

Progress on the European Commission's 2021-2027 digital education action plan

SUMMARY

In a rapidly changing and increasingly digital world, the COVID-19 pandemic has further increased the need to develop the use of technology in education and training. Appropriate skills and competences, as well as digital infrastructure and equipment, are key in this regard. When adapting education to the digital age, ensuring equity and inclusion is crucial, too.

The 2021-2027 digital education action plan (DEAP), the European Commission's flagship initiative adopted in September 2020, calls for high-quality, inclusive and accessible digital education supported by reinforced cooperation and exchange at EU level. The two strategic priorities set out in the plan are the development of a high-performing digital education ecosystem and the strengthening of citizens' digital skills and competences. Several actions were put forward to support these priorities.

Implementation of each of these actions is already on track or completed. For instance, the Council adopted its recommendation on blended learning approaches in November 2021, and the Commission published ethical guidelines on the use of artificial intelligence and data in teaching and learning for educators in October 2022. In the second quarter of 2023, the Commission is expected to present proposals for two Council recommendations, namely on the enabling factors for digital education and on improving the provision of digital skills in education and training.

In 2024, the Commission is due to carry out a comprehensive review to evaluate the DEAP's outreach and impact and, if necessary, propose additional measures or modifications.

In its March 2021 resolution on shaping digital education policy, the European Parliament acknowledged the DEAP's extended scope and ambition. At the same time, it urged that digital transition funds be used to increase education systems' digital capacity, and stressed the need to close the digital divide and ensure quality digital education based on a lifelong learning approach. According to Parliament, financial support for teachers' professional development is also crucial.



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Introduction

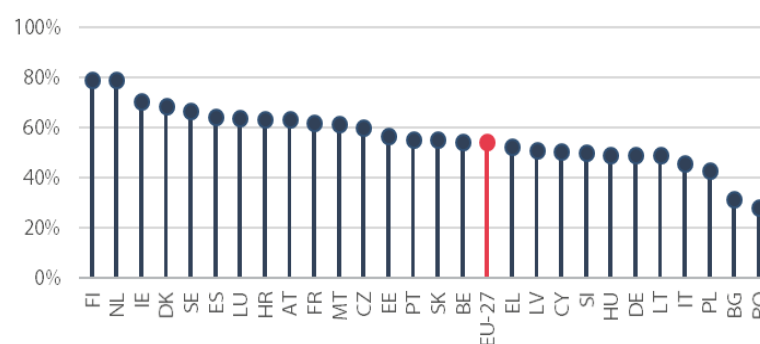
Digital transformation powered by innovation and technological development is [reshaping](#) the society and economy, making the acquisition of digital competences key in a world increasingly mediated by digital technologies. Advances in connectivity, the ubiquitous use of digital devices, and the growing need for digital skills have served as catalysts for the digital transformation in the education and training systems, as well.

During the COVID-19 pandemic, the use of digital technologies in education and training reached an unprecedented level: it was needed to ensure continuity of education and social interaction against the backdrop of mandatory school and university closures in most countries. The switch to digital education modes during this period brought about many opportunities, yet also shortcomings that need addressing. For instance, those who lacked access to connectivity and equipment, such as learners with disabilities and children from low-income families, were at a significant disadvantage. Moreover, growing dependence on digital technology has challenged educational institutions' digital capacities and educators' digital competences. The pandemic [revealed](#) marked differences not only between and within the Member States but also between levels and sectors in education and training.

Unlocking the potential of digital technologies for education and providing digital skills for all increases the education systems' resilience. It drives Europe's competitiveness and innovation, and is instrumental in the transition to a digital and green economy.

As part of the European education area (EEA) [strategic framework](#) for the 2021-2030 period, the Council set out seven EU-level targets that need to be met to realise the [EEA](#). Regarding low-achieving eighth-graders in computer and information literacy, the target is for their share to be below 15% by 2030. Moreover, the 2030 '[digital compass](#)' for the EU's Digital Decade policy programme set the objective of ensuring that 80% of Europeans ages 16 to

Figure 1 – People with at least basic overall digital skills (% of people aged 16 to 74), 2021



Source: [Eurostat ISOC_SK_DSKL_I21](#).

74 would have at least basic digital skills¹ by 2030. However, Eurostat figures indicate that in 2021, only 54% of this age group possessed at least basic digital skills.

In addition to [digital skills shortages](#) – including insufficient numbers of people with advanced digital skills and information and communications technology (ICT) specialists – a significant gender gap exists in specialist digital skills. Based on the 2022 [Education and Training Monitor](#), women accounted for only 19.1% of employed ICT specialists in 2021, and for 31.3% of enrolled students in the science, technology, engineering and mathematics (STEM) disciplines in 2020.

Background

In the context of the debate on the future of Europe launched in March 2017, EU leaders agreed to meet in Gothenburg in November 2017 for discussions on how to harness the full potential of education and culture. As a contribution to the meeting, the Commission published a [communication](#) in November 2017, putting forward its vision to establish an EEA by 2025. The

communication mentioned innovation and digital technologies as key factors contributing to improved education.

In December 2017, in line with the Commission's vision, the [European Council](#) invited the Member States, the Council and the Commission to advance work on several major initiatives and explore possible actions addressing topics such as skills challenges linked to digitalisation, cybersecurity, media literacy and artificial intelligence (AI). In response to the European Council, the Commission presented a package of measures in January 2018, including a [digital education action plan](#) covering the period between 2018 and 2020.

This first action plan, which concentrated on formal education, proposed a set of 11 actions intended to support Member States in addressing the challenges and opportunities digital technologies bring to education and training. The 11 actions were structured around three priorities:

- making better use of digital technology for teaching and learning;
- developing digital competences and skills;
- improving education through better data analysis and foresight.

According to the [Commission](#), although the action plan's implementation promoted cooperation and dialogue on digital education, given its short duration and limited budget, the actions' full potential and expected impact could not be achieved.

2021-2027 digital education action plan

The 2021-2027 [digital education action plan](#) (DEAP) was adopted in September 2020 as an integral part and key enabler of the Commission's vision for the EEA. It builds on both the 2018-2020 action plan and feedback from an [open public consultation](#) conducted between June and September 2020, which focused on the lessons learnt from the COVID-19 crisis.

The DEAP [presents](#) a strategic vision with a series of actions for high-quality, inclusive and accessible digital education and training. It aims to ensure stronger cooperation and closer collaboration between all key players across the EU. Compared with the 2018-2020 action plan, the DEAP has both a longer duration, running from 2021 to 2027, and a broader scope. In addition to formal education, it also covers informal and non-formal education, based on a lifelong learning approach. The initiative's two long-term strategic priorities are to foster the development of a high-performing digital education ecosystem and improve digital skills and competences for all. Within these two priorities, a series of actions are due to be carried out. Moreover, the plan has led to the establishment of a European digital education hub, i.e. a community to promote cooperation and information sharing.

The DEAP is implemented under the EEA enabling framework, with monitoring and reporting on the action plan taking place in the same context. In 2024, the Commission is set to carry out a comprehensive review to assess its outreach and impact and propose additional measures or modifications, should they be necessary.

The DEAP is implemented in synergy with other EU programmes and initiatives to promote the digital transformation of education and training, including the EEA, the [European skills agenda](#), the 2030 'digital compass' and the [Digital Decade](#) policy programme. It also supports the Commission's 'A Europe fit for the digital age' [priority](#) and contributes to the [Next Generation EU](#) (NGEU) recovery instrument.

The [European Year of Skills 2023](#) seeks to strengthen synergies between skills policies and EU initiatives on training such as the DEAP and the EEA.

Implementation of each of the DEAP actions is already on track or completed. The following section gives an overview of the individual actions' state of play.

Strategic priority 1 – Fostering the development of a high-performing digital education ecosystem

[Action 1](#) – Structured dialogue with Member States on digital education and skills

In line with Commission President Ursula von der Leyen's call in her 2021 State of the Union [address](#) to the European Parliament, the Commission organised a [structured dialogue](#) with Member States on digital education and skills. The dialogue, which took place in 2022, included meetings of a high-level group of national coordinators for digital education and skills, discussions in relevant Council formations, and bilateral meetings between the Commission and each Member State. The outcome of the discussions will feed into EU-level actions on digital education and skills, including Commission proposals for two Council recommendations planned for the second quarter of 2023, namely on the enabling factors for digital education (action 1) and on improving the provision of digital skills in education and training (action 10).

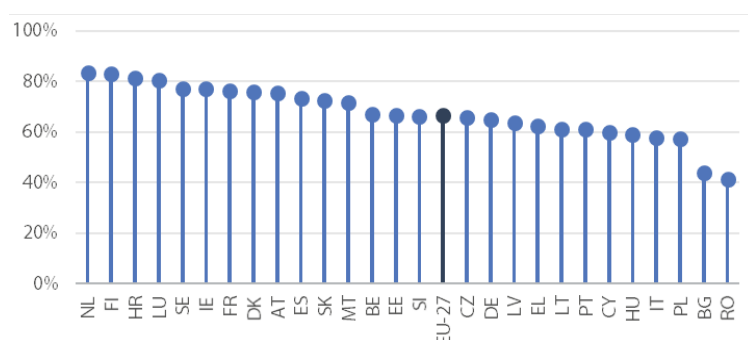
The Commission proposal for a Council recommendation on the enabling factors for digital education will put a strong focus on the need for universal access to high-quality and inclusive digital education and training. It will also address the digital divide that has become even more apparent in the light of the COVID-19 crisis. To assist Member States in the digital transformation of their education and training systems, the Commission is set to propose key enabling factors for successful digital education. These would include, for instance, tackling connectivity and equipment gaps, and encouraging the development of teachers' and educators' digital pedagogy skills.

[Action 2](#) – Council recommendation on blended learning approaches for high-quality and inclusive primary and secondary education

The Commission published its [proposal](#) for a Council recommendation on blended learning for high-quality and inclusive primary and secondary education in August 2021. The Council adopted its [recommendation](#) in November 2021. In addition to proposing shorter-term measures to address the consequences of the recent pandemic, the recommendation aims to strengthen the education and training systems' resilience by outlining the way forward for developing longer-term effective and inclusive blended-learning² approaches. To accompany and support the recommendation, the Commission published a [handbook](#) on blended learning in October 2021.

[Action 3](#) – European digital education content framework

Figure 2 – At least basic digital content creation skills (% of all individuals), 2021



Source: [Eurostat ISOC_SK_DSKL_I21](#).

At the beginning of 2023, the Commission set up a stakeholder [consultation group](#) on the European digital education content framework. The first consultation is taking place in March, another one is planned for May 2023. The group will contribute to a study that analyses digital education content across the EU, the challenges and opportunities relating to the ongoing digital transformation, and the lessons learnt from the

pandemic. The objective is to present policy options for proposing a framework for digital education content.

Also in connection with this action, in 2021, an external research team prepared a [feasibility study](#) on the establishment of a European exchange platform. The study requested by the Commission found that harmonising the exchange of content, courses and related data was most needed in the higher education sector. The preparatory phase towards launching a European exchange platform for higher education that would support transnational cooperation between institutions and promote exchange of content and educational data started in 2022, when targeted consultations were carried out to identify the needs and requirements of higher education stakeholders.

[Action 4 – Connectivity and digital equipment for education and training](#)

To help reduce disparities and address differences in high-speed internet access between schools due to uneven broadband penetration, the Commission [supports](#) Gigabit connectivity and 5G coverage in areas where socio-economic drivers, including education and training institutions, are located.

Action 4 encourages identifying use cases on 5G connectivity in local communities, schools and other education and training institutions. Between January and April 2022, a first [call](#) for 5G for smart communities was completed, with a second call opened in October 2022. A third call is planned for 2023.

Moreover, the action encourages Member States to make the best use of EU support available through the various funding programmes, including the [Recovery and Resilience Facility](#) (RRF), for enhancing internet access and purchasing digital technology and e-learning applications and platforms.

[Action 5 – Digital transformation plans for education and training institutions](#)

Action 5 includes support for the digital transformation plans of education and training institutions through Erasmus+ funded cooperation projects; the setting up of [Erasmus+ Teachers Academies](#) to enhance digital pedagogies and assist teachers in using digital tools; and the launch of [SELFIE for teachers](#), an online self-reflection tool that helps primary and secondary school teachers assess their digital competences and plan further training.

Funding for Erasmus+ cooperation projects addressing digital transformation plans for education and training institutions at all levels of education is available under the Erasmus+ annual general call until 2027. The Erasmus+ Teacher Academies initiative was launched in February 2022, with the announcement of 11 academies selected in the first round. SELFIE for teachers, launched in October 2021, reached over [100 000 users](#) by January 2023. To support users, the Commission has also released a SELFIE for teachers [toolkit](#) and set up an [expert network](#). A version for early childhood education and care professionals is planned for 2023.

[SELFIE for schools](#), the 2018-2020 action plan's ongoing initiative, helps schools reflect on their digital readiness. By October 2022, the tool had reached more than [3.5 million users](#).

[Action 6 – Ethical guidelines on the use of AI and data in teaching and learning for educators](#)

In October 2022, the Commission published [ethical guidelines](#) on the use of AI and data in teaching and learning for educators. Developed by an expert group on AI and data in education and training set up by the Commission, the guidelines provide teachers and educational staff, particularly in primary and secondary schools, with practical support and guidance by using concrete examples. The [executive summary](#) of the expert group's final report published in October 2022 serves as a supporting document for the guidelines, which are translated in all EU official languages.

Further activities under this action include two calls for proposals launched in 2021 to raise awareness of opportunities and challenges of emerging technologies in the classroom: [one](#) on research ethics for the use of AI, and [another](#) on extended reality in education and training.

Strategic priority 2 – Enhancing digital skills and competences for the digital transformation

[Action 7](#) – Common guidelines for teachers and educators to foster digital literacy and tackle disinformation through education and training

The [guidelines](#) from October 2022 were developed by a Commission expert group on tackling disinformation and promoting digital literacy through education and training, and accompanied by the expert group's [final report](#). Addressed to primary and secondary teachers and educators, they seek to provide concrete, hands-on [guidance](#) by offering, for instance, practical tips, activity plans, insights on topics and cautionary notes. The aim is to develop a better understanding of digital literacy through education and training, promote responsible and critical use of digital technologies, and raise public awareness and knowledge about disinformation. The guidelines are translated into all EU official languages.

[Action 8](#) – Updating the European digital competence framework to include AI- and data-related skills

In 2021, during the Digital Competence Framework for Citizens ([DigComp](#)) update process, the Commission consulted experts and stakeholders of the DigComp [community of practice](#), collected and created examples of knowledge and skills, and organised two international online meetings, among other activities. [DigComp 2.2](#) was published in March 2022. The publication presents more than 250 new examples of knowledge, skills and attitudes citizens need for a safe use of everyday digital technologies and new and emerging technologies such as systems driven by AI. It also provides key reference documents on DigComp.

[Action 9](#) – European digital skills certificate

The European digital skills certificate (EDSC) scheme, complementing existing national and international schemes, would allow for the recognition and transparency of certifications stating the acquired level of digital skills. The scheme will be based on the European digital competence framework. In 2021, the Commission organised a first stakeholder consultation on the key elements to be included in the feasibility study, which will look into different options for the EDSC. The consultation was held through the digital competence certification [community of practice](#). The feasibility study is ongoing, with the results due to be available at the end of 2023.

[Action 10](#) – Proposal for a Council recommendation on improving the provision of digital skills in education and training

In the second quarter of 2023, the Commission intends to put forward a proposal for a Council recommendation on improving the provision of digital skills in education and training, based on the results of the structured dialogue held with the Member States in 2022. The recommendation will define the steps to developing digital competences at all stages of education and training and from an early age. It will promote the exchange of best practice on instructional methods and include the use of EU tools to invest in professional development. The proposal will take into account the findings of a [report](#) published by the Commission's Joint Research Centre in March 2022, providing an updated overview of computational thinking skills in 30 countries.

That same year, Eurydice, a network tasked with explaining how education systems are organised in Europe, published a [comparative analysis](#) of informatics education in primary and secondary

education in 37 European countries. Those results will also contribute to the development of the Commission proposal for a Council recommendation.

Action 11 – Cross-national data collection and EU-level target on student digital skills in education and training

As already mentioned, the EEA strategic framework for the 2021-2030 period set the target for the share of low-achieving eighth-graders in computer and information literacy to be below 15% by 2030. Performance will be evaluated based on data presented in the international computer and information literacy study (ICILS). The main data collection, conducted by the International Association for the Evaluation of Educational Achievement (IEA), will take place throughout 2023, with the results from ICILS 2023 due to be published towards the end of 2024. The ICILS 2023 international database is expected to be launched early 2025. ICILS 2023 will be the study's third cycle. The EU financially supports participation of Member States and third countries associated with the Erasmus+ programme in ICILS 2023. The annual [Education and Training Monitor](#) tracks progress on the EU-level targets agreed as part of the EEA strategic framework.

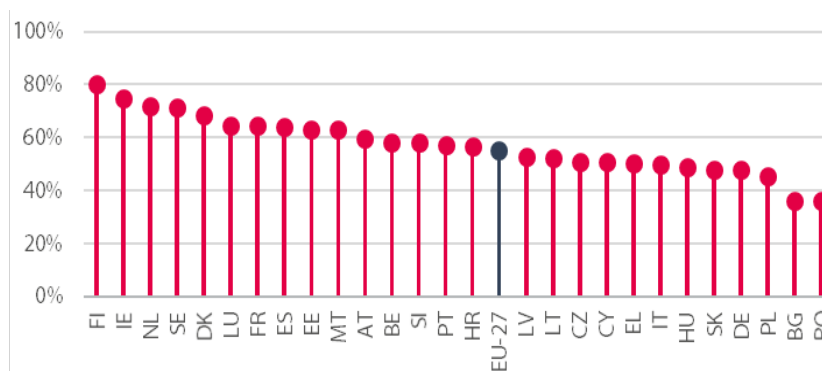
Action 12 – Digital opportunity traineeships

The Commission launched the digital opportunity traineeships (DOTs) pilot project in 2018, to enable students and recent graduates from higher education institutions to obtain practical experience in digital fields required by the job market. By the end of 2020, about 20 000 university students and recent graduates participated in an Erasmus+ traineeship abroad to strengthen their digital skills. In 2021, the scheme was extended to include higher education staff, as well as vocational education and training (VET) students and recent graduates. In 2022, the DOTs became available also for VET, school and adult-learning staff. The extension of the scheme started in 2021 as part of the 2021 Erasmus+ general call, and the action will run until 2027.

Action 13 – Women's participation in STEM

Regarding the key activities of Action 13, the November 2022 EEA [progress report](#) highlighted the following results. Since the launch of the [Girls Go Circular](#) project in 2020, over 13 500 girls in secondary education have participated in digital and entrepreneurial skills training through the European Institute of Innovation and Technology (EIT) and its knowledge and innovation communities. The project aims to equip 40 000 schoolgirls with these skills by the end of 2027. Following the first [Women and girls in STEM](#) forum in 2021, the second edition with around 1 000 registered participants was held in October 2022, to discuss empowering girls in science and technology. In the context of the three-year [ESTEAM](#) project,³ ESTEAM online communities of practice are being set up, and 11 ESTEAM Fests are

Figure 3 – Women in Digital (WID) score, 2022



Source: [European Commission](#).

Note: As part of the digital economy and society index (DESI), which monitors Europe's overall digital performance and Member States' progress in digital, the WID scoreboard analyses women's inclusion in digital jobs, careers and entrepreneurship. By using 12 indicators, it evaluates Member States' progress in the areas of internet use, internet user skills, specialist skills and employment.

organised in 19 Member States to boost women's and girls' entrepreneurial and digital competences. The first ESTEAM Fests took place in May and June 2022.

According to data published in January 2023 on the EIT website, more than [26 000 schoolgirls](#) had completed the Girls Go Circular training by the end of 2022.

Strengthening cooperation and exchange in digital education at EU level

European digital education hub

The [European digital education hub](#) contributes to both strategic priorities. It gathers stakeholders working on digital education to provide a space for information sharing and cooperation. Following stakeholder consultations and the launch of a [call for tender](#) for support services, registration for the hub's community of practice [opened](#) in June 2022. The community reached over [1 100 members](#) by November 2022. The [network](#) of national advisory services (NAS) composed of national and regional bodies primarily concerned with the implementation of digital education policies held its first exploratory meeting in [October 2021](#). Furthermore, the [European SALTO Digital Resource Centre](#)⁴ started operating in 2022, to help Erasmus+ [national agencies](#) with the programme's digital dimension. The [digital education hackathon](#), which contributes to the hub's objectives, brings together stakeholders to address challenges relating to the future of digital education. The hackathon ran for three consecutive years under the 2018-2020 action plan; its fourth edition is scheduled for the end of 2023.

The [Digital Education Stakeholder Forum](#) organised by the Commission took place in March 2022. It brought together policymakers, practitioners, academics and representatives from civil society and business, providing a platform for discussing the first year of DEAP implementation.

Table 1 – State of play of DEAP actions

Action	Strategic priority	Relevant EU funding programme	Implementation
1) Structured dialogue with Member States on digital education and skills	1	Erasmus+	In progress (Commission proposal Q2 2023, adoption by Council 2023)
2) Council recommendation on blended learning approaches for high-quality and inclusive primary and secondary education	1	Erasmus+	Completed (adoption by Council 2021)
3) European digital education content framework	1	Erasmus+	In progress
4) Connectivity and digital equipment for education and training	1	Connecting Europe Facility, RRF	In progress
5) Digital transformation plans for education and training institutions	1	Erasmus+	In progress
6) Ethical guidelines on the use of AI and data in teaching and learning for educators	1	Erasmus+, Horizon Europe	Completed

7) Common guidelines for teachers and educators to foster digital literacy and tackle disinformation through education and training	2	Erasmus+	Completed
8) Updating the European digital competence framework to include AI- and data-related skills	2	Erasmus+	Completed
9) European digital skills certificate	2	Erasmus+	In progress
10) Proposal for a Council recommendation on improving the provision of digital skills in education and training	2	Erasmus+	In progress (Commission proposal Q2 2023, adoption by Council 2023)
11) Cross-national data collection and EU-level target on student digital skills in education and training	2	Erasmus+	In progress
12) Digital opportunity traineeships	2	Erasmus+	In progress
13) Women's participation in STEM	2	Erasmus+, COSME, Horizon Europe	In progress
European digital education hub	1 + 2	Erasmus+	In operation

Data source: [European Commission](#), 2020.

DEAP financing at EU level

Several EU programmes and instruments support implementation of the DEAP. These include [Erasmus+](#), the [Digital Europe](#) programme, [Horizon Europe](#), the [European Social Fund Plus](#), the [European Regional Development Fund](#) and the [Connecting Europe Facility](#).

The RRF, through which 90 % of the NGEU temporary recovery instrument is allocated, helps implement the action plan, as well. To access funding, Member States had to prepare national recovery and resilience plans (NRRPs), laying down a number of reforms and investments. Of the RRF'S [six pillars](#),⁵ the 'Policies for next generation' pillar has a particular focus on investments and reforms in the education sector, including skilling and up-skilling. Other pillars, such as the green and [digital pillars](#) (with specific spending targets of at least 37 % and 20 % of all RRF funds, respectively) can also refer to education policy measures. In the context of the RRF, the Commission encouraged Member States to include reforms and investment in their NRRPs that would increase the acquisition of basic and advanced digital skills. The Commission's April 2022 '[Digital skills and education](#)' thematic analysis discussed the RRF's impact.

European Parliament

In a [resolution](#) of December 2018 on education in the digital era, the European Parliament stressed that the acquisition of digital skills required a coherent, lifelong learning approach spanning formal, non-formal and informal education. To meet the needs of society and job markets, and exploit the opportunities offered by information and communication technologies, education and training systems should be transformed at all levels. However, Members warned that it is still difficult to assess the impact of digital technologies on education, and underlined the importance both of implementing prevention programmes to improve children's safety online and of addressing cybersecurity threats. Members deemed basic digital skills essential and considered that the digital

divide in terms of age, gender and social strata requires a joint policy response. The resolution noted that inclusiveness and innovation should be at the core of digital education, and that teachers and trainers should play a key role in digital transformation. Members called on the Commission to strengthen synergies across, and ensure coordination of, EU funding programmes. Member States, in turn, were asked to use EU financial support efficiently. The resolution stated that the 2018-2020 digital action plan should be regarded as the first step towards a comprehensive digital education and skills strategy based on a lifelong learning approach. Moreover, it noted that strengthening digital skills by collaborating with non-formal education providers and among adults was lacking from the action plan.

Parliament's March 2021 [resolution](#) on shaping digital education policy emphasised the need to develop a policy that ensures the right to inclusive and quality education for all. While welcoming the DEAP's extended scope and ambition, it saw a need for a clearer governance and coordination structure in which Parliament should be involved. The resolution commended the action plan's alignment with the multiannual financial framework, and highlighted the need for effective synergies between the programmes and more effective coordination across all relevant digital education policies. It underlined the importance of the RRF's 'Connect' and 'Re-skill and up-skill' investment priorities, and stressed the value of pilot projects and preparatory actions initiated by Parliament, which would lead to more EU-wide cooperation to address educational gaps. Members asked that at least 10% of RRF funding be allocated to education, and called on the Commission to strengthen the role and visibility of education, including digital education, in the European Semester. The resolution highlighted the importance not only of improving connectivity for all schools but also of facilitating access to innovation and technologies and offering high-quality digital education content for teachers, learners and parents. Furthermore, it insisted on the need to modernise curricula and learning and teaching methods, and to support training courses for teachers financially. Lastly, it mentioned the need for further measures to enhance digital literacy among adults, including lower-skilled and older people, and encourage more girls to study STEM and STEAM subjects.

Advisory committees' and stakeholders' views

The [European Committee of the Regions](#) (CoR) adopted its [opinion](#) on the DEAP in May 2021. Stressing the importance of digital cohesion in the context of constantly growing digitalisation needs, the CoR called on the Commission to support, through the Erasmus+, Horizon Europe and InvestEU programmes, the establishment of pan-European platforms that would broadly, and in an inclusive and multilingual way, disseminate educational content and tools. It invited the Commission and the Member States to help reduce the digital divide through targeted investments, with the support of the RRF and the ESF, in regions facing demographic challenges. The CoR also advocated that the European digital education content framework have its own technology incubator to create content.

In its October 2020 [opinion](#) on the updated skills agenda, the [European Economic and Social Committee](#) (EESC) stated that the European Semester and the DEAP should address the need for schools, teachers, parents and students to receive support for the improvement of digital skills as well as the necessary equipment. In its October 2021 [opinion](#) on blended learning, the EESC requested that Member States make sure blended learning does not diminish the social value of education and the relevance of face-to-face teaching. As factors such as the inadequate teacher-student interaction during the pandemic contributed to a higher drop-out rate, the EESC highlighted that blended learning should be designed and deployed carefully to ensure an inclusive learning environment for children.

The [European University Association considered](#) that the DEAP was presented at a crucial moment, and supported its focus on cooperation and the strengthening of connectivity and infrastructure across Europe.

The [European Trade Union Committee for Education](#) (ETUCE) [welcomed](#) the DEAP's emphasis on the need for quality and inclusive education, and agreed with the planned digital skills development. However, it regretted the far-reaching role given to the private sector and the lack of inclusion of social partners. In a [position paper](#), the [European Trade Union Confederation](#) (ETUC) noted that the DEAP fails to provide solutions and effective actions for supporting digitalisation in the VET sector, as well as for adults and employees. According to ETUC, the action plan should have ensured that low-qualified and unemployed people receive effective support on digital skills and competences. While supporting the emphasis on equal access to digital learning for all and the increased focus on apprenticeship in the digital sectors, ETUC called for the inclusion of European and sectoral social partners in the planned actions.

Both [DIGITALEUROPE](#), a trade association representing digitally transforming industries in Europe, and the [European Federation of Education Employers](#) (EFEE) welcomed the action plan's update. EFEE [expressed](#) concern about the risk of, among other things, fragmentation and duplication because of the number of funding programmes and schemes in the area of digitalisation.

A December 2022 [EPRS publication](#) offers an overview of the positions of national, regional and local governmental organisations on the Commission's 'digital in education and skills' initiative. Data for the publication were gathered through requests for input from governmental organisations at all levels of government and proactive desk research aiming to obtain additional relevant input.

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ENDNOTES

- ¹ 'Overall digital skills' refer to five areas: information and data literacy skills, communication and collaboration skills, digital content creation skills, safety skills, and problem-solving skills. To have at least basic overall digital skills, people must know how to do at least one activity related to each area. Source: [Eurostat](#).
- ² 'Blended learning' in formal education and training is the term used to describe when a school, educator or student takes more than one approach to the learning process. It can be a blend of school site and other physical environments (e.g. companies, training centres, distance learning, outdoor and cultural sites) or blending different digital and non-digital learning tools. Source: [European Commission](#).
- ³ ESTEAM stands for Entrepreneurship, Science, Technology, Engineering, Arts and Mathematics. Source: [European Commission](#).
- ⁴ SALTO stands for Support, Advanced Learning and Training Opportunities. Source: [European Commission](#).
- ⁵ The RRF is organised around six pillars representing policy areas of European relevance: green transition; digital transformation; economic cohesion, productivity and competitiveness; social and territorial cohesion; health, economic, social and institutional resilience; policies for the next generation. Source: V. Lilyanova, [The digital dimension of the National Recovery and Resilience Plans](#), EPRS, European Parliament, July 2022.

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