



Why it is time to move digital skills to the top of the EU's agenda

Executive summary

As we have pointed out ever since we launched our Manifesto for a Stronger Digital Europe back in 2019, Europe's goals for new investments and measures on digital will fail to materialise unless workforce and society have appropriate digital competencies.¹ Completing the single market on data to fulfil Treaty goals, for instance, requires digitally prepared talents and citizens that take the opportunities policy creates.

Accelerating progress on the Digital Decade skills targets and bridging the digital divide have become a matter of unique urgency. The Commission and Member States must, together, move the discussion on digital skills and education to the highest level of government and reap the knowledge-sharing and efficiency benefits that come from coordination. They must also deepen partnerships with industry to take immediate action by leveraging existing, successful initiatives.

Time is running out. The EU needs to add **1.2 million** ICT specialists to the employment figures every year until 2030 to hit its Digital Decade targets. It similarly needs to make an extra **20%** of the EU's population digitally literate by the same year. These are pressing tasks, especially when today barely more than **50%** of EU citizens can conduct basic tasks like downloading an app or purchasing online, and when EU average figures mask substantial differences in technology access among specific groups.

The political push on the topic should translate into:

- ▶ Launching a new **“Rapid Training Fund”** co-financed by the Recovery and Resilience plans of interested countries. It should focus first on cybersecurity upskilling and train immediately 200,000 cyber security experts (the number of experts Europe lacks today). This is key to fulfil labour market demands.
- ▶ Recognise **existing partnerships as eligible entities to apply or re-apply for EU funding** on digital upskilling or reskilling. There is no need to reinvent the wheel if successful projects already exist and can be ramped up.

¹ Available [here](#)

- ▶▶ Carving out enough **compulsory curricular time** for coding and computational thinking in secondary schools, as Denmark has just done, and make algorithmic thinking a compulsory subject in primary schools.
- ▶▶ Launching **a flagship “Teachers for the Digital Decade” initiative** to develop a standardised digital competences’ qualification programme for teachers and educators at all levels.
- ▶▶ Make **women in ICT mentorship** a key priority in EU-funding programmes such as ERASMUS+ and the Digital Europe Programme.

Below we offer more background on these and other recommendations.

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Why the digital divide obstructs European growth and prosperity

Investing in skills pays off. The net economic benefit of significantly reducing the size of the low-skilled adult population in the EU is estimated at as much as 200 billion € per year over a decade, roughly 1% of the EU's GDP.² And besides the economic aspects, a more digitally savvy society is key for a more secure, greener, healthier Europe too. We are living through times of looming cyber-threats and the need to make the best use of digital tools to increase energy efficiency in Europe.

Laudable EU targets on basic and advanced digital skills by 2030³ must lead to concrete, politically motivated measures today. There are far too many benefits in terms of economies of scale and saving of planning resources that come from Member States' coordination on digitally upskilling. They are difficult to ignore. And in addition, we estimate that a total of **at least 28 billion €** from the overall Recovery and Resilience Facility funding will go into human capital development.⁴

These are ideal political and economic conditions to bridge, now, the digital divide. This is why we call to:

Launch a new "Rapid Training Fund" financed by the national Recovery and Resilience plans of interested Member States. *The Fund should support cross-border tailored training projects for broad-based digital upskilling of Europe's workforce. It should require identified lead institutions, like education or training bodies, to secure **25%** matching funding from one or more industry partners. For a start, it should focus on cybersecurity upskilling and train immediately 200,000 cyber security experts (the number of experts Europe lacks today).*

Funding should be allocated on a competitive basis. After 3 years of operation, the initiative should be reviewed and lead to opening a second funding round to scale up to more geographies those cross-border training programmes that proved most effective.

² CEDEFOP, [Investing in skills pays off: The economic and social cost of low-skilled adults in the EU](#), 2018

³ The Digital Decade sets out to hit a target of 20 million ICT Specialist by 2030, with gender convergence. It also aims to equip with at least basic digital skills 80% of the EU's adult population by 2030.

⁴ Calculated based on figures in the [Review Report on the implementation of the Recovery and Resilience Facility by the European Commission](#)

Recognise existing partnerships as eligible entity for the application to EU calls for projects or tenders focused on digital upskilling or reskilling. *EU funding programmes generally offer financial support to the creation of entirely new skills-related pilot programmes, prototypes for specific applications or proofs of training concepts built from scratch. There should also be attention to ramp up what is already there, and which is successfully working on a small-scale, including thanks to earlier public financing or co-financing received.*

Concept of digital equity

We believe promoting the concept of digital equity is critical to bridge the digital divide. **Digital Equity** has been understood as a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital Equity is necessary for civic and cultural participation, employment, lifelong learning, upskilling and reskilling strategies, and access to essential services, not least access to digitally powered healthcare.⁵

Digital infrastructure is a key pillar of digital equity. So is digital literacy, which can be promoted through various activities, such as broad-based awareness-raising campaigns aimed at all stakeholders, policy makers, business actors and citizens included. Digital literacy is an essential step to enable cross-discipline literacies that are key in the anticipation of global jobs disruption and digital transformation in all economic sectors (manufacturing, healthcare, etc.)

Below we outline the main dimensions of the digital divide in Europe today, and how to address each of them.

Geographical divide

In Finland and the Netherlands, almost 80% of the population possess at least basic digital skills, close to the EU-wide Digital Compass target for 2030. That is more than the double the figure in Romania and Bulgaria.

A geographical divide is also evident on advanced digital skills. At least 1 in 15 workers in Sweden, Finland and the Netherlands is employed as an ICT specialist. In Bulgaria, Poland and Romania, it is just 1 in every 30 workers.

Tackling gaps in the national education and training curricula is fundamental to bridge this gap. Coordination on this topic at European level can save planning

⁵ See reference [here](#)

resources to Member States and national authorities, without prejudice to national competences on education policy.

Indeed, digital skills are key for the EU digital goals, including the further completion of the internal market for data to fulfil the objectives under TFEU Article 114.

We recommend to focus on:

▶▶ ***Compulsory curricular time for digital topics:***

- Coding and computational thinking should get enough compulsory curricular time in all secondary schools
- Algorithmic thinking should be embedded into the compulsory curricula of all primary schools in the EU
- The Commission should explore monetary reward and incentive schemes for those Member States that make their curricula digital proof

▶▶ ***Cybersecurity upskilling:*** the EU should urgently launch a multi-Country Project building on the political commitments in the Path to the digital decade policy programme and the Pact for Skills for the Digital Ecosystem. It should map capabilities across EU countries, identify common gaps in areas like penetration testing, security awareness, compliance, and launch a public-private, EU-wide partnership making training resources available to the public. As a start, the partnership should first upskill SMEs in critical sectors for the EU's resilience. There are clear benefits in bolstering the collective cybersecurity capabilities of Europe. Cyber-threats know no borders and talent is scarce.

▶▶ ***Technology use guidelines:*** the Commission should consider the possibility of issuing guidance to clarify the circumstances for the use of digital technology in teaching-learning scenarios. The European Data Protection Board should also consider guidelines to clarify the further processing of personal data generated in the educational context.

Urban/Rural divide

62% of residents in EU cities have basic digital skills as opposed to 48% of those living in rural areas.⁶ This divide correlates strongly to a "rural connectivity

⁶ European Commission, [EU rural areas in numbers](#)

penalty’’: only 60% of EU rural households have high-speed internet access compared to the EU’s total average of 86%.⁷ The same connectivity divide is present in the educational context. Only 8% of students in schools in villages or small towns are able to access high-speed internet as opposed to 18.5% of their peers in large cities’ schools.⁸ Boosting these numbers would pay significant dividends. For every 10% increase in school connectivity in a country, GDP per capita could increase by 1.1%.⁹

We recommend consideration of:

- ▶ ***Volunteering ICT experts as extra training resource:*** the EU should launch new public-private partnerships where ICT experts in technology firms volunteer to train individuals in rural communities. The focus should be on increasing the reach and breadth of a basic upskilling drive, particularly among the underserved. And since digital technologies are increasingly important determinants of health,¹⁰ these public-private partnerships should also target vulnerable communities in such areas, like the elderly and patients suffering from chronic disease. Improving digital literacy can also enable programmes targeted at prevention. Some firms already offer volunteering allowances to their employees (1-3 days a year) undertaking this type of activities. Local authorities in rural areas could reimburse travel and equipment expenses for digital SMEs engaged in the partnership.
- ▶ ***License-free Massive Open Online Courses (MOOCs):*** public or government institutions should accelerate the development of such MOOCs through EU Recovery Fund’s support. MOOCs have the advantages of low-threshold and unbiased access to learning thanks to their universal, free-for-all access. Supporting the introduction of license-free MOOCs helps making higher education a public good.¹¹
- ▶ ***Placing network investment, including in rural areas, at the top of policy and regulatory action:*** the singular focus on low prices has come at a cost for European competitiveness and the rollout of high-speed connectivity. In tackling that, DIGITALEUROPE has called for a new Connectivity Act in Europe to rebalance policy towards promoting investment in networks. If policy-makers want the best networks, they

⁷ European Commission, [Connectivity: key to revitalising rural areas](#), 2021

⁸ European Commission, [2nd Survey of Schools: ICT in Education](#), 2019

⁹ Economist Intelligence Unit, [Connecting schools has the potential to boost GDP by up to 20 percent in the least connected nations](#), 2021

¹⁰ The Lancet Commissions, [The Lancet and Financial Times Commission on governing health futures 2030: growing up in a digital world](#), 2021

¹¹ For example, the University Lübeck (on campus), the Hamburg- Open Online University (HOOU) in Germany or the University Delft in the Netherlands developed cost-free, open MOOCs with the intention to make relevant upskilling accessible for everyone.

must understand that they might come at a cost, rather than solely taking pride in the fact they are very cheap.¹²

Gender divide

Women represent just 19% of ICT specialists and about only 30% of STEM graduates in the EU.¹³ Better integrating them into the ICT job market would help Europe's economy and create a more inclusive technology industry and a more inclusive society in turn. And from an economic standpoint, improvements to gender equality would generate up to 10.5 million additional jobs by 2050. GDP per capita could increase up to nearly 10% by the same date.¹⁴

Our experience in running EU-wide initiatives so far suggest policy-makers to:

- ▶ **Focus on end-to-end mentoring programmes:** ERASMUS+ and the Digital Europe Programme should bolster focus on the joint development of common mentoring guidelines by industry and educators. Mentoring emerged as a success factor in ensuring 70% of the women trained by DIGITALEUROPE's Women4IT project gained full-time employment in the digital sector within 3 months.¹⁵ Improving knowledge is just a part of the story. Mentoring offers support in building women's confidence in pursuing a career in a sector with female under-representation like the digital sector. It is also crucial in ensuring that women from more disadvantaged backgrounds are supported enough / feel empowered to complete their training.

Generational divide

Young adults (aged 16-24) and students are overwhelmingly represented in the share of EU population with at least basic digital skills. Only 33% of those aged 55-74 possess such competences.¹⁶

We strongly recommend to promote:

¹² For more info on connecting rural areas, read our publication on [A new Connectivity Act for the Digital Decade](#)

¹³ European Commission, [Women in Digital Scoreboard 2021](#)

¹⁴ EIGE, [Economic case for gender equality in the EU](#)

¹⁵ More on the project [here](#)

¹⁶ Eurostat, [Do young people in the EU have digital skills?](#), 2021

- ▶▶ **Continuous teacher training:** upgrading the digital knowledge and competences of teachers and vocational trainers and allow them to make a greater use of digital tools in their everyday teaching are a pre-condition to succeed on digitalisation. The Commission should launch a flagship “Teachers for the Digital Decade” initiative involving all Directors General of the Ministries of Education and Training in the EU to signal political commitment to this topic. The goal would be to develop a quickly deployable, standardised qualification programme to upgrade the digital competences of teachers and educators at all educational levels.

Accessibility divide

Technology is needed to ensure students with special needs are on an equal footing to their peers.

The EU must consistently uphold that technology procured in education provides accessibility features which make learning accessible to all, no matter the persons learning style or need. Accessibility must be a factor in education if the EU is to create truly inclusive education and ensure that no one is left behind. Policymakers should therefore focus on:

- ▶▶ **Accessibility standards:** advancing such standards in public procurement lead to the deployment of accessible ICT in schools.
- ▶▶ **Awareness-raising:** more is needed to promote the role of accessible technologies to educational authorities. Few head teachers and others responsible for technology procurement are aware today of the availability of such solutions and the corresponding standards.
- ▶▶ **Increasing EU investments** in accessible learning environments.

Examples of initiatives to bridge the digital divide

Contributing member	Accenture
Title	Skills to Succeed Academy
Geographical scope	EU-wide
Relevant area	<ol style="list-style-type: none"> 1. Workers 2. Citizens 3. Teachers 4. ICT specialists
Description	<p>Initially launched in the UK in 2013 to help tackle youth unemployment, and later across key markets globally, Accenture's Skills to Succeed Academy offers free, online, bitesize, interactive modules to pick and choose from, preparing jobseekers to choose the right career and enhance employability, and help individuals at all levels to develop skills that are critical for success in the workforce.</p> <p>Recently, a plethora of modules were added to eight new skill areas - including for example lifelong learning; thinking critically; exploring coding, and discovering data - that individuals can learn at any age and refine over time. These skills are meant to be fostered and reinforced both inside and outside of formal learning environments. The training program includes a variety of learning formats such as interactive online learning modules and exercises which allow for self-directed learning. Additional materials are available to facilitate instructor-led discussions.</p> <p>The S2S academy is complemented by Accenture's Digital Skills initiative, free interactive series of courses – in AI, web analytics, social media, digital marketing, UX design - designed by digital experts offered through FutureLearn, which help improve people's knowledge and understanding of digital, and refine their overall digital skillset.</p>
Links, sources if applicable	<p>S2S Academy</p> <p>Accenture Grow your Digital Skills</p>

Contributing member	Accenture
Title	The Refugee Talent Hub (RTH)
Geographical scope	The Netherlands
Relevant area	1. Citizens (Refugees)
Description	<p>The Refugee Talent Hub (RTH), launched in 2015 by a team of Dutch Accenture employees with half of them having a refugee background, aims to close the gap between talented, job-seeking refugees and Dutch organizations looking for new employees. Its mission is to empower refugee talents to grow their network, advance skills and find employment.</p> <p>One of the strengths of the RTH organization is the fact that they look at the potential from the employers' perspective. Instead of simply training refugee talents in new skills that "might be convenient" and that "will hopefully get them a job one day", they look at the specific needs of prospective employers. Is a company active on the hunt for new Java developers? Great, then the RTH can look into their database to see who fits the criteria of developer experience—or who has a willingness to learn—and train 20 refugee talents to become new Java developers.</p> <p>As of the end of August 2021, more than 120 Accenture people served as mentors. Last year, it was estimated that 940 refugees were reskilled through RTH. Additionally, Accenture Netherlands has made a pledge to welcome and hire 100 new colleagues with a refugee background by 2025 into the workforce.</p>
Links, sources if applicable	Refugee Talent Hub

Contributing member	Amazon Web Services
Title	re/Start - Helping People Launch Careers in the AWS Cloud.
Geographical scope	EU-wide
Target group	<ol style="list-style-type: none"> 1. Citizens 2. Workers
Description	It is a full-time, classroom-based skills development and training program that prepares individuals for careers in the cloud and connects them to potential employers. A technology background is not required to

	<p>apply and the program is focused on unemployed or underemployed individuals, including military veterans and their families, and young people.</p> <p>Through real-world, scenario-based learning, labs, and coursework, learners gain the skills they need for an entry-level cloud role. AWS re/Start also provides learners with resume and interview coaching to prepare for employer meetings and interviews.</p>
Links to more info	https://aws.amazon.com/training/restart/

Contributing member	Apple
Title	Apple Foundation Programs to teach coding to underrepresented groups
Geographical scope	EU-wide
Relevant area	<ol style="list-style-type: none"> 1. Citizens 2. Workers
Description	<p>The Apple Foundation Program was launched by Apple in 2019 with French social enterprise and vocational school Simplon, to train job seekers in coding for free.</p> <p>The four-week training program was designed by Apple engineers and experts in Education, to promote technology skills and boost employability through learning to code and app development.</p> <p>It is open to anyone registered as a job seeker and is intended primarily for audiences that are underrepresented in tech: women, non-graduates, people from priority neighbourhoods or rural areas, and people undergoing retraining.</p> <p>Apple's partnership with Simplon provides support for teacher training, funds to hire additional staff, and access to Macs, iPhones, and iPads for all learners in the program.</p> <p>Initially launched in Montreuil, the Apple Foundation Program has since reached more than 1 600 students, expanding to Lille, Lyon, Marseille, and Toulouse.</p>

Links, sources if applicable	Apple Foundation Program with Simplon - https://simplon.co/foundation/
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Contributing member	Apple
Title	Apple Developer Academy to empower aspiring developers and address societal challenges
Geographical scope	EU-wide
Relevant area	<ol style="list-style-type: none"> 1. Citizens 2. Workers
Description	<p>In 2016, Apple opened its Naples Developer Academy, in collaboration with the University of Naples Federico II, where students undertake a 9-month training program for free.</p> <p>The curriculum covers coding, design and marketing,, preparing students with the full suite of skills needed to participate in the iOS app economy and even start their own businesses. In 5 years of activity, nearly 2 000 young people from around 30 countries have been trained.</p> <p>As part of the Naples programme, Apple offers a full-time continuing education opportunity for academy graduates called the Pier. Students are paired with private and public sector organisations to address societal challenges, such as the digital divide, through app development. Examples include working with the Voluntary Service Overseas to design an app that can help manage over 6,000 iPad devices spread across more than 150 schools in Malawi; partnering with the regional government in Campania, Italy, to make it easier for local entrepreneurs to apply for grant funding; and collaborating with Centro Spazio Vita Niguarda, a disability services organization in Milan, to make it easier for medical professionals and staff to communicate with their high-needs patients as they recover from severe trauma.</p> <p>Another 3,000 students have gone through four-week Foundation courses offered in partnership with several universities and non-profits across the country. The introductory Foundation courses promote technology skills and boost employability through learning to code and app development. They also provide a stepping-stone for further opportunities in the industry or at the academy.</p>

Links, sources if applicable	<p>Naples Developer Academy - https://www.developeracademy.unina.it/en/</p> <p>Expansion of Naples Developer Academy (2021) - https://www.apple.com/ne/newsroom/2021/09/apple-expands-naples-developer-academy-creating-new-opportunities-for-european-entrepreneurs/</p>
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Contributing member	Belgian National Coalition Digital Skills
Title	DigiSkills Belgium
Geographical scope	Belgium (linked to EU platform)
Relevant area	<ol style="list-style-type: none"> 1. Workers 2. Citizens
Description	<p>DigiSkills Belgium aims to create an ecosystem of existing initiatives and trainings for all Belgian citizens wanting to step into today & tomorrow's digital society. Powered by the Belgian National Coalition for Digital Skills & Jobs, DigiSkills Belgium intends to reduce the digital skills gap on a national level.</p> <p>Tackling the rising demand for digital skills in today's society is no easy feat. DigiSkills Belgium was created to offer a sustainable answer to the increasing digitalisation of society. Referring to the recently updated BeTheChange study by Agoria, this will have a major impact on the way we live, the way we learn and the way we work.</p> <ul style="list-style-type: none"> • Informing: Boasting a large inventory of training initiatives and organisations in the field of digital skills and increasing their visibility across Belgium. • Activating: Supporting employees, jobseekers and students looking to skill/reskill/upskill and to adapt their skills and work experience in order to match new digital requirements. Moreover, we'll be promoting lifelong learning and increased employability prospects for all citizens. • Facilitating: Facilitating access to funding for initiatives & actions and enabling business to ensure the development of their activities in the future.

	<ul style="list-style-type: none"> Inspiring: The ultimate goal of DigiSkills Belgium is to help all citizens and organisations in defining their path to digital transformation by providing inspirational information & best practices, with special focus on e-inclusion for all. <p>Currently, more than 350 initiatives are active on the platform and it is growing everyday.</p>
Links, sources if applicable	<p>DigiSkills & Jobs Platform (digiskillsbelgium.be)</p> <p>Home Digital Skills and Jobs Platform (europa.eu)</p>

Contributing member	Bosch
Title	Enabling Factory of the Future
Geographical scope	Germany
Relevant area	1. Workers
Description	<p>As part of a large Enabling Project for the Factory of the Future (Cross-functional Enabling Industry 4.0), Bosch has established the Project "The LearningLocation: Together into digital future". Within the project, Bosch together with the works council has introduced qualification content for digital competencies for direct associates. The initiative comprises around 360 different learning offerings on digitalization and I4.0 (apps, videos, online seminars, traditional on-site training).</p> <p>Conducted qualifications so far mainly focus on classic technological capabilities (Digital work processes, Manufacturing & Logistics), digital special competencies (I4.0: Handling of data, software & robotics, SAP etc.) and interdisciplinary core competencies (Lifelong learning, leadership, collaboration) as well as basic digital capabilities (careful handling of digital personal data, use of common software, interaction with AI, etc.).</p> <p>Furthermore, role profiles specially developed for I4.0 are currently being introduced in plants worldwide, new certificate courses have been created (e.g. "Industrial Manager Digital Transformation").</p>
Links, sources if applicable	

Contributing member	Dassault Systèmes
Title	3DEXPERIENCE Edu Centers of Excellence
Geographical scope	EU-wide
Target group	<ol style="list-style-type: none"> 1. Trainers / Teachers 2. Workers
Description	<p>A new global program powered by Dassault Systèmes, the “3DEXPERIENCE Edu Centers of Excellence”, is designed to accelerate experiential lifelong learning for the industry renaissance. It provides businesses and governments with a network of centers with the expertise to develop the 3DEXPERIENCE expertise needed for the digital transformation of various types of businesses in manufacturing, infrastructure and life sciences. Since the program announcement in fall 2021 with its first five members, six new institutions joined the program:</p> <ol style="list-style-type: none"> 1. L’Industreet, a technical college operated by the Total Foundation to provide school dropouts with grades in the field of Industry 4.0, in France 2. ZHAW, a university of Applied Sciences in Switzerland 3. Trier University of Applied Sciences, Germany.
Links, sources if applicable	https://edu.3ds.com/en/edu-centers

Contributing DIGITALEUROPE’s member	EY
Title	EY Tech MBA Program and EY Building Better Working World Data Challenge 2022
Geographical scope	EU-wide
Target group	<ol style="list-style-type: none"> 3. Citizens 4. Workers
Description	<p>The program consists of a fully accredited corporate MBA that is available to all 300,000-plus EY employees, regardless of role or position. The MBA builds on EY Badges, through which EY employees can earn digital credentials in future-focused skills by learning and applying their learning in practice.</p>

	<p>To earn the MBA, people must complete 16 badges spanning technology, leadership, and business topics as well as three pillar papers and a final capstone project.</p> <p>The technology pillar in particular focuses on emerging and adaptive technologies like Blockchain, Artificial Intelligence, Cybersecurity or Robotic Processes.</p> <p>The added value of this learning approach is that organisations can easily scale up training to a broad target group training, thanks to digital credentials</p> <p>Another example can be seen in EY's ambitions to leverage Microsoft Community Training digital skilling resources to help young people and underserved groups identify and prepare for job opportunities in the green economy. Microsoft has also joined the EY Building Better Working World Data Challenge 2022, providing learning content and training to students and early career professionals participating in the challenge, which requires the use of artificial intelligence and data to help locate and protect biodiversity. Participants of this open gamification challenge will improve their skills in Python for data science, machine learning and managing large volumes of data.</p>
Links to more info	<p>EY Tech MBA by Hult EY - Global</p> <p>EY and Microsoft expand relationship to align corporate responsibility programs to provide initiatives that remove barriers to employment EY - Global</p>

Contributing member	EY
Title	New school subject "Digital World" will be piloted in Hessen, Germany
Geographical scope	Germany
Target group	<ol style="list-style-type: none"> 1. Citizens 2. Workers
Description	<p>The pilot project will start after in Q3 2022 at twelve German schools in Hesse, Germany.</p> <p>This new combined school subject will deal with three subjects' areas under the name "Digital World": computer science, economic and ecology.</p>

	<p>More than 1,000 students will learn what opportunities digital applications offer them and how they can be used.</p> <p>The subject "Digital World" combines basic IT skills with economic and ecological education, which are both becoming increasingly important in professional life.</p> <p>The two additional school hours per week are voluntary. They will cover topics like computer science basics such as programming or the functioning of algorithms, data protection, cybercrime, and responsible media use.</p> <p>The Hasso Plattner Institute (HPI) in Potsdam and the Goethe University in Frankfurt are cooperation partners in this project.</p>
Links, sources if applicable	Hessen startet neues Schulfach „Digitale Welt“ kultus.hessen.de

Contributing member	EY
Title	Federal Government Germany "Digital Education" Initiative
Geographical scope	Germany
Target group	<ol style="list-style-type: none"> 1. Citizens 2. Workers
Description	<p>This initiative aims to improve learning, teaching, and training throughout the entire educational path so that all generations can move confidently in the digital world.</p> <p>The goal is not only to improve the necessary digital infrastructures, but also promote the development of digital learning tools.</p> <p>There are various actions under the umbrella of the "Digital Education" Initiative to equip teachers in schools, universities and further institutions with skills and concepts for digital teaching. They include:</p> <ul style="list-style-type: none"> - "Qualification Initiative Digital Change Q 4.0": it promotes the development and testing of tailor-made qualifications for teachers since 2019. The focus is on media pedagogical knowledge as well as specialist and social skills in order to tailor the content and processes of the German dual training vocational system to the peculiarities of digital transformation.

	<ul style="list-style-type: none"> - "Quality Offensive for Teacher Education": the federal and state governments in Germany are planning to jointly achieve a sustainable improvement for the entire process of teacher training up to the professional entry phase and further education. Since 2020, this has been expanded with an additional funding line to include the focus on "digitisation".
Links, sources if applicable	Alle Informationen zum digitalen Lehren und Lernen - BMBF

Contributing member	HP inc
Title	HP Online Teaching Assistant
Geographical scope	EU-wide
Target group	1. Trainers/ teachers
Description	<p>HP's online teaching assistant aims to empower and support teachers with remote teaching and learning skills, inspiring content, and creative ideas to boost student academic productivity on a hybrid learning environment. The website is free, no need for registrations and it's been created by teachers (HP ambassadors) for teachers.</p> <p>There are 38 modules available in 5 categories (Prepare, communicate, engage, assess and innovate) and ready in 7 languages.</p>
Links, sources if applicable	<p>English: https://www.hp.com/us-en/online-teacher-assistant.html</p> <p>Spanish: https://www.hp.com/es-es/online-teacher-assistant.html</p> <p>French: https://www.hp.com/fr-fr/online-teacher-assistant.html</p> <p>German: https://www.hp.com/de-de/online-teacher-assistant.html</p>

Contributing member	Microsoft
Title	Microsoft Dream Space
Geographical scope	Member States (Ireland, since 2018 ; Bulgaria commencing in Oct 2022)
Target group	<ol style="list-style-type: none"> 1. Citizens (Young people aged 5-18 years old) 2. Trainers/teachers

Description	<p>Microsoft Dream Space is a dedicated innovation and education hub that engages students across primary and post-primary education (or K-12) in digital skills experiences. At that time of launching Dream Space, Microsoft Ireland invested €5M in the space and delivery of the project and committed to engaging 100,000 primary (aged 8-12) and post-primary (aged 12-18) students and their teachers in Dream Space over a four-year period.</p> <p>Since its launch:</p> <ul style="list-style-type: none"> • Over 130,000 students have engaged in the STEM experience. • Over 5,000 teachers have been impacted as a result . • 40,000 in person sessions have been run at Dream Space. • During Covid, over 80,000 students have participated in a virtual Dream Space session. • In 2019 Microsoft Ireland invested £1m in the creation of Dream Space at W5, Belfast's award-winning science and discovery centre. <p>With research conducted in 2019 by Maynooth University, there was a 42% increase in the likelihood of girls wanting to pursue STEM after their Dream Space experience, resulting in a 30% increase in STEM career aspirations.</p>
Links, sources if applicable	<p>https://dreamspace.ie</p> <p>Dream Space Research Paper Example: IEEE 2020 Best Paper:</p> <p>Ireland's Future Is MINE (rte.ie)</p>

Contributing member	Microsoft
Title	Global Skilling Initiative
Geographical scope	EU-wide
Target group	1. Citizens
Description	<p>In 2020, Microsoft launched a global skills initiative aimed at bringing more digital skills to people worldwide. As emerged with the pandemic, one of the key steps needed to foster a safe and successful economic recovery is expanded access to the digital skills needed to fill new jobs.</p> <p>The initiative has been grounded in three areas of activity:</p> <ol style="list-style-type: none"> 1. The use of data to identify in-demand jobs and the skills needed to fill them;

	<ol style="list-style-type: none"> 2. Free access to learning paths and content to help people develop the skills these positions require; 3. Low-cost certifications and free job-seeking tools to help people who develop these skills pursue new jobs.
Links, sources if applicable	https://news.microsoft.com/skills/

Contributing member	Microsoft
Title	AI School by Simplon
Geographical scope	France
Target group	<ol style="list-style-type: none"> 1. Citizens 2. Workers
Description	<p>In 2018, Microsoft created an alternative school in partnership with the social and solidarity enterprise Simplon.co: The Microsoft By Simplon AI School. The project aims to meet the need for new skills, with a desire for diversity and inclusion and the has evolved into a strong network of 24 schools in 10 French regions. Until now, over 700 learners, all with different profiles, have been trained, the goal is to train 1000 learners together at the end of 2022.</p> <p>Certifications that can be obtained:</p> <ul style="list-style-type: none"> • The professional title (RNCP certification) Artificial Intelligence Developer level 6 (former level II). • A certification in Agile project management and bootstrapping. • A Microsoft certification Designing and Implementing a Data Science Solution on Azure. <p>84.4% of AI School learners have found a positive outcome to their training, whether it is an open-ended contract, a fixed-term contract, a business creation project or a return to school.</p>
Links, sources if applicable	https://simplon.co/formation/ecole-ia-microsoft/23

Contributing member	Numeum
Title	Numeric Emploi
Geographical scope	France

Target group	1. Citizens
Description	<p>The initiative was co-launched in 2019 by Numeum and France's government employment agency.</p> <p>It focuses on the Grand Est administrative region in France and aims to bring back to work long-term unemployed individuals in the region through tailored support to their needs.</p> <p>So far, the initiative has re-employed about 80% of all citizens targeted. Thanks to the success of its model, two other regions in France decided to join the initiative in 2022.</p>
Links, sources if applicable	https://numeric-emploi.org/

Contributing member	NVIDIA
Title	AI in Emerging Markets GPU Technical Conference Sessions
Geographical scope	EU-wide
Target group	1. ICT-Specialists
Description	<p>NVIDIA is working actively to close the geographic skills gap in areas of AI, data science, accelerated computing, and more. One such effort is adding a dedicated track at its GPU Technical Conference (GTC) for emerging markets. The last GTC attracted a record >20.000 developers from emerging markets from 95 countries. Not only were emerging markets represented in the participants; they were also leading the discussions. Dozens of startup founders from emerging markets shared their innovations. Community leaders, major tech companies and nonprofits discussed their work to build resources for developers in these markets. And hands-on labs, training and networking sessions offered opportunities for attendees to boost their skills and ask questions of AI experts.</p> <p>While in-person AI conferences typically draw attendees from around the world, these opportunities aren't equally accessible to developers from every region. By making GTC virtual and free to register, they were able to welcome thousands of attendees and presenters from countries that otherwise would not be able to participate.</p>
Links, sources if applicable	<p>GPU Technical Conference</p> <p>AI Gone Global: Why 20,000+ Developers from Emerging Markets Signed Up for GTC</p>

	AI in Emerging Markets Conference Sessions Finding Your True Voice AI: Breaking Language Barriers with Natural Language Processing
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Contributing member	RELX
Title	IMC Weekend School
Geographical scope	The Netherlands
Target group	1. Citizens
Description	<p>The IMC Weekend School offers a science and health enrichment program to underserved 11–13 year olds in Amsterdam. The partnership fosters inspiring exposure to science and health education for children from underprivileged neighbourhoods, encouraging STEM careers but also promoting positive professional role models.</p> <p>Since 2015, the Elsevier Foundation has supported the science and health programs for the Amsterdam West-based Weekend School, and in 2019 provided funding for the development of a new technology program.</p> <p>Working with IBM and VhTo (the Dutch national expert organization on girls and women in science and technology), the staff at IMC Weekendschool designed modules around different aspects of technology with the aim of giving students a broad perspective of this vast field. Students explored AI, data analytics, machine learning, computational thinking, coding, apps development and robotics – with a special attention to the relationship between humans and technology.</p>
Links, sources if applicable	The Elsevier Foundation IMC Weekend School The Elsevier Foundation What robots can teach about inclusive education

Contributing member	RELX
Title	Falling Walls Foundation – Female Science Talents program
Geographical scope	Germany
Target group	1. Citizens

Description	<p>The Female Science Talents Program helps young talented women to make the transition from science to industry, offering them an international stage at the Berlin Science Week in November each year, and providing networks to help them to be visible beyond Germany's borders.</p> <p>The partnership with the Falling Walls Female Science Talents Program pursues both the broad-based promotion of talents and the promotion of elites or exceptional talents. The design of the Program is based on a two-speed approach:</p> <ul style="list-style-type: none"> • The Talents Track provides a monthly series of online trainings designed to empower women to set themselves ambitious goals and develop their own leadership strategies. The series brings the talents into contact with top-class trainers, high-profile role models, and peers to model a possible next steppingstone. • The Intensive Track increases the visibility of exceptional talents providing close support for the participants to achieve a personal breakthrough in their career. The selected champions meet outstanding female leaders and are matched with high-profile mentors, participate in intensive trainings and are encouraged to build an international success team for peer learning, peer coaching, and mutual support.
Links, sources if applicable	The Elsevier Foundation Falling Walls Foundation – Female Science Talents program

Contributing member	Samsung
Title	Boosting the number of female ICT professionals in Spain
Geographical scope	Spain
Relevant area	<ol style="list-style-type: none"> 1. Citizens 2. Workers 3. ICT specialists
Description	<p>Samsung Women for STEM tackles the scarcity of women in the field of engineering and technology in Spain (only 12%), despite the fact that today there is a great demand for professionals in this field.</p>

	<p>The programme has already trained more than 3,000 women since its first edition. This year, Samsung launched the 5th edition of the programme, thanks to which 1,000 women will be trained and get started in the world of web programming. Training programme is divided into 3 levels, for a total of 350 hours of training divided into 34 weeks. The curriculum includes Web Development, Front-End Development and Full-Stack Development. The students who meet the requirements to pass the course obtain an official academic certificate issued by the Camilo José Cela University. In addition, the training hours will be reflected in equivalent university credits.</p> <p>Since 2021, Samsung has also offered 350-hour training in AI to almost 300 women, in partnership with the Polytechnic University of Madrid and the University of Malaga.</p>
Links, sources if applicable	https://www.samsung.com/es/tecnologiaconproposito/samsung-desarrolladoras/

Contributing member	SAP
Title	Meet and Code – Empowering a generation
Geographical scope	EU-wide
Target group	<ol style="list-style-type: none"> 1. Citizens (Children/ Youth) 2. Trainers/ teachers
Description	<p>Meet and Code introduces children and young people aged 8-24 to the world of technology and programming. The initiative promotes project and event ideas around the theme of digital education, which are carried out by non-profit organizations throughout Europe in September and October, inspired by EU Code Week.</p> <p>Non-profit organizations can therefore apply each year for a micro-funding of up to 500 euros so that children and young people can participate in the Meet and Code events free of charge. In addition, Meet and Code supports event organizers and non-profit organizations with free learning content and other resources from the Meet and Code Inspiration Library.</p>

	Since 2017, Meet and Code has reached over 200.000 young Europeans and funded more than 5.700 free-of-charge digital skills events in 35 countries.
Links, sources if applicable	Meet and Code Website Meet and Code 2021 Impact Video Meet and Code 2021 Awards Video

Contributing member	VMware
Title	VMware IT Academy
Geographical scope	EU-wide
Relevant area	<ol style="list-style-type: none"> 1. Teachers 2. Citizens 3. Workers
Description	<p>The program offers academic institutions and individuals' access to VMware resources to enable research, innovation, and learning.</p> <p>Through the program VMware enables various organizations to reskill or upskill citizens so that they can join the benefits of the 4th industrial revolution and build a career in IT.</p> <p>It offers three main resources:</p> <ol style="list-style-type: none"> 1. VMware Software and Licenses 2. Course Content 3. Certification Vouchers <p>The software can be used in research and education labs, as well as home use.</p> <p>The curriculum spans from covering the very basic topics of IT, to professional level content specific to VMware products, and across the technology fields of Cloud, Datacentres, Networking, Storage, Software Development, Cyber Security, DevOps, Containers and Digital Workspace.</p> <p>VMware entry level course is specifically created to help anyone completely new to IT, to start their learning journey and career in the IT world.</p> <p>The learning materials are designed in an online, modular and self-paced fashion that can be accessed from any</p>

	<p>device; with the labs embedded within so that there is no need to set up any local hardware labs for the hands-on.</p> <p>The vouchers enable the learner to obtain official VMware accreditation at a fraction of the cost.</p> <p>VMware have currently partnered with 450+ institutions across the EU who are leveraging our resources in their research and education work.</p>
Links, sources if applicable	<p>VMware IT Academy Website</p> <p>Getting Started in IT on the Digital Job Skills Europe</p>

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About DIGITALEUROPE

DIGITALEUROPE represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies. DIGITALEUROPE ensures industry participation in the development and implementation of EU policies.

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National Trade Associations

Austria: IOÖ

Belgium: AGORIA

Croatia: Croatian Chamber of Economy

Cyprus: CITEA

Czech Republic: AAVIT

Denmark: DI Digital, IT BRANCHEN, Dansk Erhverv

Estonia: ITL

Finland: TIF

France: AFNUM, SECIMAVI, numeum

Germany: bitkom, ZVEI

Greece: SEPE

Hungary: IVSZ

Ireland: Technology Ireland

Italy: Anitec-Assinform

Lithuania: Infobalt

Luxembourg: APSI

Moldova: ATIC

Netherlands: NLdigital, FIAR

Norway: Abelia

Poland: KIGEIT, PIIT, ZIPSEE

Portugal: AGEFE

Romania: ANIS

Slovakia: ITAS

Slovenia: ICT Association of Slovenia at CCIS

Spain: Adigital, AMETIC

Sweden: TechSverige, Teknikföretagen

Switzerland: SWICO

Turkey: Digital Turkey Platform, ECID

Ukraine: IT Ukraine

United Kingdom: techUK