundation (ETF) is the EU agency supporting countries surrounding the European Union (29 countries), helping them transition and develop using their human capital potential through the reform of education, training, and labour market systems, in the context of EU external relations policies. The ETF considers that CoVEs can play a part in wider systemic VET reform, whether regional, national or transnational, and that there is no connection between CoVEs outside each region or country. Moreover, their analysis observed that different countries are using CoVEs to develop different strategies, which can help policymakers consider some of the choices and trade-offs they are facing. It plans to launch a transnational network of Centres of Vocational Excellence (ENE).

The ETF has chosen 17 countries to be part of the initial project, and will invite them to provide information on how CoVEs are performing and their goals, so as to analyse if they comply with three criteria: endorsement by the country; what and how; commitment. After applying these initial criteria, they will separate them into different areas and Hubs (e.g. Adult education and training; Digitalisation; Smart specialisation; Green skills to achieve the 2030 SDGs; Employers engagement; Autonomy).

They are expecting that this project will achieve partnerships that allow CoVEs to use resources efficiently to attract high quality teachers and trainers, and to produce tools and innovative curricula in niche economic areas. In this way it will be possible to explore new opportunities for peer learning activities (PLA) among members, and develop tools (i.e. a training module, a planning tool or some instructional materials) to devise innovative approaches to tackling societal, technological and economic challenges (climate change, digitalisation, artificial intelligence, sustainable development goals, integration of migrants, upskilling people with low qualification levels, etc.).

They are producing a document that will briefly explain their vision for ENE and how it will operate; a summary is already available.

Other links /Useful documentation <https://www.etf.europa.eu/en>

https://www.etf.europa.eu/sites/default/files/2019-10/centres_of_vacational_excellence_summary.pdf

<https://openspace.etf.europa.eu/>

https://www.etf.europa.eu/sites/default/files/2018-09/VET%20reforms%20in%20ETF%20partner%20countries%20_report.pdf

Name	EIT-KIC Manufacturing
Target group	Society, Industry and Academia
Differentiating factors	Education Strategy rests on three pillars: empower, connect and engage programmes

EIT Manufacturing is an Innovation Community within the [European Institute of Innovation & Technology \(EIT\)](#) that connects the leading manufacturing actors in Europe. In pursuing this vision, EIT Manufacturing will establish an innovation community and build a network of ecosystems to educate and train people to acquire skills and find opportunities, and to attract investors so that innovators can access venture capital.

The EIT Strategy aims at academic education, but manufacturing takes place in factories, and most of the people working there have a vocational background. Further industrial development is crucial to also train the existing and future workforce on the shop floor. Their education strategy is supported by three pillars: empower – not only bachelors, master or PhD students but also professional workers in and around the workplace; connect – through a Guided Learning Platform; and engage – involving society, students and cross-industry. Individual digital learning units, or what EIT refers to as ‘nuggets’, provide a modular approach to interacting with Learning Factories (models of a real factory in schools) and Teaching Factories (students solving real industrial problems); and thus the EIT engages across society, students and cross-Industry.

Other links <https://eitmanufacturing.eu/>
/Useful documentation <https://eit.europa.eu/our-communities/eit-manufacturing>
<https://eitmanufacturing.eu/activities/#education>

Name	InnoVET
Target group	Society and Industry
Differentiating factors	Programmes that lead to nationally recognized qualification; Certification

The InnoVET project is a German initiative to promote innovation clusters in VET, responding to labour market and industry needs and ensure equivalence between dual and academic based education. In 2014, a partnership between the national VET authorities from Austria, Denmark, Germany, Luxembourg and Switzerland was formed to develop a structured and evidence-based approach promoting the development of apprenticeship and dual VET systems supporting the European Alliance for Apprenticeship, co-funded by the Erasmus+ programme.

The project developed an Apprentice Toolbox (online resource for apprenticeship and dual-track vocational education with in-depth information on five countries with mature apprenticeship systems) with the aim of offering a resource base conducive to policy learning, policy experimentation and practice development by

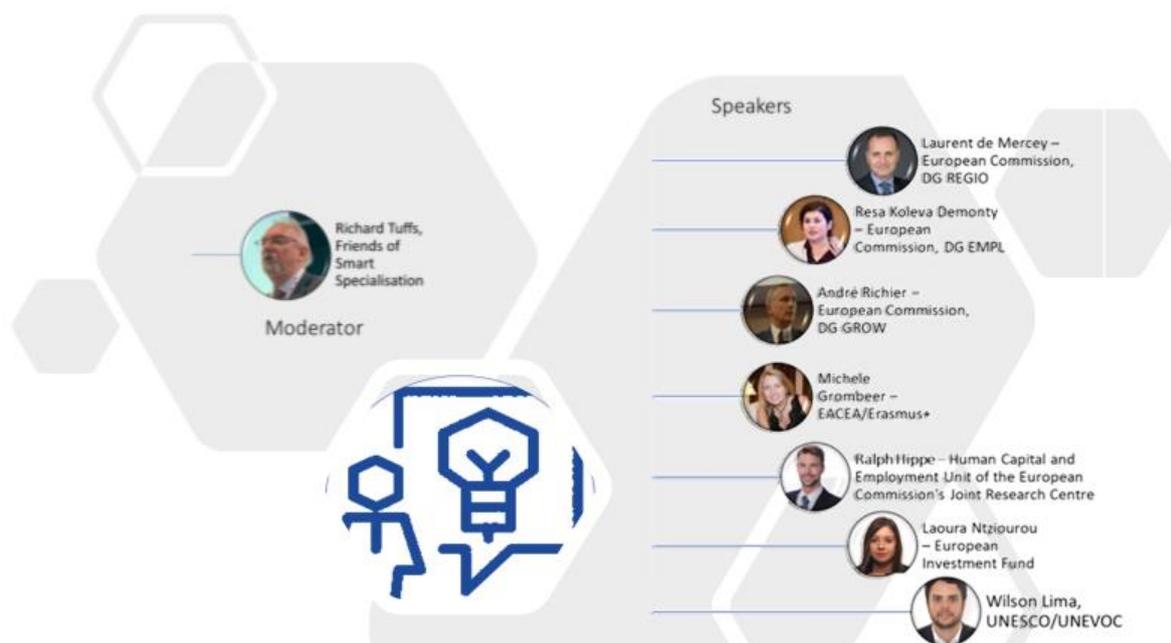
collecting and combining the apprenticeship system building blocks from the five countries. This Toolbox was designed using knowledge from previously developed apprenticeship systems and focused on the structure of the resource base so that it may be combined in different ways, according to the socioeconomic characteristics of each region, and their policy needs.

There is a wide set of programmes for different qualification levels that is included in the national qualification frameworks (in the private and public sectors). The social partners have a key role in monitoring and identifying emerging trends, with implications on the future demand for skilled workers. A key success factor of apprenticeship is that it leads to a nationally recognized qualification, which eases the transition to labour markets and provides access to further and continuing education.

The project opened a government call with 175 proposals to create new high value cooperation with old entities VET and intercompany centres, any kind of education centre, higher education or international education.

Other links <https://www.apprenticeship-toolbox.eu/attractiveness-excellence/excellence-in-vet/121-excellence-in-vet-in-germany>
/Useful documentation <https://www.apprenticeship-toolbox.eu/>

3.4 Panel 3 – Funding and Support



This final panel session presented the main funding opportunities (actual and future) to develop partnerships within smart specialisation strategies and between VET centres and SMEs.

The European Regional Development Fund (ERDF), as presented by **Laurent de Mercey**, provides financial support for the development and structural adjustment of regional economies, economic change, and enhanced competitiveness as well as territorial cooperation throughout the EU, along with other European Funds for Cohesion Policy. In the next programming period from 2021 the proposed ERDF includes four specific objectives within the wider policy objective of a 'Smarter Europe' (enhancing R&I capacities + uptake of advanced technologies; Digitisation for citizens, companies and governments; Growth and competitiveness of SMEs; Developing skills for smart specialisation, industrial transition and entrepreneurship), to assist interregional cooperation value chains.

The ERDF shall support what is foreseen in its Art. 4 of the ERDF Regulation proposal (investments in infrastructure; investments in access to services; productive investments in SMEs; equipment, software and intangible assets; information, communication, studies, networking, cooperation, exchange of experience and activities involving clusters; technical assistance) and in addition it supports productive investments in enterprises other than SMEs when they involve cooperation with SMEs in research and innovation activities and training, life-long learning and education activities (development of skills for S3, industrial transition and entrepreneurship). The ERDF investments must focus on the smart specialisation priority areas identified in the process of entrepreneurial discovery. From this perspective types of action that ERDF is funding include: Innovation management in SMEs; skills for (training, re/upskilling) within firms; skills for higher education to increase commercial viability; and integration of education and training institutions, including higher education and centres of vocational excellence, within national and regional innovation, in technology diffusion and skills development ecosystems.

The European Social Fund (ESF) is Europe’s main instrument for supporting jobs, helping people get better jobs and ensuring fairer job opportunities for all EU citizens. Structural investment funds have common rules, but these can be applied differently in each country and region. As **Resa Demonty** pointed out, the ESF supports all ages of people, both those in full time education and in work / lifelong learning, as well as training and education reforms at all levels of education, and even R&I by funding individual grants such as for doctoral studies. Pursuit of the short-term goals to mitigate the consequences of the current economic crisis, especially the rise in unemployment and poverty levels, and in the long term as part of Europe’s strategy to remodel its economy, to create not just jobs, but an inclusive society.

In the next European funding programme the ESF will support digital competencies underlying the broad process, to improve skills and help the transition to automation and digital society, and green skills also for all levels of education reforms applied to the policies of each country. Furthermore, it will have more complementary actions with closer cooperation between programmes to upscale practices that come from Erasmus+ or other centrally funded programmes.

The Commission’s Directorate-General for the Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) is responsible for EU policy on the single market, industry, entrepreneurship and small businesses, represented at the workshop by **André Richier**. It mobilises people and resources to create, curate, make sense of and use knowledge to inform policymaking across Europe. DG GROW has observed that 70% of businesses will need new skills in order to develop and remain competitive, within the redesign of the policies to support industry. Through the intersectoral group convened to analyse skills required to scale the success stories, they will produce a new document, to be launched in March 2020 on an updated, “New Skills Agenda” which will explore the skills for industry necessary to develop regional champions. They are studying the resources, time and people that will be needed to achieve the goals of a new skills agenda. This must be from a demand perspective (industry) and the definition of key players for a pact that would bring together skills (toolbox) with new partnerships, funds, and, consequently, new jobs. An SME strategy aimed at empowering intermediaries to help the SMEs will be published in November 2020.

The Education, Audio-visual and Culture Executive Agency (EACEA) implements and manages European funding opportunities and networks in the fields of education and training, youth, humanitarian aid, sport, a audio-visual, culture and citizenship, providing analysis and data in the field of education and youth policies in Europe. **Michele Grombeer** explained that through the ERASMUS+ Programme, Key Activity 2 – Cooperation for innovation and the exchange of good practice, the Sector Skills Alliance launched a pilot project in October 2018 based on innovative cooperation methods, as a first step towards the establishment of Centres of Vocational Excellence (CoVE). The call for proposals sought the development of sectoral approaches for design and delivery of VET content combined with a strategic approach to nurture skills-ecosystems at the local level and in line with local growth and innovation strategies. The eligibility criteria were that projects would have at least four programme countries, eight full partners, including at least three companies, industry or sector representatives, and at least three VET providers. In this Call five projects were approved and started their activities from November 2019 (see Table 1 – CoVE Selected Projects – 1st call).

Table 1 – CoVE Selected Projects – 1st call

Project Name	Sector	Countries	EU Grant	Coordinator	Partners
Talentjourney	IoT in Smart manufacturing	5	953.550 €	Šolski center Nova Gorica (SI)	13

Excellent Advanced Manufacturing 4.0	Advanced Manufacturing	4	799.332 €	Tknika (ES)	8
Digital Innovation Hub for Cloud Based Services	Cloud computing	5	999.882 €	Helsinki Business college (FI)	11
Open Design School	Cultural and creative industries	9	874.093 €	Basilicata Foundation (IT)	10
Platform of Vocational Excellence Water	Water sector	6	998.022 €	Friesland college (NL)	12

The second call was launched in October 2019, through the ERASMUS+ Programme, Key Activity 3 - Support for policy reform that will fund five large scale projects running for four years, based on innovative cooperation methods, for the establishment of platforms of CoVEs. The projects must include a strategic approach to development of skills-ecosystems at the local level and in line with local growth and innovation strategies. The criteria of eligibility implies that the projects must have at least four programme countries (including at least two EU MS), at least eight full partners, with at least one company, industry or sector representative, and one VET provider in each country, and can be focused on any EQF level but must also include levels three, four or five. Under this call, it will be possible to involve associate partners (non-beneficiary partners from all ERASMUS+ Programme and Partner countries). The call will close in February 2020.

The European Commission, in close cooperation with a team of experts from schools, education ministries and research institutes across Europe (including European Training Foundation, the European Centre for the Development of Vocational Training-CEDEFOP and UNESCO's Institute for Information Technologies in Education), developed a tool designed to help schools embed digital technologies into teaching, learning and student assessment - SELFIE (Self-reflection on Effective Learning by Fostering the use of Innovative Educational Technologies).

SELFIE is an online tool to anonymously gather the views of students, teachers and school leaders on how digital technologies are used in their school, **Ralph Hippe** presented. Currently available in 35 languages (including all 24 official EU languages), the questionnaire uses short statements and questions that cover all areas relevant for the use of digital technologies for teaching and learning, such as leadership, infrastructure, teacher training and students' digital competence. The report produced at the end of the self-reflection exercise allows schools to know where they stand, what their strengths are and what needs to be improved. SELFIE allows to have a discussion within the school community to take and monitor actions to modernize and to digitalize in a bottom-up approach.

This tool is also being developed for work-based learning systems in VET in the future so companies can also be involved in this reflection process on training, internships, on the job training and improving local cooperation with VET schools. Thus, it will support local VET schools and companies in making the best use of digital technologies for teaching and learning by also involving the in-company trainers and adding new questions on cooperation issues.

The European Fund for Strategic Investments - EFSI is a jointly launched initiative by the European Investment Bank, [European Investment Fund](#) and the European Commission to help overcome the current investment gap in the EU, **Laoura Ntziourou** said. Because of the emerging changes in work and the technological requirements for new skills, the EFSI will launch, in February 2020, a new pilot project "Skills and Education EFSI Guarantee Pilot Paving the way into #InvestEU". In this way EFSI will involve businesses that now have a critical role to play (e.g. innovative educational institutions; individuals' own engagement and investment) in order to help build a stronger private sector investment in skills and skills management, through easier access to financing for the benefit of: firms, to strengthen workforce skills and skills management; innovative providers of education, training and related services, to grow and innovate; and individuals, willing to invest in themselves.

The EFSI shares the risk with its partners (financial institutions and organizations supplying education and training) to incentivize lending to the final beneficiaries (students and learners; enterprises investing in skills; and organizations supplying education and training). Therefore, the VET centres can benefit in three ways as

the loan can be used to upscale the workforce, help the business in need of a training centre related to an educational project, or financing to helping attract students and learners.

The i-Hubs - Skills for innovation Hubs is a global initiative led by UNESCO-UNEVOC and supported by the Beijing Caofeidian International Vocational Education City (BCEC), with contributions from the German Federal Ministry of Education and Research (BMBWF) and the Federal Ministry for Economic Cooperation and Development (BMZ). **Wilson Lima** explained that they are part of a broader project "Developing TVET institutions for entrepreneurship, innovation and sustainability". The i-Hubs desire to ensure that VET institutions remain relevant as drivers of employability, economic growth and inclusive social development, paying attention to the combined effects of climate change, digitalization and new emerging forms of entrepreneurship.

For the pilot project UNEVOC – UNESCO invited ten VET institutions from across Asia-Pacific, Africa and Europe, based on their proven experience and commitment to innovation in the fields of entrepreneurship, digitalization and/or greening, to take part in the initiative. They committed to the co-development and testing a comprehensive framework for Innovation ([structured self-assessment process](#) and a [toolbox](#)). The purpose is to assess institutions' innovation capacity, to identify strengths, challenges and opportunities for partnerships with relevant actors, as well as to share and learn about innovation across the broad community of VET.

3.5 Brainstorming – Solutions

Brainstorming “Solutions”

*How to make the most of funding programmes and synergies:
Tools and instruments to support CoVE project implementation*



<p>Success factors</p> 	<p>Goal - What are the common success factors in the examples that were presented during the panel</p> <hr/> <p>Suggestions:</p> <ul style="list-style-type: none"> • Alignment of policies between EU regions and entities • Political will and leadership • Adequate finance • Demand led and looking of benefits and feedback loop • Autonomy – dare to fail – there should be an opportunity to innovate and to fail
<p>Funding</p>	<p>Goal - What type of activities should be funded and by whom (EU funding, national, regional, bank loans, etc) How to ensure the sustainability of the projects (beyond project duration)</p> <hr/> <p>Suggestions:</p> <ul style="list-style-type: none"> • Allow risk taking

	<ul style="list-style-type: none"> • Capacity building for weaker regions • Individual learning accounts – including to VET entities • Funding for transfer expertise • Demo labs linked to S3 priorities (see vanguard initiative) • Shared data • State aid clarity • To change mindsets about certain professionals and industries • Permit mobility of trainers’ trough Erasmus plus
<p>Tools and Instruments</p> 	<p>Goal - What type of tools instruments and collaborative mechanisms could be provided at EU level, or developed at a local level to ensure the successful implementation of the projects (e.g. self-assessment and analytical tools, skill and innovation ecosystem matrix, peer learning, networking, etc.)</p> <p>Suggestions:</p> <ul style="list-style-type: none"> • Structured information from the EC level (looking at several websites to collect all the information) • Avoid reinventing the wheel • Access to experts’ coaches • Coordination framework – a system to coordinate • Blueprint for skills for all levels (low, middle and high) • Benefits could be obtained by harmonizing skills blueprints • Pulling national initiatives together

3.6 Closing session



The experience of UNESCO – UNEVOC has an innovation framework related to the concept of the Centre of Vocational Excellence, as **Soon Choi** presented, and has been working in their UNEVOC Hubs focusing on four categories:

1. Societal innovation – developing guidelines into more practical modules, getting close to the communities of learners and involving them in the VET issues and making tangible differences;

2. Excel and innovate – how to get through the innovation process – what do you do with the common processes that drive innovation – how to deal with the gap between now and what I want to do – promote micro reforms that have to be translated into daily operations
3. Public-private partnerships – the private has to be seen not just as a partner but also an agent of change
4. Open the doors to the population that is difficult to attract and integrate, the marginalized youth is not well integrated, and sharing the technical resources to accommodate the needs of marginalised youth.

UNEVOC will disseminate information from their experience in sharing knowledge and growing together with other projects and concepts. Social integration and connecting with the community where projects are located are very important so everyone can work together and face the difficulties collectively.

Dana Bachmann emphasised that Centres for Vocational Excellence seek to make structural changes to VET. It is not a question of VET just preparing individuals for higher skilled jobs, it is about reinventing careers. The CoVE initiative is focused on fostering stronger partnerships since the education institutions have to be connected to the real world, integrated at different levels, from individual, regional and community level, to business communities and employers at large and to a broader education system (all levels of education). It needs to connect to the early educational system as well as the higher education and research-centric education institutions.

VET policy over the next decade will look to promote excellence and inclusion. There is a need to have a closer connection to the sustainability agenda, one that is designed to put a focus on providers and bring in missing key actors, which specifically relate to entities that are providing the training to people locally. The focus remains primarily on the learner but also looks to incorporate the inputs of representative bodies of VET in the overall system and the different realities in the various Member States.

Europe must look around the world to see what other countries are doing outside the EU to promote VET. In this regards work with UNESCO and changes to the future of Erasmus mobility which will allow for exchange outside EU will be an added value for European VET. The focus must be on the individual, but it should be done collectively, addressing both the providers of the training and on the learners since they are the best ambassadors of VET.

Smart specialisation is not just a policy narrative, it is about working at the regional level, and it is about innovating and scaling up. Successful examples from organisations such as ETF, with works beyond Europe, promote the type of excellence in VET that DG Employment is seeking with its programmes.

4 Conclusions

This workshop brought together a wide range of perspectives from policy and practice, illustrating the potential of the CoVE initiative to support regional innovation ecosystems. Furthermore, the interactive sessions and presentations of relevant practices, and the discussion on funding, captured useful ideas on how to better support the growth of the CoVEs.

Brainstorming on the main challenges, opportunities and obstacles highlighted the difficulties that VET centres have when trying to answer the skills needs of local firms. These include establishing strong and sustainable relationships with industry, attracting learners and enabling teachers, as well as developing innovative learning methods for competences and skills development. In order to improve the quality of life in regions, public-private cooperation is needed to address societal challenges (sustainability, digitalization, greening and demographic mismatch) with improved integration of skills sets, knowledge and industry demand. This implies a new mind-set, not only for workers and learners but also for teachers and policy makers. A systemic approach to policy making would allow VET to assume a strategic role in addressing smart specialisation priorities. Firmly establishing CoVEs in regional innovation ecosystems would increase their attractiveness for learners and partners in industry, although this also requires reform of VET systems and investment in the skills and competences of teachers.

The examples of CoVEs or emerging CoVEs presented in the workshop showed the potential of partnerships between the VET system and industry, including jointly designed curricula, workplace learning and applied research projects. Yet these good practices would contribute much more to regional development if they are integrated into a wider strategy through cooperation with regional authorities: Smart specialisation provides such an opportunity, as illustrated by the policy integration achieved in the Basque Country.

The workshop showed that there is still a long way to go and the emerging CoVEs would benefit from European level support, not only through mutual peer learning on what works and what doesn't, depending on the local context, but through dedicated tools for self-assessment, monitoring and evaluation. Further reflection and concrete proposals are required to take this task forward.

Presentations and Further Reading

Presentations

- JRC S3 Platform Workshop Page: <https://s3platform.jrc.ec.europa.eu/-/s3-skills-vocational-excellence>

Further reading

- European Commission mapping study on approaches to Centres of Vocational Excellence <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8250&furtherPubs=yes>
- European Training Foundation: Centres of vocational excellence – an engine for VET development? – An international analysis <https://www.etf.europa.eu/en/document-attachments/centres-vocational-excellence-engine-vet-development>
- Joint Research Centre: The role of VET in Smart Specialisation Strategies <https://s3platform.jrc.ec.europa.eu/-/skills-and-smart-specialisation-the-role-of-vocational-education-and-training-in-smart-specialisation-strategies>
- Cedefop Briefing note Innovation and training: partners in change <https://www.cedefop.europa.eu/en/publications-and-resources/publications/9103>
- UNESCO-UNEVOC study on Innovation in technical and vocational education and training (TVET) <https://unevoc.unesco.org/go.php?q=UNEVOC+Publications&lang=en&null=&null=&akt=id&st=&qs=6273>
- OECD Report on Regions in Industrial Transition, Policies for People and Places <http://www.oecd.org/publications/regions-in-industrial-transition-c76ec2a1-en.htm>
- Industry 2030 High Level Industrial Roundtable report “A vision for the European Industry until 2030” <https://ec.europa.eu/docsroom/documents/36468>
- Report on High-Tech Skills: Scaling up best practices and re-focusing funding programmes and incentives <http://skills4industry.eu/sites/default/files/2019-10/EA-01-19-639-EN-N.pdf>
- Increasing EU’s talent pool and promoting the highest quality standards in support of digital transformation https://skills4industry.eu/sites/default/files/2019-06/Brochure_Digiframe_final20190617.pdf
- Skills for Industry - Skills for Smart Industrial Specialisation and Digital Transformation http://skills4industry.eu/sites/default/files/2019-11/EA0419517ENN_Skills_for_Smart_Industrial_Specialisation_and_Digital_Transformation_-_Brochure.pdf
- Skills for industry - Online training : promoting opportunities for the workforce in Europe <https://op.europa.eu/en/publication-detail/-/publication/1b81c203-f553-11e9-8c1f-01aa75ed71a1/language-en>
- Skills for Industry - Curriculum Guidelines 4.0 (*to be released in Feb. 2020*)
- Skills for SMEs: Big Data, Internet of Things and Cybersecurity (*to be released in Feb. 2020*)
- Article in the CECIMO Magazine on Platforms of Centres of Vocational Excellence <https://www.cecimo.eu/newsroom/magazine/>
- The Erasmus+ call for pilot projects on CoVE’s, published on 15 October 2019 https://eacea.ec.europa.eu/erasmus-plus/funding/ka3-centers-of-vocational-excellence_en
- The changing nature of work and skills in the digital age <https://ec.europa.eu/jrc/en/publication/euro-scientific-and-technical-research-reports/changing-nature-work-and-skills-digital-age>
- Jones, B. and Grimshaw, D. (2012), “The Effects of Policies for Training and Skills on Improving Innovation Capabilities in Firms”, Compendium on Evidence on the Effectiveness of Innovation Policy Intervention, Manchester Institute of Innovation Research.
<http://www.innovation-policy.org.uk/compendium/section/Default.aspx?topicid=17>
- Skills St and match - cedefop: https://www.cedefop.europa.eu/files/9142_en.pdf
- European Institute of Innovation and Technology (EIT) Knowledge and Innovation Communities (KICs) https://publications.jrc.ec.europa.eu/repository/bitstream/JRC116904/jrc-eit_joint_report_collaboration_in_ris3_context.pdf
- Skills and Education EFSI Guarantee Pilot Paving the way into #InvestEU <https://www.fi-compass.eu/sites/default/files/publications/Skills%20and%20Education%20EFSI%20Guarantee%20Pilot%20Paving%20the%20way%20into%20%23InvestEU.pdf>
- Trends mapping - Innovation in TVET: https://unevoc.unesco.org/pub/tm_innovation.pdf

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