

# Foreword

The 2023 Digital Education Outlook provides, for the first time, a window into how OECD countries and partner economies are managing the digital transition and the extent to which they are prepared for a digital transformation. This companion report provides the basis of the work and supplemented it by offering a detailed descriptive analysis of countries digital ecosystem and governance, enabling a comprehensive of each country's approach to digitalisation.

A digital transition in education has been underway for decades but accelerated significantly during COVID-19 pandemic, when many education systems shifted to remote learning. The transition is characterised by the adoption of student information systems, online learning platforms and the use of digital devices in classrooms.

This transition, however, is not the same as a digital transformation. The latter would imply a fundamental change in some educational processes, integrating technology not just as a tool, but as a way to reshape teaching methodologies, learning processes, and the educational ecosystem at large, to make it more effective. Currently, the incorporation of technology in education often replicates traditional methods rather than reinvents them. The main benefit of a digital transformation lies in the personalisation of education, both in terms of learning and of student support.

65% of OECD countries have a national student information system. The US state of Colorado, for example, runs a public website called SchoolView that provides information and analysis from its longitudinal education information system. The portal provides a social network for teachers, a learner centre and resource bank, interactive school performance charts and access to performance data and reports.

Yet Colorado is an outlier. Few jurisdictions or countries link their student information systems with individual evaluation results or provide dashboards or visualisation tools to make the data more useable in real time. Privacy concerns and a lack of data linkages in many countries prevent information collected about students, teachers and schools to be translated into actionable information to improve education.

Or consider learning management systems – the tools to manage student attendance, classes, contacts and content. Most schools within OECD countries use learning management systems at all levels of school education, yet few are interoperable with system-wide student information systems or with the other digital tools they use.

Interoperability is crucial. Otherwise, it limits data collection and analysis at the jurisdiction or national level and creates inefficiencies as data is manually re-entered across systems and jurisdictions. Countries that provide their schools with a national learning management system are able to leverage system-level functionalities while collecting the data that they need to monitor and improve the education system. In Iceland, for example, the INNA system is both a learning management system for upper secondary schools, allowing for student tracking, timetables, communication with students and parents and handling of school fees, as well as a student information system for the government.

At a more fundamental level, a digital transformation cannot take place unless access to stable, high-speed Internet is ubiquitous. Reliable connectivity is key for students to fully enjoy digital, personalised, and engaging learning through digital solutions, for them to communicate with their teachers or tutors, and to receive timely feedback on their activities.

Faster and better internet throughout all levels of education is a policy priority of almost all countries. Yet how systems use digital devices and resources in schools also bears consideration. According to the 2022 PISA study, students who spent up to one hour per day on learning on digital devices outperformed those who did not by 14 points, even after accounting for socio-economic status. Yet many students reported being distracted by digital devices in the classroom, and this had a negative impact on performance.

The role of teachers thus remains central within any digital transformation. They are the agents who will help students navigate the digital world, not only from a technological adoption standpoint but also in terms of inculcating the behaviours and values necessary to regulate the use of digital devices and adapt to an increasingly data-driven world.

Yet many teachers feel unprepared to in this respect. Across the OECD, around 20% of secondary education teachers report the need for further training despite 60% of teachers having undergone digital education training in the past year. With rapid advances in AI and other digital technology, this is easy to understand. Yet most directives on professional standards with respect to digital competencies remain broad and high-level, leaving significant room for interpretation on how systems understand, develop and evaluate these skills in practice.

Systems like Austria's Digi.kompP model, conversely, provide a clear framework for eight digital competency areas and a progression model to guide teachers throughout their professional development. Micro-credential systems, like that offered by Digital Promise in the US, offer another model to provide credentialed learning across a wide range of digital competencies.

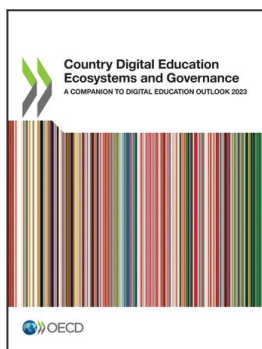
Recent rapid advances in generative artificial intelligence will likely disrupt many aspects of digital education. This transformative technology has the capacity to democratise autonomous learning experiences, providing support tailored to the needs of individual learners and redefining how, where and what students learn.

Yet, today, few OECD countries are prepared to understand or guide the use of generative AI in education. Although all reporting countries and jurisdictions noted that use of generative AI is already widespread, none of the 18 countries for which we have comparative information has issued a regulation on the use of generative AI in education and only nine countries or jurisdictions have published non-binding guidance.

The Digital Education Outlook 2023 outlines a set of opportunities, guidelines and guardrails for the effective and equitable use of AI in education, developed together with Education International, a global federation of teachers' trade unions, that is intended to guide countries and jurisdictions as they decide whether and how to integrate generative AI into their education systems.

These guidelines are essential to ensuring that AI tools are used responsibly and ethically, safeguarding against biased content generation, data privacy breaches, and unintentional reinforcement of stereotypes. The guidelines underscore the need for effective dialogue between education authorities and teaching professionals to ensure that teachers can maintain their role as the guiding force in the learning process while harnessing the potential of AI in education. They may be of interest to the readers of this book.

Above all, for the digital education transition to become a transformation, governments need to adopt a system-wide approach that strengthens the coherence of the tools, technologies, actors and entities across their education system. I hope that the analysis and insights offered by this book will allow for a better understanding of different countries' approaches and that, together with the perspectives offered by the Digital Education Outlook 2023, they will provide OECD Members with useful resources to navigate the digital transformation.



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