Executive summary

Digital technologies are a key resource for OECD education and training systems. If used effectively, they promise to transform teaching and learning practices and help to advance quality, equity and efficiency. Digital education technologies can enhance educators' ability to respond to students' learning needs and interests, to make teaching more engaging and differentiated, and to widen access to countless learning resources. New technologies also promise to extend the reach of highly effective educators, to reduce learning inequalities and to create more inclusive education systems.

Investment in education technology has surged worldwide over the past decade and digital education technologies increasingly permeate schools and classrooms. Since the COVID-19 pandemic, there has been an unprecedented increase in their use, which enabled the continuation of organised instruction during the crisis. In higher education, surveys show that most students, educators, and administrators expect higher education providers to continue widely using blended and hybrid learning in the future.

These developments raise the question of how education systems can make effective use of digital technologies and reap their potential. As it stands, most education systems are far from providing full and equitable access to high-quality digital technologies and their current use tends to fall short of transforming teaching and learning. The COVID-19 pandemic exposed these shortcomings and underlined the need for supportive policies and conditions to make use of the full potential of digital technologies in education.

This report seeks to support governments in shaping digital education by analysing digitalisation policies and enabling factors that can support quality, equity and efficiency. The report covers school education at the primary and secondary level, vocational education and training (VET) (including initial school-based VET), and higher education offered by education institutions. Digital technologies are broadly defined to include networks (such as the Internet), hardware, software and technology-related services. The report focuses on their uses in the context of teaching and learning.

Chapter 1 of the report presents an analytical framework to assess digital education policies along with eight analytical dimensions, which are then examined in more detail in subsequent chapters, taking stock of challenges and opportunities for policymakers, empirical evidence, and policy practices in OECD education systems:

- Chapter 2 - Strategic visions and policy co-ordination
- Chapter 3 - Pedagogical approaches, curricula and assessments
- Chapter 4 - Guidance and regulatory frameworks
- Chapter 5 - Funding and procurement
- Chapter 6 - Accessible, innovative and high-quality digital infrastructure
- Chapter 7 - Capacity building
- Chapter 8 - Human resource policies
- Chapter 9 - Monitoring and evaluation

For each dimension, the report also presents a number of promising policies and initiatives that may help education systems to unlock the potential of digital education technologies. Some of the key policy directions emerging from the analysis are summarised below.

Developing a holistic strategic vision to coordinate digital education policy

A coherent and forward-looking strategy is critical to guide the development and successful implementation of digital education policy. Such strategies should be guided by a forward-looking vision for digital education and consider the wider policy ecosystem beyond education. They should also consider the implications of emerging technologies and be continuously updated to reflect changes in the digital landscape. In increasingly digitalised education systems, a digital education strategy that is adapted to the system's governance arrangements can facilitate co-ordination and alignment among stakeholders to improve the development and implementation of policies.

Ensuring that digital technologies are used to promote quality and equity in education

The use of digital education technologies is not an end in itself. Their development, selection and uses in the classroom should be guided by their impact on learners and the overriding goal of promoting quality and equity in education. Making effective use of digital technologies for high-quality education requires the adaptation of pedagogical approaches, curricula and assessments. It also requires careful monitoring and evaluation to measure the impact of digital education policies and to build evidence on the effective use of education technologies. Furthermore, educators need to be supported to make informed decisions on the selection and use of digital tools in the classroom, which may require the adaptation of human resource policies. Public authorities can support this process through guidance, regulatory frameworks, quality assurance policies and by promoting peer-learning on good practices across the system.

Aligning funding models and enabling smart investments in education technology

Promoting equity starts by addressing inequalities in access to innovative and high-quality digital infrastructure and directing scarce resources to where they are most needed. Yet, policy makers in many education systems have limited information on which to base their investment decisions, and the funding environment for digital education technologies is fragmented, creating planning and budgeting difficulties for education institutions. Education systems have developed several promising approaches to address these challenges by adapting funding and revenue models to the specificities of digital education and by building collective capacity across education institutions to make smart investments in digital technologies. Governments should seek to further align funding models with policy objectives, ensure transparency in procurement processes, and promote collaboration across sectors to boost investment and innovation in education technologies.

Building capacity for digital education at all levels of the education system

To make effective use of digital education technologies, it is essential to build digital capacity at all levels of the education system, among educators and institution leaders, but also students, parents and administrators. Public authorities should support education institutions in selecting the right digital tools to meet their needs, facilitate their interactions with innovative education technology solutions and empower leadership teams to build a culture of digital education in schools and higher education institutions.

Strengthening capacity among local authorities and within the wider education ecosystem can further support the successful implementation of digital education policies. Most importantly, supporting educators, promoting peer-learning and offering continuing professional learning opportunities will be critical to ensure that digital education technologies are used to advance quality and equity in education.