

STEER THE DIGITAL TRANSFORMATION FOR THE BENEFIT OF EDUCATION

ECIU position on the Digital Education Action Plan¹

Our new reality is virtual. The digital transformation disrupts higher education, accelerated by the current COVID-19 pandemic. Universities are moving beyond online courses and are building fully online campuses using Artificial Intelligence, Virtual Reality, big data and blockchain. To make optimal use of the opportunities that digitalisation grants our students and society, we need the EU.

ECIU proposes the following EU-actions

1. Support the set-up of virtual campuses that can compete with the educational offerings of big tech companies;
2. Support the use of artificial intelligence and big data for the sake of fully personalised learning experiences;
3. Support innovative digital tools to ensure a large scale deployment of immersive learning experiences;
4. Support the implementation of innovative pedagogies.

1. SET-UP EUROPEAN VIRTUAL CAMPUSES

European universities need to be virtually connected and tied together to an online European hub to be able to compete with top universities in the US and Asia and big tech companies entering higher education markets. In this way, we safeguard Europe's knowledge potential and European values like inclusiveness, academic freedom, accessibility and privacy.

VIRTUAL CAMPUSES blend the universities physical ecosystem with the broader digital world and also support blended and virtual mobility practices, which are becoming more popular.

To realise virtual campuses, universities need **support** to build European infrastructures, insert after strategies, to cooperate with innovative companies, funding for the development of digital tools and a European digital education testbed: A safe space to test innovative technologies.

Digitising education and the the set-up of virtual campuses goes hand in hand with a more flexible education offer, and the increased use of **micro-credentials**. See also the ECIU position 'Towards a European Micro-Credentials Initiative'.²

1 https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1066

2 <https://www.eciu.org/news/towards-a-european-micro-credentials-initiative>

The **European Universities' Initiative** is one way to support European virtual campuses. With European and national support, universities can go beyond merely digitising their educational offer to embracing digitalisation tools like artificial intelligence, blockchain, virtual reality and big data fully in their pedagogies and ways of working.

The ECIU UNIVERSITY is working towards a digital European campus, making use of artificial intelligence, blockchain, virtual reality and big data to create fully personalised learning experiences for its students.

The new **Europass** online platform including an online e-Portfolio tool is another example to support online campuses. This platform can be relevant to manage lifelong learning, careers, and support verifiable digitally-signed credentials, which is urgently needed.

Blockchain technology could also be used for the virtual connection of campuses. The transparency and security of all transactions that are implemented in blockchain can be used for record-keeping, digital certification, edu-badges, and much more.

2. SUPPORT THE USE OF ARTIFICIAL INTELLIGENCE AND BIG DATA

To ensure we use the opportunities of Artificial Intelligence and big data on a large scale, we need European actions. Most importantly, this means a substantial allocation of resources for these developments and new types of collaboration between different sectors, thus breaking traditional boundaries.

We need **storage of and access to anonymised educational data** at a European level, comparable, or even in synergy with the European Open Science Cloud. The valuable data we have in Europe can benefit a personalised learning experience if big data is shared, openly accessible and usable. This will imply the employment of technologies such as blockchain. Storage of data on a European level is key to ensure European values like privacy, transparency, usability and freedom. The interests of learners should always be at the heart of these practices, personal data should always be owned by the learner. While implementing digital education, we should also invest in data protection and (cyber) security.

Close collaboration between European digital (Digital Europe) education (Erasmus+) and research (Horizon Europe) policies and programmes is key. There are many opportunities for more synergies in programmes like Digital Europe and the European Skills Agenda. Education must be thoroughly considered in European data strategies and AI development, and the other way around.

Artificial intelligence (AI) will shape future higher education profoundly, providing individually tailored recommendations for skills and competence development as well as the allocation of resources. Combined with big data, AI will be a core instrument for developing high-quality, low-cost personalised learning experience in higher education, independent of place and time.

ARTIFICIAL INTELLIGENCE can compare the current skills profile of an individual to future forecasts on skills and competence needs, also taking into account individual's preferences, motivation and career plans. AI will automatically find the best available ways to develop the skills and competences in question, taking into account favourite learning styles.

Instead of relying on structural concepts of education, such as degrees, courses and credits, AI focuses on skills and competences no matter where, when and how they are developed. They will all be part of an individual's **digital skills profile** in the spirit of continuous learning for life. This is an exciting opportunity to truly release the potential of European citizens.

3. SUPPORT IMMERSIVE LEARNING EXPERIENCES

The currently available tools (e.g., online meeting tools and different types of learning management systems) are not enough considering the future of higher education and particularly the need for natural interaction between people when physical encounters are not possible. Situations similar to COVID-19 are likely to occur in the future, and thus we should take steps far beyond the current tools and innovate boldly. Also, climate change, reducing mobility and austerity are valid reasons to invest in the further development of digital tools.

Extended/virtual reality is a solution to be explored in this context as it currently provides the most realistic solution for people's interaction without physical interaction. The development of extended/virtual reality is currently taking its first steps in education, however, the systematic development should also be started widely at the European level to ensure the deployment of immersive learning experiences on a large scale. While safeguarding the safety and privacy of the students and the information it is of the utmost importance that there are European Virtual Reality platforms which keep the data in Europe.

Gamification is another innovative aspect of immersive learning. Gamification as part of the digitalisation of education provides a new type of motivator for learning at all levels of education. So far the development of gamification has been in the hands of commercial developers. However, it should be considered how gamification could be employed for education and learning widely in Europe.

GAMIFICATION has the potential to make higher education more accessible for future generations. Gamification of our education needs innovative resource allocation and collaboration at the European level.

4. NEXT TO TECHNOLOGIES, ALSO SUPPORT PEDAGOGIES

"It is not a technology that makes a difference... it's pedagogy. Technology is pedagogically neutral."³

Digitising education can truly innovate education. To make use of the opportunities of digitising education, we have to GO BEYOND transforming books into e-books, physical tests to ELMS, lectures to (a)synchronous lecturing.

The gap between opportunities and practices must be closed. The transformative power of technology in education is clear. To integrate these technologies in the learning process, strong **change management** on how to implement technologies is needed. Teachers must be trained and empowered to apply AI, VR and other technologies, in correlation with active learning methods such as challenge-based learning.

Pedagogies are key for using the right technology for the learners' needs, from typical degree education to upskilling and reskilling purposes. The means and tools of digital educational must be customised according to learners' skills, from immersive tools for digital skilled learners to accessible tools for others.

THE FUTURE OF EDUCATION STARTS NOW

In 2030, European students can subscribe to the ECIU University, get lifelong access to our micro-courses and build their personal learning passport. The ECIU University will change the way of offering education from being degree-based to being challenge-based. Our learners and researchers will contribute to solving climate crises and other urgent challenges that Europe will face in the future. The ECIU University will constitute a true European university where learners and researchers co-operate with society, cities and businesses to solve real-life challenges in a unique, flexible way. Digital transformation, the use of artificial intelligence, blockchain, virtual reality and big data to create fully personalised learning experiences for its students are at the heart of the ECIU University.

ECIU looks forward to collaborating with European stakeholders to steer the digital transformation for the benefit of education.

THE ECIU UNIVERSITY

13 PIONEERS

- **University of Twente** (The Netherlands)
- **Aalborg University** (Denmark)
- **Dublin City University** (Ireland)
- **Hamburg University of Technology** (Germany)
- **Kaunas University of Technology** (Lithuania)
- **Linköping University** (Sweden)
- **Tampere University** (Finland)
- **Universitat Autònoma de Barcelona** (Spain)
- **University of Aveiro** (Portugal)
- **University of Stavanger** (Norway)
- **University of Trento** (Italy)
- **Institut National des Sciences Appliquées** (France)
- **TEC de Monterrey, associated partner** (Mexico)

32 ASSOCIATES

- 1 NATIONAL AUTHORITY
- 6 REGIONAL AUTHORITIES
- 8 CITIES
- 13 ENTERPRISES
- 2 ASSOCIATIONS
- 2 AGENCIES

UNITING OVER...

489

RESEARCH groups

46,688

STAFF, INCLUDING
27,182 ACADEMIC
STAFF/RESEARCHERS

147

FACULTIES

298,000

STUDENTS