DIGITALEUROPE

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Future directions for accelerating digital skills uptake across Europe

Executive summary

DIGITALEUROPE has set ambitious targets for Europe to train at least 300,000 cybersecurity professionals by 2030 and to increase digital literacy amongst citizens and businesses to 90 per cent of the population.[1]

The Digital Education Action Plan (DEAP) has been instrumental in advancing digital education across Member States, driving curriculum reforms and fostering digital skills amongst students and educators.[2] However, challenges remain, especially in ensuring equal access to digital tools for students across Europe. Misconceptions about the negative impacts of technology in education need to be addressed with clear, evidence-based communication. The ongoing skills gap in the workforce also highlights the need for continuous focus on digital skills development as a key driver of economic growth.

To build on this momentum and address existing gaps, we recommend the following actions:

▸▸ Sustain political focus on digital skills by continuing high-level engagement across EU institutions and Member States;

▸▸ Increase funding for digital skills development, targeting all age groups and underserved regions through relevant financial instruments;

▸▸ Promote a skills-first approach that prioritises competencies and experience over formal qualifications to close the digital skills gap in the workforce;

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[1] See DIGITALEUROPE, *The Download: Closing the digital skills gap*, available at https://cdn.digitaleurope.org/uploads/2024/07/DIGITALEUROPE-THE-DOWNLOAD-ISSUE-4-FINAL-WEB.pdf.

[2] 2024 marks the mid-point of the EU's strategy for improving digital education and training. This paper is DIGITALEUROPE's response to the Commission's public consultation for its comprehensive review of the plan. See https://education.ec.europa.eu/news/have-your-say-about-the-digital-education-action-plan.

▶▶ Expand digital education in schools, particularly IT-focused tracks, and ensure curricula align with market demands;

▶▶ Improve access to digital devices in schools by prioritising underserved areas and fostering public-private partnerships to guarantee equal opportunities for all students; and

▶▶ Combat misconceptions about technology in education through research-driven communication, ensuring the benefits of balanced digital learning are widely understood.

By addressing these challenges and maintaining momentum, the EU can continue to drive meaningful progress in digital education, ensuring that all citizens are equipped with the skills needed to thrive in a tomorrow's digital economy.

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What has been effective

Prioritising digital education across Member States has been a central focus of the DEAP, with notable progress driven by consistent Commission engagement at both high-level forums like the Council of the European Union and through close collaboration with Ministries of Education. This sustained engagement has been instrumental in fostering curriculum changes, with countries such as the Netherlands, Italy, Finland, France and Poland actively revising or implementing new digital skills curricula.

The DEAP has also catalysed the incorporation of coding and computational thinking in countries like Spain, building grassroots momentum through initiatives like EU Code Week.[3] Additionally, EU-funded projects like ESSA and ARISA have introduced European modular curricula, targeting critical technologies and advanced digital skills.[4]

The provision of digital devices in schools has surged, thanks to the Recovery and Resilience Facility (RRF). Countries traditionally slower in tech adoption – Germany, Italy, Poland, Slovakia, Romania, Bulgaria and Spain – have made substantial progress in ensuring access to digital learning devices. Centralised procurement models, offering flexibility and economies of scale, have further eased the administrative burden on schools, as seen in Austria, Germany, France and Norway.

The widespread integration of professional development tools, such as DigCompEdu and SELFIE, has bolstered teacher training in digital pedagogy, with platforms like eTwinning providing support for innovative teaching practices across Member States.

What needs to be emphasised next

Digital skills and economic growth

To drive socio-economic growth, the importance of digital skills must be reinforced, starting at the earliest ages. A 2022 Gallup study highlighted that high-level digital skills can increase individual income by 50 per cent, whilst even basic skills can boost earnings by 25 per cent.[5] The European Commission reports that 70 per cent of European businesses face a digital

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[3] DIGITALEUROPE is a partner of the Code4Europe project, which aims to ensure the organisation of the EU Code Week and related activities, including coding skills for women and girls. More information is available at https://codeweek.eu/.

[4] See the European Software Skills Alliance (ESSA) and Artificial Intelligence Skills Alliance (ARISA) projects, for which more information is available at https://softwareskills.eu and https://aiskills.eu/, respectively.

[5] See Gallup and AWS, *AWS global digital skills study: The economic benefits of a tech-savvy workforce*, available at https://assets.aboutamazon.com/dd/e4/12d668964f58a1f83efb7ead4794/aws-gallup-global-digital-skills-study-report.pdf.

skills shortage, yet only half of Europeans possess basic digital competencies, and just one-third of students attend schools with robust digital strategies.[6]

Key actions to address these challenges include:

▶▶ Sustained political prioritisation of digital skills across the EU, with continued engagement from the Commission, Parliament and national Ministries;

▶▶ Increased funding for digital skills development, targeting all age groups through mechanisms like the European Social Fund (ESF) and the European Regional Development Fund (ERDF);

▶▶ Expansion of skills certification programmes and curricula design to ensure that workforce competencies are formally recognised and aligned with market needs, maximising the impact of EU funding;

▶▶ Emphasising a skills-first approach to employment, prioritising practical competencies and experience over formal qualifications, thus enabling a more agile workforce;

▶▶ Promoting IT tracks within secondary education, with ongoing monitoring to increase both the number of programmes and student enrolment; and

▶▶ Enhanced coordination between DEAP and other digital skills initiatives, including the Cybersecurity Skills Academy.

Addressing misconceptions

Persistent misconceptions about the negative impact of technology on learning must be addressed. Research, such as a French Ministry of Education study, shows that students with personal digital devices perform better, particularly those from lower socio-economic backgrounds.[7] The OECD's PISA study also demonstrates that a balanced use of technology improves learning outcomes when compared to either no or excessive use.[8]

Future actions to combat these misconceptions include:

▶▶ Conducting targeted research to validate the educational benefits of specific technologies, rather than generic studies, and effectively

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[6] See European Commission, 'Digital skills and jobs,' available at https://digital-strategy.ec.europa.eu/en/policies/digital-skills-and-jobs.

[7] See French Ministry of National Education and Youth, *Longitudinal evaluation of activities related to educational digital technology*, available (in French) at https://www.education.gouv.fr/presentation-de-l-etude-elaine-303264.

[8] See OECD, PISA 2022 Results (Volume I), available at https://www.oecd.org/en/publications/2023/12/pisa-2022-results-volume-i_76772a36.html.

communicating these findings to national and regional decision-makers; and

▶▶ Launching communication campaigns to educate parents and the wider public on the value of technology in schools, along with guidance on managing device use at home to mitigate the risks of excessive leisure use.

Device access

Although progress has been made, access to individual learning devices remains limited. Only 30 per cent of European students have school-provided devices, compared to nearly 100 per cent in leading education systems like Canada, Singapore and Taiwan, with Estonia being a notable exception.[9] Home access to unmanaged devices can exacerbate socio-economic divides and lead to increased distractions, as seen in OECD studies on Australia.[10]

Next steps for improving device access:

▶▶ Prioritise the allocation of European Structural and Investment Funds to equip schools with technology, particularly in underserved regions;

▶▶ Foster public-private partnerships to ensure equitable access to digital tools, regardless of socio-economic background or disability;

▶▶ Commission a third round of the European benchmarking study (ESSIE) to assess the post-investment landscape and devise actionable insights;

▶▶ Provide educators and students with practical guidance on effective device management in school environments, ensuring technology enhances learning; and

▶▶ Empower teachers with advanced training in digital pedagogy, fund research into best practices, and create a centralised repository of successful tech-integration programmes for educational institutions across Europe.

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[9] See *Futuresource Mobile PC in K-12 Tracker*, available at https://www.futuresource-consulting.com/reports/futuresource-mobile-pc-in-k-12-tracker/.

[10] See OECD, *Managing screen time: How to protect and equip students against distraction*, available at https://www.oecd-ilibrary.org/docserver/7c225af4-en.pdf?expires=1725961049&id=id&accname=guest&checksum=BA4D22A38231D28CFA5EA3894D904ED1.

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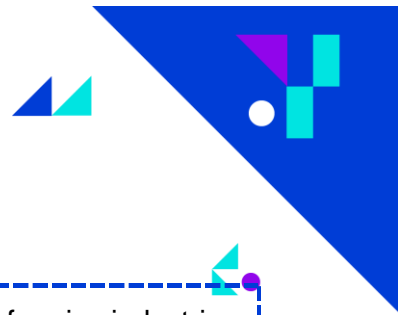**Manager for Investments & Innovation**

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About DIGITALEUROPE

DIGITALEUROPE is the leading trade association representing digitally transforming industries in Europe. We stand for a regulatory environment that enables European businesses and citizens to prosper from digital technologies. We wish Europe to grow, attract, and sustain the world's best digital talents and technology companies. Together with our members, we shape the industry policy positions on all relevant legislative matters and contribute to the development and implementation of relevant EU policies. Our membership represents over 45,000 businesses that operate and invest in Europe. It includes 108 corporations that are global leaders in their field of activity, as well as 41 national trade associations from across Europe.