

ETF POLICY BRIEFING

EVIDENCE, PRACTICE & ADVICE FOR POLICY MAKERS



FOSTERING HUMAN-CENTRIC AND FUTURE-PROOF DIGITAL EDUCATION POLICIES

Introducing the ETF Digital Education Reform Framework

Digital education policy in the spotlight

Digital education has been a policy focus for at least three decades, gradually evolving from pilot initiatives, focused mainly on connectivity and infrastructure, to reform efforts involving pedagogical innovation and system change. Policy attention to the use of technology in education has grown steadily, as has both the pace of adoption of digital technologies and the growth of their transformative potential in all areas of society.

In recent years, two developments have pushed digital education to the top of both global and national policy agendas.

First, the **COVID-19 pandemic** forced many countries to increase their investment in digital education to unprecedented levels and to update their digital education strategies, spurring an unprecedented growth of digital education as an economic sector. The global shift to online learning has demonstrated the potential of digital technologies to make education and training systems more resilient but has also revealed important concerns about educational equity and inclusion.

Second, breakthroughs in **artificial intelligence (AI)** have sparked a debate about the revolutionary benefits of AI in education against growing concerns that the technology could threaten teacher-learner interactions. In response, international organisations are urging countries to update their existing digital education policies, taking into account the need to regulate AI in education, to ensure the central role of the human element in the

educational process, and to put in place strong measures to mitigate the ethical and exclusionary risks posed by the exponential application of AI.

These developments have led to a proliferation of digital education initiatives in many countries, both in the form of pilot initiatives and structural reforms. This increased policy interest is reinforced by the recent publication of reports and analyses by international bodies, such as the European Commission, OECD, and UNESCO, which provide insights and recommendations on how policies in this area should be designed, implemented and monitored. The common conclusion of these reports is that **policymakers should be flexible and consider a variety of policy options for digital education**, tailored to the nature of today's digital ecosystems.

Several concerns remain to be addressed, such as the insufficient attention to inclusiveness and the well-being of teachers and learners. Also, appropriate leadership capacity and relevant governance and funding mechanisms, as well as the influence of the digital industry on digital education strategies, are often underestimated by policymakers. In short, contemporary education policymaking often lacks a **focus on possible explicit and implicit medium- and long-term impacts of digital technologies** on teaching and learning systems. Good policy design should enhance the positive impact of digitalisation on education and minimise its potential risks.

What is digital education?

In line with the Digital Education Action Plan 2021-27 of the European Commission, **digital education** refers to both “the deployment of the vast and growing array of digital technologies (apps, platforms, software) to improve and extend education and training” and “the need to equip all learners with digital competences (knowledge, skills and attitudes) to live, work, learn and thrive in a world increasingly mediated by digital technologies”.

Quality and inclusive digital education includes aspects such as relevance (e.g., accuracy and appropriateness), engagement (e.g., accessibility of content and services) and technology (e.g., reliability and sustainability).

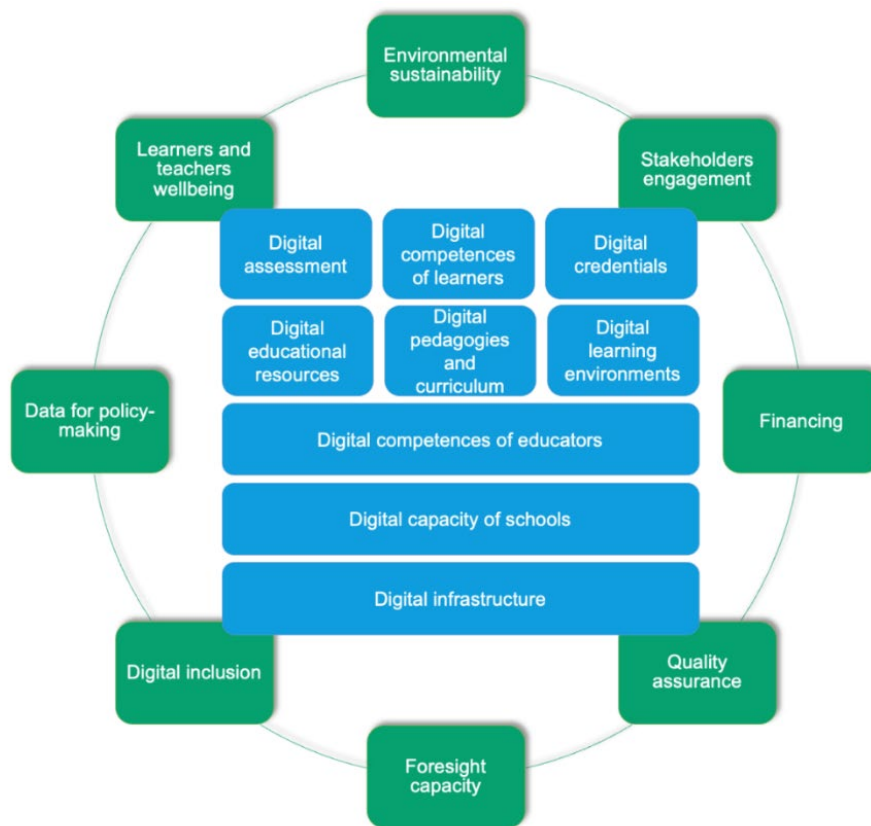
[Digital Education Action Plan \(2021-2027\) | European Education Area \(europa.eu\)](#)

The ETF's Digital Education Reform Framework

In an effort to support the EU's neighbouring countries in their policymaking process, and in response to an increasing demand for support in the field of digital education, **the European Training Foundation (ETF)**, as part of its Creating New Learning initiative, has analysed a number of recent digital education policies, with the aim of understanding the main unresolved challenges and the reasons for the success of contemporary digital education policies.

The result of this work is the **ETF's Digital Education Reform Framework**, a tool that

aims to help policymakers navigate the complexity of digital education and gain a full understanding of what a reform in this area may entail, learning from high impact policies and from the body of research in the area of digital education. Designed with a particular focus on initial and continuing vocational education and training (VET) in the context of developing and transition economies, the framework can be used both to design new policies and evaluate existing ones in order to improve them and generate better initiatives in the future.



This policy brief presents the main components of ETF's Digital Education Reform Framework, starting with the possible **focus areas** of the policies concerned, followed by the main **cross-cutting critical factors** that policymakers in this field need to consider, and

ending with some **recommendations** that have emerged from the current body of research in this area. These three components are presented in detail in the full ETF's Digital Education Reform Framework, available at: <https://openspace.etf.europa.eu/derf>.

Possible focus of digital education policies

Digital education policies can focus on several areas, ranging from issues that go beyond the sphere of education, such as internet connectivity, to others that are fully education-related, such as teaching content and pedagogy. The ETF Digital Education Reform Framework identifies **nine possible focus areas** and for each one describes possible

policy pointers for each. The key message is that no matter which focus area(s) a country chooses, it is important to **maintain a systemic perspective** and to recognise the links between the different areas, so as to build on complementarities and on past achievements.

Policy area	Policy pointers
1. Digital infrastructure	Include education in system infrastructure policy. Increase access to digital devices in schools and among learners. Ensure high-speed connectivity for schools.
2. Digital education competences of educators	Define digital skills and competences for educators. Ensure educators' professional development in digital education. Introduce digital practices for the professional development of teachers.
3. Digital capacity of schools	Develop digital leadership among school leaders. Provide incentives to develop the digital capacity of schools. Strengthen digital data management in schools.
4. Pedagogy and curriculum	Encourage the use of innovative digital pedagogies. Integrate digital literacy across the curriculum. Establish a monitoring system for digital pedagogies.
5. Educational resources	Produce high-quality digital educational resources. Build the capacity of teachers and learners to create digital resources. Promote the creation and use of Open Educational Resources.
6. Learning environments	Develop and connect online environments within schools. Develop national and local digital education platforms.
7. Assessment	Promote the use of digital technologies for innovative assessment. Review assessment criteria and approaches to adapt them to the digital society.
8. Skills and competences of learners	Define the digital skills and competences expected of learners. Encourage informal learning opportunities to build digital skills. Encourage critical digital literacy among learners.
9. Credentials	Promote the uptake of microcredentials. Support and promote national platforms for digital credentials.

How to use the ETF's Digital Education Reform Framework

The ETF's Digital Education Reform Framework has been designed to inform decision-makers and policy-makers about the types of digital education initiatives that can be applied in different policy areas (the table on this page), as well as the critical factors and the key recommendations that need to be taken into account when implementing such policies (on the following pages). Given the speed of change in digital technologies and the different dynamics of adoption in different countries, we recognise that the design of policies in this area must start from the existing conditions in different countries at different historical moments. For this reason, the framework is not prescriptive in nature and aims to promote a holistic mapping of what initiatives exist in a given context and informed discussions about digital education reforms.

Critical success factors for digital education policies

Defining the focus areas of a digital education initiative is the first step, but it is not sufficient. When it comes to digital education, there are a number of cross-cutting critical factors that need to be considered and examined in order to enhance the impact and inclusiveness of

digital policies and reforms. While these concerns would be relevant to any education policy, the questions they raise, presented in the table below, are very specific to digital technologies and should guide the work of policymakers.

Critical factors for success	Key questions
Data for policymaking	<ul style="list-style-type: none"> Is the policy based on actual data about digital education developments? Does the policy plan to use the data it produces as evidence to monitor progress and further develop digital education at system level?
Inclusion	<ul style="list-style-type: none"> Does the policy take into account the needs of digitally excluded and vulnerable groups, including gender differences? Will the policy create new forms of unmeasured inequality?
Stakeholder engagement	<ul style="list-style-type: none"> Has the policy been developed with the involvement of all relevant government departments and external stakeholders? Does the policy take advantage of digital opportunities to engage stakeholders?
Financing	<ul style="list-style-type: none"> Does the policy budget for all the costs of digital education? Does the policy involve stakeholders, including the private sector, in resource sharing to support its activities? Under what conditions?
Quality assurance	<ul style="list-style-type: none"> Does the country's quality assurance system for education cover digital education? If not, how does the policy contribute to this? Does the policy include quality assurance mechanisms, both for the digital content and for the technical solutions implemented?
Environmental sustainability	<ul style="list-style-type: none"> Does the policy contribute to improving the environmental sustainability of the education and training system? Does the policy take into account the impact of environmental digital technologies?
Teachers and learners wellbeing	<ul style="list-style-type: none"> Does the policy consider the impact of digital technology on the wellbeing of teachers and learners? Are training and support services available for learners and educators to ensure stress-free and positive learning experiences?
Foresight capacity	<ul style="list-style-type: none"> Is the policy based on an analysis of expected developments in digital technology and digital pedagogy? Does the policy include a component for monitoring developments in digital education in the field of action?

Reflection on these questions would allow policymakers and designers to understand the dynamics of the ongoing digital transformation in and around education. For example, recognising that AI must be trustworthy before it can be fully embedded in educational settings, or realising the value of the personal data flows that result from the interaction between students and computers, are

essential prerequisites for anyone making decisions about digital education. At the same time, thinking about what the balance should be between public policy and commercial solutions, how to manage the trade-offs between centralised digital solutions and school autonomy or what should be regulated and what should not, will help decision-makers design more equitable and effective policies.

Recommendations for designing inclusive and sustainable digital education policies

The growing body of research in the field of digital education is shaping a shared understanding of what inclusive and effective digital education policies may look like in the context of pursuing **a human-centered vision of education and putting learners and teachers, rather than technology, at its heart**. In addition, the efforts of policymakers as they design or review digital education initiatives should be guided by the following recommendations:

- **The interrelated elements of digital education need to be addressed in their complexity.** Many digital education policies address different areas of digital education. However, since not everything can be changed at once, it is important to set priorities and a sequence of actions and to assess the potential impact of changes in digital-related elements on the education system as a whole.
- **Digital education policies should take a whole-of-government approach, both horizontally and vertically,** ensuring cooperation between different government departments and relevant stakeholders. Such policies will be more sustainable if they are embedded in an overarching national education strategy and a clear leadership and governance structure is in place.
- **Digital education policies need to be supported by equitable and impact-driven investment.** In particular, creative approaches to investment, including public-private partnerships, should be encouraged to enable schools and educators to choose digital education solutions that meet their needs and address digital security, accessibility, data privacy and the well-being of teachers and learners.
- **Open education approaches can widen learners' access to lifelong learning opportunities.** Digital education policies should embrace open education approaches, moving from purely school-based settings to networked learning spaces that encompass both formal and informal learning, prioritising the use of Open Educational Resources (OER) and open educational practices.
- **Educators and school leaders must be involved.** Digital education policies should involve educators in defining problems and devising solutions adapted to their own circumstances, thus increasing their ownership of the expected change. Similarly, school leaders should be supported in implementing the digital transformation through professional development and self-assessment.
- **Digital education policies should build on and contribute to research on innovative teaching and learning.** Academic and practice-based research on digital education, on both traditional and emerging topics, should inform policy initiatives, while at the same time policymakers need to adequately fund and encourage independent research as a critical factor in successful digital education reforms.
- **Policy monitoring and evaluation approaches need to be revised to cover digital education.** International standards, guidelines and procedures should be used to monitor and evaluate digital education policies. A mix of quantitative and qualitative monitoring methods can help to assess the impact of digital technologies on learners, teachers and the education system as a whole.

Key References

- ETF (2022). Digital Education Reform Framework.
- European Commission (2023). Proposal for a Council Recommendation on the key enabling factors for successful digital education and training.
- UNESCO (2023). Global Education Monitoring Report “Technology in education”.
- OECD (2023). Shaping Digital Education, Enabling Factors for Quality, Equity and Efficiency.
- Joint Research Centre (European Commission) (2023). On the Futures of Technology in Education: Emerging Trends and Policy Implications.