

*skill*set AND **MATCH**

CEDEFOP'S MAGAZINE
PROMOTING
LEARNING FOR WORK

 **CEDEFOP**

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MAIN STORY:

ARE WE PREPARED
FOR THE FUTURE OF WORK?

INTERVIEWS:

**KRASIMIR VALCHEV, ANNE
SANDER, EMILIAN PAVEL, SIÔN
SIMON, TINA BERTZELETOU**

FEATURE: NORWAY'S YEAR OF VET

**ARTICLE: AUSTRALIA'S REAL SKILLS
FOR REAL CAREERS STRATEGY**



The **European Centre for the Development of Vocational Training** (Cedefop) is the European Union's reference centre for vocational education and training.

We provide information on and analyses of vocational education and training systems, policies, research and practice.

Cedefop was established in 1975 by Council Regulation (EEC) No 337/75.



VET students, 2nd Thessaloniki EPAS apprenticeship-OAED school, Greece

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Employable

Or

unemployable

JAMES CALLEJA

CEDEFOP DIRECTOR



*Our ambition is to
continue supporting
policy that inspires
more citizens to
work and learn*

”

Is this the question? No. This is the answer that often follows a specific learning process. At a recent policy learning forum, which Cedefop organised with the European Economic and Social Committee (EESC) in support of the European Commission's initiative *Upskilling pathways*, the focus of my concluding remarks was on 'mending broken talent' which often follows formal education and makes people unemployable.

Some 65 million low-skilled adults are a heavy weight on European economies and on competitiveness. In principle, education should prevent this.

One participant at the EESC/Cedefop forum pledged to 'go and look for people who need support.' Efforts by training providers and policy-makers to create adequate learning environments serve no purpose if those at risk continue to shy away from acquiring new skills. Identifying low-skilled people for reskilling or upskilling is crucial.

The European qualifications framework's 10th anniversary comes at a challenging time. By infusing transparency into qualifications we added value to employability; employers have a better view of what a person knows and is capable of doing.

Work environments require higher and more formalised skills profiles. People will have to compete with the changing nature of work, which is increasingly becoming simpler but smarter through technology. Adaptability, lifelong learning and mobility will make or break those who are employable and those who are not. Making vocational education and training (VET) accessible, affordable and attractive is a mission: those paid to accomplish this mission must work on doing just that, starting now.

Cedefop today is more than just a meeting place for research and discussion on VET. It is a clearing house for action that impacts positively on European citizens. Not everyone is capable of transforming talent into payable productivity. Our ambition is to continue supporting policy that inspires more citizens to work and learn.

The article written by the Australian Assistant Minister for Vocational Education and Skills exclusively for Cedefop prompts us to focus on real skills for real careers. That's how people become employable. ■

VET for prosperity in Europe



KRASIMIR VALCHEV

MINISTER FOR EDUCATION AND SCIENCE, BULGARIA

“ *We are working for a European Union, in which young people receive the best education and training, and can study, find and create jobs*

Bulgaria currently holds the rotating EU Presidency for the first time since its accession in 2007. The digital economy and skills for the future feature prominently in its programme. Education Minister Krasimir Valchev, an economist by trade with expertise in budgetary policies, has spoken to *Skillset and match* about his country's priorities in education and the labour market during its six-month Presidency.

What does your country bring to this institution in the area of education?

As a Presidency of the Council of the EU, we believe that a truly inclusive and innovative European society can be built through targeted and systematic investment in education and training. We are working for

a European Union in which young people receive the best education and training, and can study, find and create jobs.

Among the Presidency's priorities are the digital economy and skills for the future. What do you aspire to achieve in this field by the end of the six months?

One of our priorities is equipping people with the skills for the future, allowing them more easily to find their place not only in the labour market but also in society. European citizens should become not just consumers of technology but also digital creators. Development of digital skills and competences, as one of the key competences for lifelong learning and digital education, was on the agenda of the first Education Ministers Council under the Bulgarian Presidency. We noted Member States'

readiness to work with relevant EU institutions on implementing the European Commission's recently published *Digital education action plan*. We believe that teaching computational thinking and coding, media literacy and cybersecurity skills should be promoted at all stages of education; it is crucial to teach citizens how to use ICT in a responsible and safe manner and to have an inclusive and innovative approach to education, stimulating new ways of thinking and learning. Together with stakeholders we are continuing the discussion. We have launched a 'Sofia call' for action on digital skills and education as a result of the Presidency flagship conference 'Educate to create', in Sofia on 19 and 20 April. Digital skills will also be in focus in the Council conclusions to be adopted at the 22 May Education Council. A good example from

the country I know best, Bulgaria, is the *Training for an ICT career* national programme 2017-20. This is being implemented on the basis of an agreement between the associations in the ICT sector in Bulgaria and the Ministry of Education and Science, with the aim of additional ICT training of secondary school students across the country to acquire a vocational qualification as applied programmer.

The link between education and the labour market is also at the heart of what Cedefop does. How do you see this relationship shaping up in the era of rapid technological development?

Vocational education and training (VET) is a key connecting element between the world of education and that of business. Where there is effective partnership among stakeholders, it suggests mechanisms for synchronising skills demand and supply in the labour market, as well as education and social inclusion policies. There is a need for information and feedback loops using data on VET graduate employability; such data can help in adapting curricula, occupational profiles and the



content of VET qualifications to respond to new economic and technical requirements in an era of rapid technological development. The meeting of Directors General for VET on the future of work and of VET, in Sofia, led to an exchange of knowledge and good practices; these covered VET graduate tracking measures in Bulgaria, implemented with the support of Cedefop, and studies in other EU Member States for collecting qualitative information and good practices to enhance the foundation for evidence-based policy-making.

What kind of role do you see for vocational education and training in Europe?

In a dynamic world of global competitiveness, new organisational models, rapid technological changes and digitalisation, the role of vocational education and training is to ensure balanced development of human resources. These provide increased employability and technological innovation, as well as protection against poverty and social exclusion. VET is an instrument which supports competitiveness and prosperity in Europe.

In your view, what skills are most important for young people?

The most important are 'skills for the future': digital skills, entrepreneurship and innovation-oriented attitudes, creative thinking, learning skills, adaptability and social skills. These form the lifelong learning skills of young people, helping them to be adaptable and to fit into the ever-changing working environment of the digital economy. ■



Bulgarian Presidency of the Council of the European Union

Digital education action plan



Visiting MEPs praise Cedefop's work



The answer cannot be to reduce services and support for people trying to find work – that doesn't make economic sense

A delegation from the European Parliament's Committee on Employment and Social Affairs (EMPL) got to know Cedefop in more depth during a visit to its Thessaloniki headquarters. MEPs Anne Sander, member of the European People's Party group, from France, and the Socialists and Democrats' Siôn Simon, from the UK, and Romanian Emilian Pavel spent two days learning more about the agency's work. They were impressed!

'We've had some really interesting presentations, including one about the future of work and the impact of automation on the future labour market,' Mr Simon told *Skillset and match*, adding: 'We got some new insight, some evidence-based, data-based analysis that we don't normally get. That alone made it worth coming all the way to Thessaloniki to get some real added value. And then we heard about Europass, which is a tremendous success. Again on a scale that I hadn't previously quite appreciated: one CV generated now on Europass every 1.5 seconds; that's an astonishing statistic!'

Ms Sander was a rapporteur for the revision of Cedefop's Founding Regulation. She thought it important to meet the people behind the work: 'I have discovered a very high level of competence here in the staff of Cedefop. I'm interested in cross-border

mobility because I come from a cross-border region, Alsace, and questions of skills and competences needed for better mobility are very important to me, so it was a really interesting visit.'

As for Mr Pavel: 'It's good that Cedefop has now more projects focused on the future of the labour market, the future of skill demand. People say that 80% of future jobs have not been invented yet and Cedefop's new project is important to prepare ourselves and the next generation for this kind of job.'

The Romanian MEP, an IT engineer by trade, believes that a mix of skills will make people future-proof: 'You need basic IT skills to use the new technology, to benefit from the increase in productivity. But we also have to focus on social skills so that creative future jobs can be done by humans. For example, caretakers; when I retire, I don't want a robot to move me from A to B or take care of me.'

COUNTRY CHALLENGES

All three talked about the areas of Cedefop's work that are more relevant to their countries. 'Now in France we have a reform of apprenticeships,' noted Ms Sander. 'We had some discussions here concerning apprenticeships, how to sustain them, to involve businesses, to change the perception families and



L-r: MEPs Anne Sander, Siôn Simon and Emilian Pavel with Cedefop Director James Calleja and Deputy Director Mara Brugia during their visit to Cedefop in February

students have, how to make them more attractive. This is really important. And it's our task to do it.'

For Mr Pavel, Cedefop country reviews are particularly useful: 'This is something every Member State could benefit from. In Romania, we have different regions with different challenges and demands and, in the end, different solutions to get people into the labour market. We must get the information to people who are not actively seeking it. Cedefop can give us good practice examples of how needs are addressed directly, so we can move these people towards training, apprenticeship, VET, and make it easier for them to find a job.'

Mr Simon highlighted a challenge in the UK that, he argues, also applies across the EU: 'We've got a crisis of work and of training. Where there are jobs we can't get the right skills to get people into those jobs; where there aren't jobs, there is a different kind of training and a different level of education that we can't seem to coordinate. Our people are great people, with talent and imagination. It's a failure of policy that goes back 30, 40 years. It really needs rigorous applied research and analysis, and that's what we get here which is so valuable. It's the bridge between the analytical/theoretical and the workplace and the market place, the real world.'

FUTURE SUPPORT

The visiting MEPs are convinced of Cedefop's significance in the new education and labour market landscape. According to Mr Simon, 'This is an institution which, for what in public accounting terms is a very modest EUR 18 million budget, is punching above its weight; it would be a shame if the activities of Cedefop were curtailed by more effective real-term cuts. The answer cannot be to reduce services and support for people trying to find work – that doesn't make economic sense.'

Mr Pavel mentioned the EMPL Committee's continued support and suggested alternative ways of financing Cedefop's work: 'Perhaps we can find sources to pay for additional project-based staff, but keeping the independence and a neutral point of view. We must have external, clear, non-partisan opinion, solutions and recommendations for the Member States. I think this trip helps us to give this information to our colleagues in the EMPL Committee, but especially to the Budgets Committee where the final decision will be taken.'

In the meantime, Ms Sander advises Cedefop to continue 'to communicate a lot and be very visible at the European level.' ■

Learning providers at the heart of VET



TINA BERTZELETOU

CEDEFOP EXPERT

“To support VET’s expanding role and to raise awareness of it, we need the full engagement of learning providers”

‘For many years we had neglected the vocational education and training (VET) providers,’ said the European Commission’s Joao Santos at the first annual meeting of the European community of learning providers, which was set up by Cedefop and six EU-level associations. Things are now changing, Mr Santos added, with the Commission seeking regular contact with those ‘who know much more what is happening on the ground.’

Giving learning providers a voice as important VET stakeholders is the aim of the European community – an idea of Cedefop Director James Calleja. The agency’s long-serving expert Tina Bertzeletou has taken up the role of coordinator, organising

the first annual meeting in March in Thessaloniki.

She explains to Skillset and match the reasoning behind the initiative:

VET is seen as increasingly important, both to prepare people for jobs and to strengthen their participation in society as responsible citizens. To support VET’s expanding role and to raise awareness of it, we need the full engagement of learning providers. They not only work with national regulations and curricula but also increasingly contribute to identifying training needs and defining policies at national and EU levels; this is what guided us in setting up the European community in

2017, in agreement with the European Commission’s General Directorate for Employment (DG EMPL). Our initiative falls within the framework of the Bruges communiqué of 2010, which called for VET provider structured cooperation, as well as the Riga conclusions of 2015. The community is composed mainly of experts from the European Forum of Technical and Vocational Education Training (EfVET), the European Association of Institutes for Vocational Training (EVBB), the European Vocational Training Association (EVTA), the European Providers of Vocational Education and Training (EUproVET), the European Association of Institutions in Higher Education



(EURASHE) and the European University Continuing Education Network (EUCEN). The first four operate mostly in the VET sector, and the last two in higher professional education at EQF level 5 and above.

How can the community promote the role of providers as key vocational education and training stakeholders?

The European community of learning providers is a community of practice. Its ultimate goal is to help VET providers prepare for future challenges and to increase the impact of EU-level cooperation on VET. Both goals reinforce the quality of VET delivery and so raise the status of those who deliver it, the providers. The community complements the platform of European associations of VET providers set up by DG EMPL in 2015 to give policy advice to the European Commission.

What priorities will the community working groups be focusing on?

The community has decided to look into three areas of particular importance to VET providers: further development of teaching staff e-skills; promotion of staff learning mobility; and migrant and refugee empowerment and integration through learning. It will then come up with quality guidelines by 2020. These three priority themes reflect the challenges VET providers are expected to respond to: technology, automation and digitalisation that require new skills and competences and new ways to teach and learn; mobility that needs more support and funding to become accessible to all and an integral part of VET curricula; and the recent migratory and refugee waves that may strain local societies’ resources but may also provide new sources of skills supply and contribute to relieving the demographic problems most EU countries face. The quality of the responses to these challenges will certainly reinforce training organisations’ social utility for individual learners and the economy alike.

How will the work shape up?

The work in the community is done on a voluntary basis in subgroups; outcomes will primarily be addressed to VET providers. The community will also formulate proposals on post-2020 VET and submit them to the Commission. We have set up an online community and adopted a blended working approach based on both physical and virtual meetings and discussions. Mapping and analysing interesting cases, sharing information and experience, learning from peers and organising reflection groups on the three priority themes are all among the community’s activities. So far, the three subgroups have met twice: in May 2017 and March 2018 (as part of the community’s first annual meeting in Thessaloniki). They will meet again in the second half of the year. ■

More on the European community of learning providers



EQF celebrates 10th anniversary

“Learners, employers, training providers and recognition bodies can better understand the level, content and value of a qualification

Having come into force in April 2008, the European qualifications framework (EQF) has become a common reference point for comparing qualifications across national and institutional borders and making them easier to understand. It consists of eight learning-outcomes-based levels, described in terms of knowledge, skills, and autonomy and responsibility, to which national qualifications levels are linked or ‘referenced’.

National qualifications framework (NQF) and EQF levels increasingly feature on new certificates, diplomas and/or Europass supplements and qualification databases. As a result, learners, employers, training providers and recognition bodies can better understand the level, content and value of a qualification.

The EQF has acted as a catalyst for NQF development and contributed to changes in the qualification landscape in Europe. Before 2005, NQFs had been set up in just three European countries: Ireland, France and the UK. In 2018, frameworks have been, or are being, developed and implemented in all 39 countries cooperating in the EQF: the 28 EU Member States plus Albania, Bosnia-Herzegovina, the former Yugoslav Republic of Macedonia, Iceland, Kosovo, Liechtenstein, Montenegro, Norway, Serbia, Switzerland and Turkey. Although these frameworks have reached different implementation stages, an increasing number are now becoming operational and making contributions to education and training policies and practices in their respective countries.

The EQF has promoted two important principles supporting the transparency and modernisation of qualifications systems in Europe:

- the learning outcomes orientation, focusing on what a holder of a qualification is expected to know, be able to do and understand. This provides a new perspective on qualification systems, and content and profile of qualifications. The EQF has reinforced qualifications design in terms of learning outcomes, which provides a common language to compare qualifications. Calibrating the qualifications description requirements and NQF level descriptors is work in progress in many countries;
- the comprehensive approach covering all levels and types of qualifications from formal education and training to those awarded in non-formal contexts and through validation of non-formal and informal learning. The comprehensive approach draws attention to progression across education sectors and borders.

Countries have voluntarily adapted these principles to their national circumstances and needs. The 10 EQF referencing criteria have been set up to help ensure that NQFs are linked to the EQF in a coherent and transparent way.

By the beginning of 2018, 34 countries had formally linked their national qualifications frameworks or systems to the EQF: Austria, Belgium (Flemish and French Communities), Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, the former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy,



Cedefop expert Jens Bjørnåvold (second left) speaking at the EQF anniversary conference

Kosovo, Latvia, Lichtenstein, Lithuania, Luxembourg, Malta, Montenegro, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Sweden, Switzerland, Turkey and the United Kingdom.

The EQF referencing reports represent a ‘snapshot’ in time and, as national qualification systems and frameworks evolve, will eventually become outdated; this means a need for regular updates building on visible national progress. The revised EQF recommendation, adopted in 2017, also encourages the trend of implementing comprehensive frameworks which comprise qualifications of all types and levels, awarded by different bodies and subsystems, including private and international qualifications. In the years to come, the question of the framework impact on lifelong learning, employability, mobility and social integration will become important.

Equally important will be to make sure that the framework is more visible to European citizens. We can already observe significant progress in that area: 23 countries have introduced the NQF and EQF levels in national qualifications documents or Europass supplements, while 17 have included levels in their national qualifications databases.

ANNIVERSARY CONFERENCE

On 15 and 16 March, Cedefop contributed substantially to the conference organised by the

European Commission in Brussels to celebrate the EQF’s 10th anniversary. Cedefop expert Jens Bjørnåvold presented the agency’s work on monitoring NQF developments since 2009 and reflected on the perspectives of EQF/NQF developments on the way ahead.

Cedefop Director James Calleja participated in a panel discussion on how the EQF can improve understanding of qualifications in the labour market and support the understanding of labour market needs. According to Mr Calleja, developments show that qualifications frameworks have truly served as catalysts for changes in education systems, in improving the image of vocational education and training (VET) and in bridging the divide between VET and higher education. Learners and workers, as well as employers, are the key beneficiaries of this process. In the long term, Europe’s education landscape will be enriched by qualifications frameworks that support access, mobility and permeability. ■

EQF referencing reports



More on the EQF anniversary conference



Are we prepared for the future of work?

“ *The 4th industrial revolution is already disrupting production processes, the world of work and society at large*

Forecasts suggest that nearly half of jobs in advanced economies may be automated out of existence, due to the proliferation of digitalisation, robotisation and artificial intelligence (AI). It is no surprise that people are concerned about losing their jobs to technology, or worried that they will be unable to sustain their employment in the new digital age. The 4th industrial revolution is already disrupting production processes, the world of work and society at large.

Cedefop's European skills and jobs (ESJ) survey found that 43% of adult employees across the 28 EU Member States saw the technologies they use change in the past five years, including the introduction of new machines and ICT systems at their workplace; 47% saw changes in their working methods or practices. But, even though most EU citizens acknowledge that robots and AI can play a crucial role in improving their own jobs as well as societies, a 2017 Eurobarometer survey

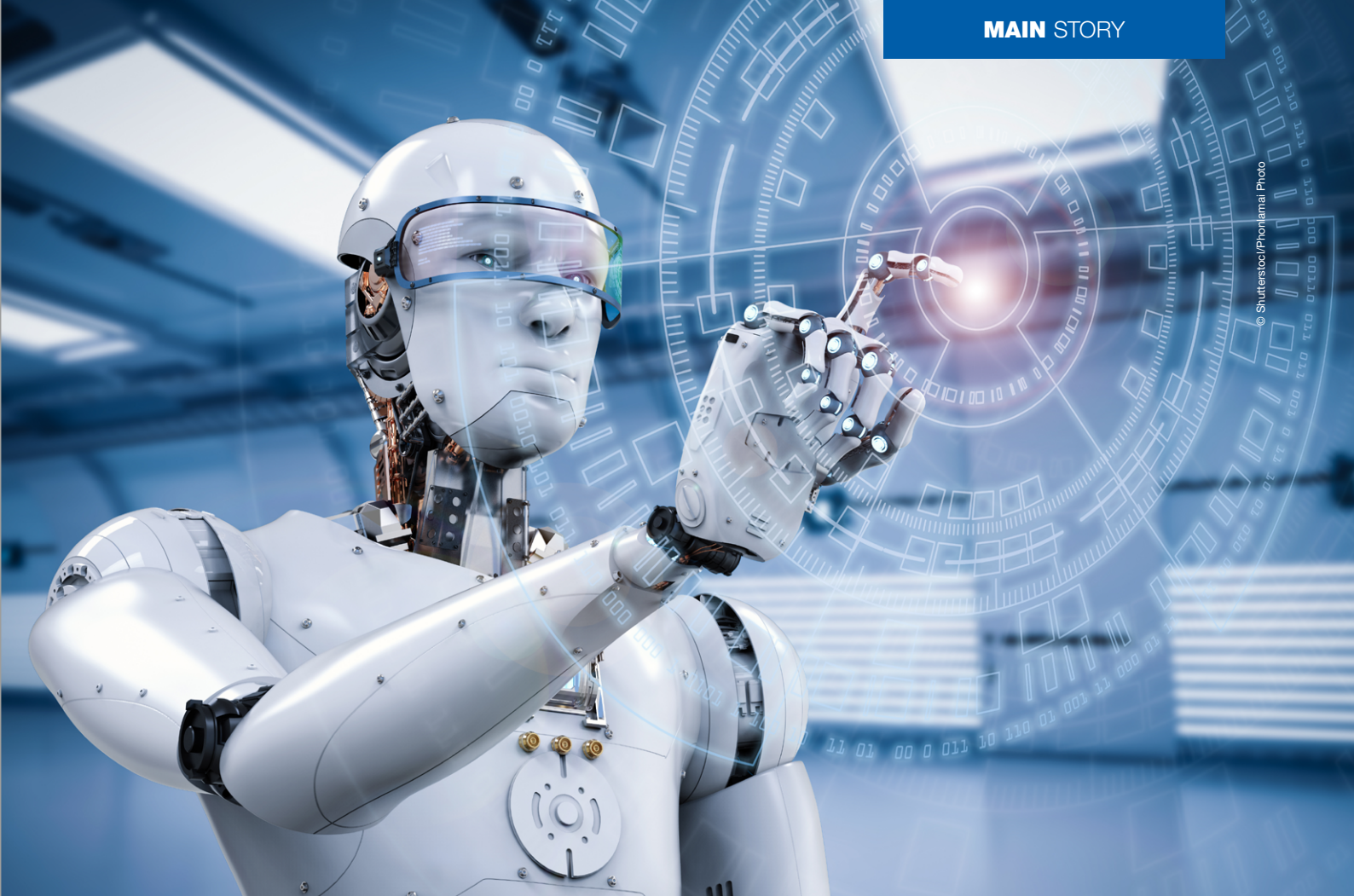
revealed that 72% agree that such technological advances may 'steal people's jobs'.

Such a bleak picture of the future of work due to the onset of industry 4.0 technologies is not entirely unfounded. As innovations (such as 3D printing and autonomous vehicles) and digital capabilities (such as machine learning, big data, and AI) are now becoming increasingly developed, ingrained and disruptive of traditional production and socioeconomic processes, it is clear that many occupations are likely to become extinct and most jobs transformed. As early as 2013 it was forecast that up to 47% of jobs in the US and 54% in the EU-28 are at risk of automation.

Many technological 'alarmists' would point out the significant differences between the current and previous industrial revolutions. Innovation cycles have become faster. Firms can now engage in rapid product prototyping and marketing. Organisations may be less

dependent on a core workforce as they can tap into the power of the crowd and of digital (platform) labour.

The digital world allows for fast upscaling of 'digital innovators' in new markets. In the past, new technologies would manifest in cheaper and better products that would encourage higher demand from consumers (leading to creation of more employment). However, the link between higher productivity and labour's income share has been severed in most EU countries in recent decades; this implies that, this time round, technological progress may exacerbate wealth inequalities. Crucially, although past technological breakthroughs would tend to replace low-skilled routine work, one of the distinguishing features of AI is that many high-skilled tasks, including in health, legal, finance and education industries, may now be performed faster and more efficiently by algorithms than humans.



NOT ALL DOOM AND GLOOM

Despite such compelling trends, a lot of recent research resists the doomsayers talking of rampant technological unemployment. This research takes into account the fact that most jobs typically comprise of a bundle of tasks, so they cannot be wholly automated. Although a machine or an algorithm may execute some of the most 'codifiable' job tasks, this is not (yet) the case for tasks involving a high degree of problem-solving, creativity and social interaction skills. The OECD and McKinsey studies that account for such variety in job tasks indicate that only around 5-9% of jobs are wholly automatable, although for most occupations (over 60%) a non-trivial portion (about one third) of their tasks may be subject to automation in the near to medium-term future.

EU JOBS AT RISK OF AUTOMATION

Cedefop has recently examined the extent to which the jobs of EU adult workers are potentially 'automatable'. By exploiting the information collected as part of the ESJ survey, we find that close to one third of employees in the 28 EU Member States are in jobs with a mix of tasks and skill requirements that could render them susceptible to automation. In such 'automatable' jobs, workers are more frequently engaged in routine tasks and there is low need for communication, team-working, problem-solving and planning skills, which AI and robotics are less likely to perform as efficiently as humans for many years to come.

What is often not adequately acknowledged in the public debate, though, is that for most organisations the

decision to invest in more capital equipment or digital technologies at the expense of their staff is not an easy one. While some firms in some (manufacturing) industries may enjoy productivity dividends from their decision to invest heavily in capital/digital equipment and lay off personnel, for others the cost-effectiveness of labour (relative to its output) may still justify its continued employment. Many companies that moved fast towards replacing their workforce with machines have tended to discover

Insights into skill shortages and skill mismatch



Cedefop's European skills and jobs survey



that this often comes at a significant cost of losing out on organisation creativity, innovation and employee drive.

Looking to our own ESJ survey data, it is evident that while a third of jobs may appear to be 'automatable' on the surface, many employers continue to take active steps to assist their workers' adaptation to technological changes, most notably by financing their continuing training. Only about 12% of jobs at EU level ultimately face a 'very high' risk of automation; these are jobs where workers perform mostly routine tasks with little need for creativity and social interaction, and employers do not invest at all in their staff's human capital.

HOW PREPARED ARE WE?

The debate on the extent of job destruction due to automation can be imperfect science, involving a high degree of uncertainty and speculation. Most available evidence, however, highlights a need for policies that can shield specific population groups who are most vulnerable to technological unemployment or skills obsolescence. The ESJ survey data identify that lower-



Cedefop's new programme on digitalisation and the future of work aims at providing a more nuanced narrative and informed insight into new opportunities made available by technological advances

educated males, older workers and those employed in non-standard jobs are typically faced with greater automation risk. Overall, sectors and occupations requiring medium- or lower-level skills are more prone to automation, while professional and interpersonal services provision (such as healthcare or education) are relatively insulated.

Another lesson for policy-makers is that individuals in jobs vulnerable to machine substitution tend to be less aware of such risk. ESJ survey data reveal that, on average, 33% of workers employed in automatable jobs recently experienced new technologies at their workplace, in contrast to 48% of those in low-risk jobs. And it is generally individuals less exposed to robots or digital and AI-related technologies who

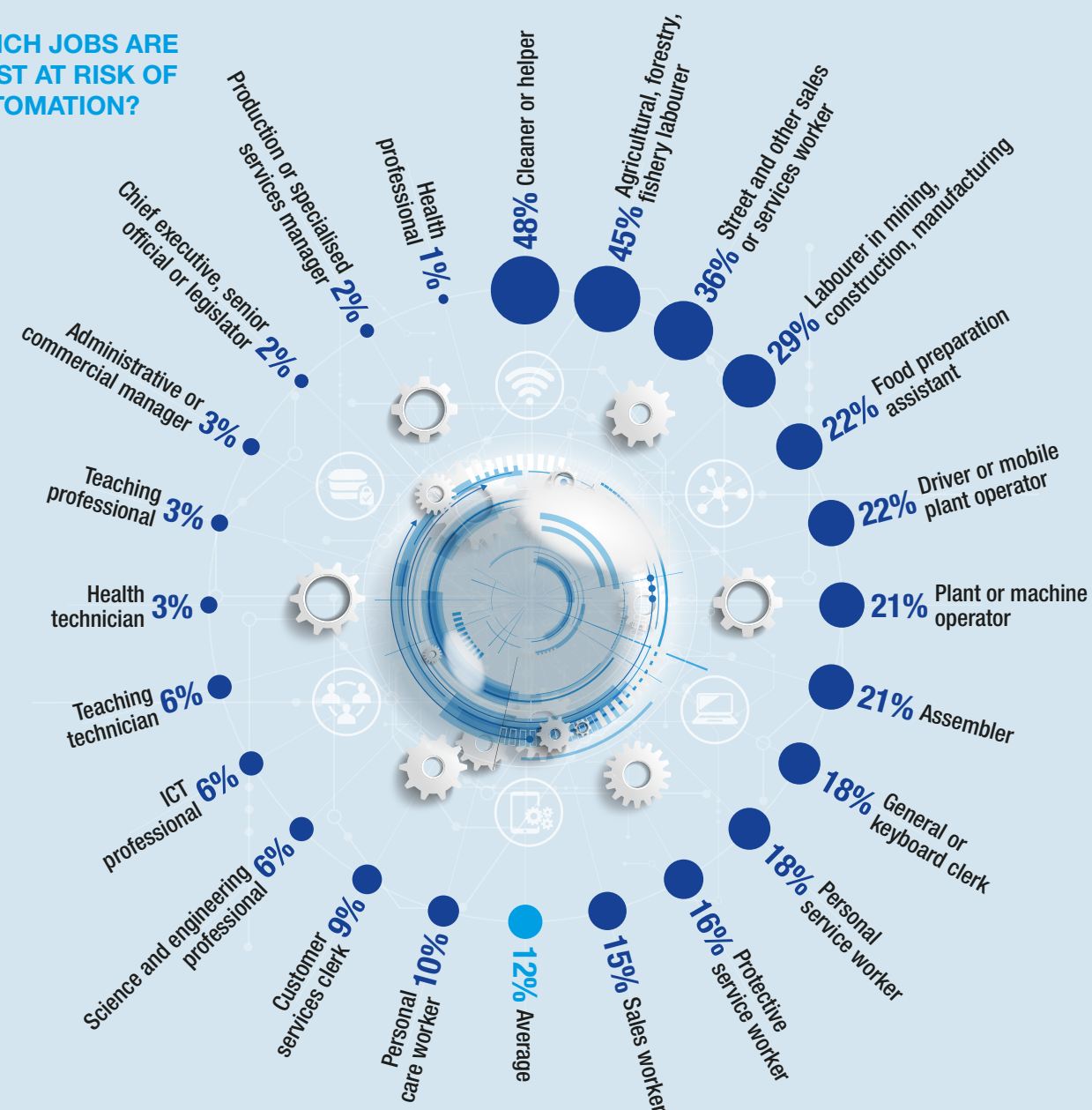
tend to have negative opinions about the 'destructive' nature of technological progress and are less able to adapt to it.

TOWARDS A FUTURE WE WANT

The above findings highlight a key challenge for policy-makers: to ensure that individuals who will soon see their jobs transitioning from a 'semi-analogue to a digital world' can do so with as little disruption as possible. This process will require that they acquire relevant skills, are offered an adequate welfare safety net, and exhibit a high degree of adaptability that will allow them to remain employable in future job markets. Modernising education systems and lifelong learning so that training programmes focus more heavily on key competences and soft skills, including the four Cs – communication, collaboration, creativity and critical thinking – is a crucial parameter of the equation.

Ensuring that we converge to a future we want will also require that EU stakeholders build high-quality skills anticipation systems to prepare for emerging jobs and in-demand skills. Harnessing the power of digitalisation for making better policy decisions, such as by extraction of real-time data on emerging jobs and in-demand skills, is another key input to the process. However, policy-makers must put safeguards in place

WHICH JOBS ARE MOST AT RISK OF AUTOMATION?



so that there is adequate trust, transparency and governance in the interpretation and use of AI-generated intelligence in policy decisions.

With many advanced economies fundamentally struggling with low productivity, the advancement of digitalisation and AI holds significant promise for expanding efficiencies in a wide range of occupations, and for new economic activities or markets emerging. But the move towards a desirable future of work, such as a post-work or full employment society instead of polarised labour markets, cannot

rely only on more or better (re)skilling policies. A whole arsenal of innovation, competition and employment policies will have to be used, together with forward-looking skills strategies, to ensure equitable access for the majority to the benefits and opportunities of digitalisation and automation.

Cedefop's new programme on digitalisation and the future of work aims at providing a more nuanced narrative and informed insight into new opportunities made available by technological advances. It does so by collecting data to inform

policy-makers on how best to mitigate the challenges posed by new technologies. It also seeks to strengthen capacity among EU countries for adopting a skills foresight culture that can feed into better design of vocational education and training policies. ■

CROWDLEARN PROJECT

Online platform work is the world's fastest growing form of employment. In 2017, the amount of work mediated by online platforms grew by 26%. Despite such growth, we know little about how crowd workers acquire and develop their skills. Cedefop's new CrowdLearn project will be carried out by a consortium led by the Oxford Internet Institute during 2018-20. The project will interview crowd and public stakeholders, and will conduct a survey of 1 200 crowd workers in four major online talent platforms to shed light on their skill development practices and effectiveness of matching skills in the 'gig' economy.



Cedefop briefing note: People, machines, robots and skills



New Cedefop project on digitalisation and future of work



OCCUPATION IN FOCUS:

Researchers and engineers

The Skills Panorama web portal, a European Commission initiative managed by Cedefop, turns labour market data into useful, accurate and timely intelligence that helps policy-makers make decisions on skills and jobs in Europe. In this new, regular feature, Skills Panorama will share trends and challenges of the European labour market, starting with an insight into the occupation of researchers and engineers.

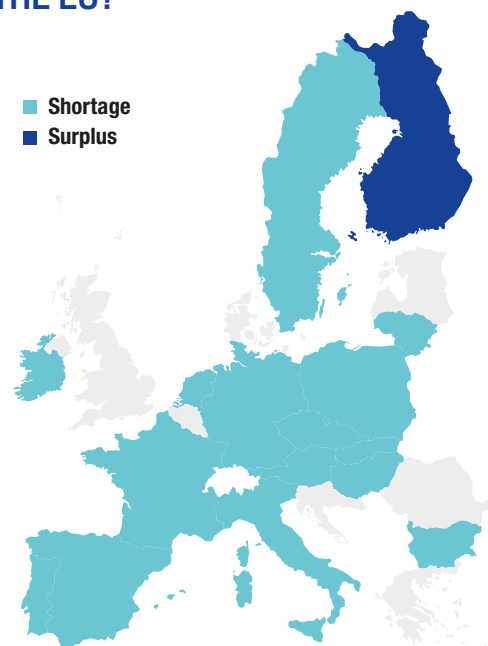
With the ever-increasing pace of technological advancement, researchers and engineers are much in demand in Europe. They represent a broad group of high-skilled jobs, from mechanical engineering to life and physical sciences.

In 2016, there were almost seven million researchers and engineers in the EU, growing rapidly during the last decade.

Researchers and engineers are in short supply in most European Union countries and demand for their skills will grow further. According to Cedefop's forecast, almost five million researchers and engineers will be needed by 2030, most to fill vacant jobs.

Very strong demand is expected in manufacturing due to the adoption of new automation technologies

WHERE ARE THE SHORTAGES OF RESEARCHERS AND ENGINEERS IN THE EU?



NB: Countries in grey did not report any shortages or surpluses

WHAT JOBS DO THEY DO?

- 45% mechanical engineers
- 26% designers and architects
- 14% life, physical and earth scientists
- 13% electrical engineers

RESEARCHERS AND ENGINEERS

- 7 million jobs in the EU (2016)
- Key employment: professional services, manufacturing and construction
- Shortage occupation in many EU countries
- Strong future employment growth
- Almost 5 million needed till 2030, most to replace retirements
- Skills demand quickly evolves with adoption of new technologies

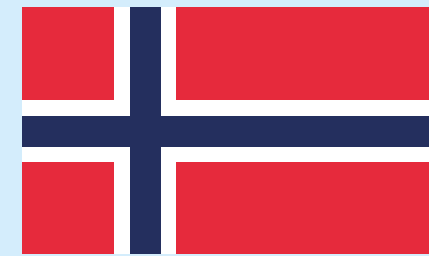
and rising research intensity. Other sectors will contribute to the growing demand, including logistics, security, healthcare, media and financial services.

The emerging technologies bring new dynamics to skills demand. The need for expertise across different areas, such as electronics, mechanical engineering, automation and computing, creates unique interdisciplinary skillsets. ■

Learn more about
researchers and
engineers



More on Cedefop's
skills forecast



2018 Year of VET in



The Ministry of Education and Research has designated 2018 as the year of vocational education and training (VET) in Norway. Norway will need more skilled workers in the years to come; the initiative highlights the possibilities and aims to increase interest in VET.

'The fantastic thing about vocational education is that you can create something with your hands. I think that's pretty unique,' enthuses Head of Department of the Norwegian Centre for International Cooperation in Education (SIU) Siv Andersen.

'When you have an academic education, your knowledge is up here,' she notes pointing to her forehead, 'but with a vocational education, your knowledge is in your hands as well as your head.'

Ms Andersen has a vocational education herself, taking a journeyman's certificate as a hairdresser in 1986. 'The journeyman's certificate was a game changer. It helped make me who I am and gave me a platform from which I have continued to develop,' she says, referring to both her teacher training qualification and the master degree she has started in management.

She finds that many young people are unsure about what they want to do after they have completed lower secondary school: 'Many of those we speak to think that the choice you make as a 16-year-old is what you will go on to do for the rest of your life – but that's not how it is anymore. Most of us do different things in the course of our lives and VET is a door-opener.'

In 2018, the Norwegian government allocated NOK 70 million to ensure apprenticeship placements. If more people are going to be encouraged to choose VET, then more people must gain labour market experience as apprentices.

And, if it was up to Ms Andersen, as many apprentices as possible would spend time abroad to gain an advantage in an increasingly international labour market: 'I went to Copenhagen and to London to learn about the latest hairdressing trends. Now, it's more important than ever to go out into the world: to learn languages, experience other cultures and develop at a personal level.' ■



by REFERNET NORWAY

Weaving a stronger social fabric for Europe

“The Pillar’s 20 principles are to guide employment and social policies – EU-level and national – to help create fairer labour markets and societies

At the social summit last year, the European Parliament, the Council and the Commission proclaimed a European pillar of social rights. ‘A landmark moment for Europe,’ stated Commission President Jean-Claude Juncker, stressing that ‘our Union has always been a social project at heart.’

The Pillar aims to reinforce the social dimension. At the EU’s 60th anniversary, the leaders of the Member States and EU Institutions stated their commitment to ‘a social Europe’.

While the economy is back on track, the scars on Europe’s social fabric inflicted or exacerbated by the crisis will take longer to heal. Global value chains, industry 4.0, digitalisation and crowd work are adding to the challenges. The Pillar’s 20 principles are to guide employment and social policies – EU-level and national – to help create fairer labour markets and societies.

WHAT IS THE PILLAR’S ADDED VALUE?

The Pillar breaks up policy silos. Sustaining economic development requires a strong social fabric. Besides investing in skills and easing labour market participation, this demands fair living and working conditions, access to healthcare and social protection. The Pillar demonstrates that economic, employment, education and training and social policy domains are intertwined: it is an argument for holistic approaches.

The Pillar is an orientation tool backed by a set of statistical indicators, including those on education, employment and poverty. This social

scoreboard serves as a yardstick, used to guide reforms to help narrow disparities and improve social outcomes across the EU. Its data now underpin the Commission’s annual reports on Member States’ economic performance and recommendations on areas for improvement.

HOW CAN IT DELIVER ON ITS PROMISES?

Commission and Council initiatives, and support through EU funds, are not enough. All partners need to act. As President Juncker put it: ‘The Pillar – and Europe’s social dimension as a whole – will only be as strong as we allow it to be. This is a joint responsibility and it starts at national, regional and local levels, with a key role for social partners and civil society’.

HOW DOES IT RELATE TO VET?

In the Treaties of Rome, vocational education and training (VET) was a social policy issue. Today, skills are one of the Pillar’s main threads, as we need to adapt them continuously. It enshrines equal rights to quality and inclusive education, training and lifelong learning. Everyone should be able to gain and maintain the skills to participate in society and manage labour market transitions. Citizens should have the right and opportunity to have their competences assessed and valued, (re)access education and training, and receive tailored guidance and support.

This mirrors the objectives of various EU-level initiatives, particularly the 2016 skills agenda. VET is a strategy to help achieve these goals. The youth guarantee, for instance, largely relies on work-based



learning, specifically apprenticeships, to help young people access jobs or continue their education.

Supporting the skills agenda, a Council recommendation encourages Member States to give low-qualified adults the chance to upskill and acquire qualifications at levels 3 and 4 of the European qualifications framework. Many of these can be obtained through VET.

This recommendation, like those on youth guarantees and measures for the long-term unemployed, proposes to build on skills assessment and validation. The *Upskilling pathways* recommendation also reinforces countries’ work on improving access to VET and qualifications for all, one of the current priority areas within European cooperation on VET.

As one of the Pillar’s main building blocks, the follow-up to this recommendation will be at the centre of attention in 2018. The Advisory Committee on Vocational Training, representing Member State governments and social partners, supports this follow-up.

HOW DOES CEDEFOP SUPPORT THE PILLAR’S PRINCIPLES?

A specific strand of Cedefop’s work is dedicated to VET for labour market integration and social inclusion. Pooling expertise from different activities forms our contribution to the Pillar: our

understanding of low skills and the benefits of investing in skills development; our work on outreach and guidance; and adult learning and validating non-formally acquired competences. Our policy monitoring and the expertise on qualifications frameworks (see pp. 10-11) also contribute to the Pillar. Evidence from Cedefop’s work on skills and change of VET in recent years informs reflections on the future of work and VET, which go hand in hand.

Our web-based VET toolkit offers tips, practice examples and instruments for policy-makers and practitioners to help prevent and remedy early leaving. A policy learning forum held jointly with the European Economic and Social Committee in February highlighted challenges in creating upskilling pathways. It encouraged government authorities, social partners and other civil society organisations to help one another in this endeavour.

In short, Cedefop’s work to inform, help shape and value VET serves the Pillar’s cause. European Commissioner Marianne Thyssen counts on Cedefop ‘to act as an ambassador for the Pillar’. We are committed to this task. ■

More on the European pillar of social rights



A social scoreboard for the European pillar of social rights



Australia seeks real skills for real careers



BY KAREN ANDREWS MP

ASSISTANT MINISTER FOR VOCATIONAL
EDUCATION AND SKILLS

“ *VET's diverse qualifications are delivering skills for workplaces that are constantly evolving and becoming more technologically advanced*

Every year, ambitious students from around the world pack their bags, laptops and notebooks and come to Australia to study and undertake research. And they are coming in large numbers.

Among them are hundreds of thousands of international vocational education and training (VET) students. In the last year alone, there were 213 814 international enrolments in VET up to November 2017, a 16% increase on the previous year. We have also seen enrolments from European students in Australia's VET courses doubling since 2012, reaching 25 616 last year.

These international students join an estimated four million domestic Australian students who are enrolled in training across more than 4 000 training providers. The numbers are a vote of confidence in Australia's world class vocational education

system and the quality of providers on offer here.

SUCCESSFUL PARTNERSHIP

The sector is successful because it operates hand-in-hand with industry, so that students finish their training with skills that employers need. More than 77% of VET graduates were employed after training and more than 80% of employers who use nationally recognised training were satisfied that it provided employees with skills they require for the job.

The qualifications that graduates are getting in our VET sector extend well beyond the traditional trades. The sector is associated with all eight major occupation groups: managers, professionals, technicians and trades workers, community and personal service workers, clerical and administrative workers, sales

workers, machinery operators and drivers, and labourers.

VET's diverse qualifications are delivering skills for workplaces that are constantly evolving and becoming more technologically advanced.

PUBLIC PERCEPTION CHALLENGE

This all paints a good picture but there is one particular challenge that our government is facing and tackling. Public perceptions of VET, in some parts of the community, are out of step with the reality of the sector and its achievements.

In Australia, many parents are still inclined to encourage their children to go to university after leaving school, rather than consider a VET career pathway. Others are convinced that VET is only for traditional trades like plumbing and carpentry.

We are working hard to dispel those myths. My focus as Assistant Minister is on reversing this way of thinking and changing the way we speak about VET, to use a tone of ambition and achievement, and position VET as a personally, professionally and financially rewarding career choice.

So, late last year at the Australian Training Awards, the peak national awards for Australia's VET sector, I launched *Real skills for real careers*; this is the first Australian Government-led communications strategy to implement a long-term, sustained plan of activities to unify and promote the sector. It is helping Australians understand that VET qualifications deliver the skills of today and of the future, which can lead to successful, meaningful, professional jobs, with great salaries and outstanding career prospects.

The strategy includes communication initiatives centred around a united tagline for the VET sector, *Real skills for real careers*, and promotes a collaborative approach by stakeholders, and corporate and community partners,

to elevate the status of this excellent career pathway.

GRASSROOTS STRATEGY

It can take a long time to break down entrenched views, so our approach is a grassroots strategy designed to endure. A short burst of marketing was unlikely to create the desired impact.

We also know that what really cuts through is hearing from people speaking honestly and authentically from their own first-hand experience. So I have teamed up with graduates of the VET sector whose real-life stories and experiences of career success will be at the forefront of the *Real skills for real careers* strategy.

Our internationally recognised Australian apprenticeship ambassadors and Australian VET alumni are sharing their authentic success stories via videos, podcasts, brochures, posters and across social media.

Country girl Jessica Wooley is one of our alumni who is reaping the benefits of VET. She grew up on a farm in South Australia's Kangaroo Island and then chose an apprenticeship

in electrotechnology. During her apprenticeship at a power distribution network, Jessica designed an electronic calculation sheet for transformer ratio tests, which was then integrated into the company's quality system; a fantastic example of initiative and innovation.

Another component of our strategy is a refreshed online resource that will serve as a central information hub for VET consumers, registered training organisations and employers. We have also partnered with sport and community organisations that engage the strategy's target audiences to extend the *Real skills for real careers* message.

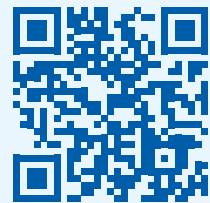
As we continue to implement this strategy, I look forward to seeing a shift in public understanding that this education choice really does deliver real skills for real careers. ■

VET success stories



Central information hub





new

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IN FOCUS

THE CHANGING NATURE AND ROLE OF VOCATIONAL EDUCATION AND TRAINING IN EUROPE – VOLUMES 1 AND 2

A series of research papers is being produced as part of the 2016–18 Cedefop project on the changing nature and role of vocational education and training (VET). The aim of the first paper is to review scholarly attempts to define or explain VET, and to develop a theoretical model to analyse national definitions or conceptions of VET and how these have changed over time. VET takes many forms and is, perhaps, the least unitary of education sectors. These perspectives can help to identify appropriate learning approaches, institutional solutions and forms of cooperation to work towards. In Volume 2 of this series, the approach is empirically tested and the different understandings of VET in 30 European countries are illustrated.



OTHER PUBLICATIONS:

Download the publication you wish
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- Insights into skill shortages and skill mismatch
- Apprenticeship review: Greece
- Apprenticeship review: Italy
- Overview of national qualifications framework developments in Europe 2017
- National qualifications framework developments in Europe 2017
- Briefing note - Improving vocational education and training through data, analyses and exchanges
- Cedefop opinion survey on vocational education and training in Europe
- Skill needs anticipation: systems and approaches
- Spotlight on VET Norway



coming up

For more information on what's coming up
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IN FOCUS

3RD POLICY LEARNING FORUM ON LEARNING OUTCOMES FOR VET QUALIFICATIONS

21–22 JUNE

THESSALONIKI, GREECE



Cedefop is organising a third policy learning forum on defining and writing learning outcomes for vocational education and training (VET) qualifications. The forum will build on the positive outcome of the 2016 event on the same topic, deepening the exchange of experiences between national experts in this area and experts from different parts of the world. The forum provides a platform for European cooperation on the application of learning outcomes allowing for the identification of common challenges and solutions.

OTHER EVENTS

JUNE	7–8	THESSALONIKI, GREECE	CareersNet meeting (Cedefop's network for lifelong guidance and career development)
JUNE	8	BRUSSELS, BELGIUM	Cedefop 2018 skills forecast launch event
JUNE	14–15	THESSALONIKI, GREECE	Cedefop workshop on skills anticipation methods and practices
JUNE	26	BRUSSELS, BELGIUM	Cedefop seminar jointly organised with the Bulgarian EU Presidency: Using labour market and skills intelligence for policy-making
JULY	15	ACROSS EUROPE	#CedefopPhotoAward 2018: entries submitted by 15 July. More info: www.cedefop.europa.eu/cedefopphotoaward


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