

## SEIZE OPPORTUNITIES FOR DIGITALISATION IN EDUCATION AND TRAINING

POSITION DATED 25 NOVEMBER 2020

The leading research-intensive universities of Science and Technology (S&T) united within [CESAER](#) warmly welcome the European Commission's (EC) [communication on the Digital Education Action Plan 2021-2027](#) and the series of new measures for high-quality and inclusive digital education and training that it introduces.

Digitalisation has already transformed many aspects of learning and teaching, but the global Covid-19 pandemic accelerated shifts at an unprecedented scale and speed. It also further demonstrated the need to create high performing digital education ecosystems and to promote solid digital skills and competences of learners and teachers alike. Thus, we welcome the concrete initiatives that the EC put forward in the Digital Education Action Plan aimed at making education and training systems fit for the digital age. We particularly welcome the proposals (i) to come forward with a Council recommendation on the enabling factors for successful digital education; (ii) to develop a European Digital Education Content Framework and explore the creation of a European exchange platform for certified online resources; (iii) to update [European Digital Competence Framework](#); (iv) to develop a European Digital Skills Certificate; (v) to introduce an EU target for student digital competences; and (vi) to establish a European digital education hub.

With this position, we offer our recommendations on how to fully seize the opportunities and address the challenges of digitalisation in education and training along three lines: (i) focus on quality and learning outcomes; (ii) incentivise universities to integrate key technologies in education and training; and (iii) adopt a long-term and future-oriented approach to digital education and training.

### FOCUS ON QUALITY EDUCATION AND LEARNING OUTCOMES

We welcome the aspiration expressed in the communication to encourage exchange of best practices and expertise on digital education and training, and support the development of common tools and frameworks at the European level. We feel that more consideration should be given to how to ensure the highest pedagogical and educational quality, as well as achieve desired learning outcomes when learning and teaching online.

- We invite the European Union (EU) institutions and the EU member states to support the development of new and innovative teaching methods and pedagogies for online and blended learning.
- We invite the EU institutions and the EU member states to fund the boosting of the skills and competences of teachers to enable them to deliver high-quality and impactful learning experiences. Teacher training and upskilling can be delivered through the Erasmus Teacher Academies.
- We advise to put more emphasis on peer-to-peer learning activities and exchange of best practices on how to (i) re-design curricula and re-organise courses to make them suitable for online and blended learning and (ii) effectively organise assessment and

examination at universities. These issues could be well addressed through the European digital education hub.

- Although online learning offers many advantages such as flexibility, accessibility and personalised content, it cannot fully replace the in-person experience, especially in S&T education and training. Thus, a balance between online and in-person learning should be found, mixing the use of innovative technologies with on-campus and laboratory experience to achieve the best learning outcomes. The role of online learning for the development of specific competences related to an international mobility experience, either physical, virtual or blended, should be examined in this context.
- We advise the use of a European digital hub as a platform for sharing of learning resources and coordinating their development between institutions. Such a framework would allow universities to put more focus on dialogue-based and contextual in-person learning processes, moving the unidirectional learning components online.
- We call upon the EU institutions and the EU member states to address the compatibility of different digital infrastructures, education platforms and tools to make them more user-friendly and accessible to learners and teachers.

#### INCENTIVISE UNIVERSITIES TO INTEGRATE KEY TECHNOLOGIES IN EDUCATION AND TRAINING

Key technologies have already become an essential part of learning and teaching, a development that universities of S&T have been leading. Thus, we acknowledge the importance of promoting understanding of how they work and their applications in education and training. The following recommendations may help to further explore creative and innovative solutions for how to educate and engage students in new ways and how to fully embrace the opportunities that key technologies offer.

- We see that key technologies - such as Artificial Intelligence (AI), Virtual Reality (VR), Augmented Reality (AR) software applications - have the potential to enhance S&T education and training experiences beyond the level normally possible in educational institutions. Thus, we call upon the EU institutions to provide funding and enable universities with specific expertise to develop such applications and make them widely available and accessible to other higher education institutions.
- To meet the high demand of advanced digital skills, we reiterate our call to put much more effort into improving Mathematics, Informatics, Natural Science, and Technology (MINT) skills of pupils and teachers at secondary education level and to better address the gap in Science, Technology, Engineering and Mathematics (STEM) graduates.
- We encourage the EU institutions and the EU member states to support and provide funding for the development of courses and programmes in key technologies at universities.
- Actions aimed to enhance digital skills must also address data literacy and put more focus on fostering transversal skills that complement increasingly advanced and 'intelligent' machines and algorithms.

## ADOPT LONG-TERM AND FUTURE-ORIENTED APPROACH TO DIGITAL EDUCATION AND TRAINING

We acknowledge that digital education and training has become an integral component of learning and teaching. Faced with the immediacy of the Covid-19 crisis, universities made a big digital leap that would otherwise have taken years. However, it is still unclear what long-term effects these abrupt changes will have for education and training.

- We call upon the EU institutions to take into account the lessons learnt during the Covid-19 crisis, to look beyond the pandemic and to take a systematic long-term and future-oriented approach when implementing the Digital Education Action Plan.
- We urge the EU institutions to provide sustainable funding for the initiatives proposed in the Digital Education Action Plan to ensure that the actions will achieve their intended impact.
- We reiterate our call to the EU member states to use the funding available through the Recovery and Resilience Facility to invest in infrastructure, digital skills of learners and teachers, and online environments (platforms and tools) with high-quality content.
- We urge to address digitalisation in education and training, the challenges it creates and the opportunities it offers when co-creating the transformation agenda for higher education.

In order to deliver on the strategic priorities of the Digital Education Action Plan and achieve the intended impact, a smooth coordination between different initiatives and policies (notably the European Education Area, the Skills Agenda and the Digital Europe programme) as well as accessibility to different funding instruments and programmes will be essential. Moreover, the commitment of relevant stakeholders, sustainable funding at the European, regional and national levels as well as systematic and future-oriented approach will be the key factors in its success. The universities of S&T united within CESAER are committed and ready to contribute to implementing the Digital Education Action Plan and contribute to the operation of a European digital education hub. We offer our excellence, expertise and cooperation as a key stakeholder for research-based science and technology education and training at European level for the upcoming consultations, actions and other endeavours.

For more information, please contact Indrė Antanavičiūtė (Advisor for Higher Education) or David Bohmert (Secretary General).

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