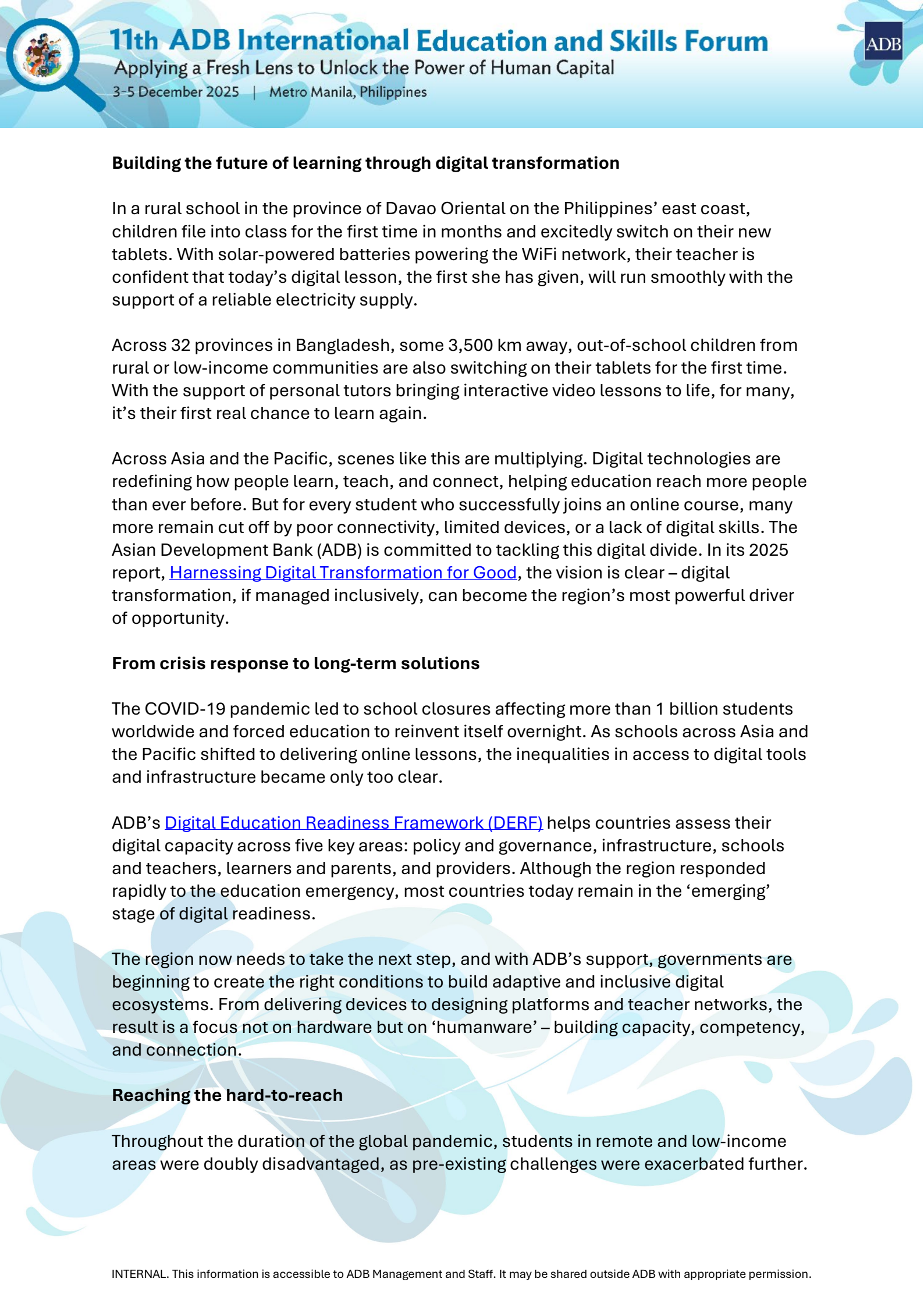




Building the future of learning through digital transformation

In a rural school in the province of Davao Oriental on the Philippines' east coast, children file into class for the first time in months and excitedly switch on their new tablets. With solar-powered batteries powering the WiFi network, their teacher is confident that today's digital lesson, the first she has given, will run smoothly with the support of a reliable electricity supply.

Across 32 provinces in Bangladesh, some 3,500 km away, out-of-school children from rural or low-income communities are also switching on their tablets for the first time. With the support of personal tutors bringing interactive video lessons to life, for many, it's their first real chance to learn again.

Across Asia and the Pacific, scenes like this are multiplying. Digital technologies are redefining how people learn, teach, and connect, helping education reach more people than ever before. But for every student who successfully joins an online course, many more remain cut off by poor connectivity, limited devices, or a lack of digital skills. The Asian Development Bank (ADB) is committed to tackling this digital divide. In its 2025 report, [Harnessing Digital Transformation for Good](#), the vision is clear – digital transformation, if managed inclusively, can become the region's most powerful driver of opportunity.

From crisis response to long-term solutions

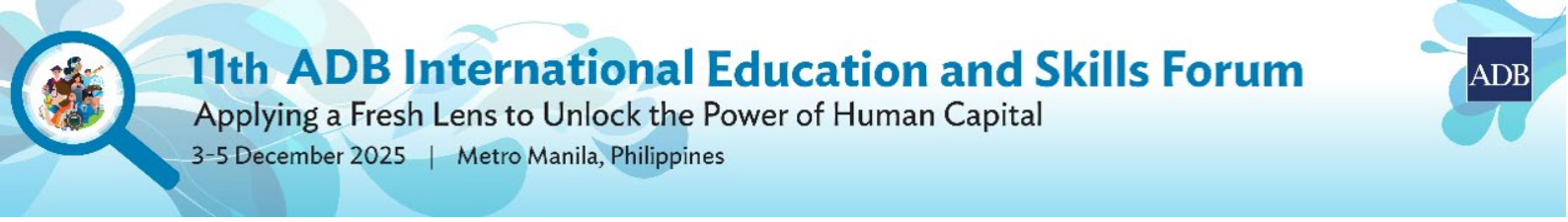
The COVID-19 pandemic led to school closures affecting more than 1 billion students worldwide and forced education to reinvent itself overnight. As schools across Asia and the Pacific shifted to delivering online lessons, the inequalities in access to digital tools and infrastructure became only too clear.

ADB's [Digital Education Readiness Framework \(DERF\)](#) helps countries assess their digital capacity across five key areas: policy and governance, infrastructure, schools and teachers, learners and parents, and providers. Although the region responded rapidly to the education emergency, most countries today remain in the 'emerging' stage of digital readiness.

The region now needs to take the next step, and with ADB's support, governments are beginning to create the right conditions to build adaptive and inclusive digital ecosystems. From delivering devices to designing platforms and teacher networks, the result is a focus not on hardware but on 'humanware' – building capacity, competency, and connection.

Reaching the hard-to-reach

Throughout the duration of the global pandemic, students in remote and low-income areas were doubly disadvantaged, as pre-existing challenges were exacerbated further.



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For countries across the region, it was crucial to reach these learners in order to minimize learning loss and maximize the rate of return to school.

ADB through the Japan Fund for Prosperous and Resilient Asia and the Pacific (JPRAP) supported a project focused on [EdTech Solutions for Last Mile Schools](#) in partnership with the Department of Education, as part of its [Secondary Education Support Program](#) in the Philippines, helping 500 students in 21 of the country's 'last-mile schools'. The supply of low-cost educational technology (EdTech) tools to hard-to-reach schools, including radios, tablets, and Wi-Fi networks powered by solar energy, aimed to prevent the loss of months, if not years, of learning. Teachers received training to help them integrate technology into their lessons, while engineers built local area networks that would help students learn even without internet access. The improvement in students' performance in maths and digital literacy was noticeable.

What began as an emergency solution has since evolved into something far more transformative. Schools now utilize satellite technology, providing students with high-speed internet access for an uninterrupted learning experience. Teachers participate in regular online training programs, enhancing their ability to incorporate updated, high-quality teaching methods into their lessons. Teacher and student surveys reveal that lessons have become more digital and interactive, and educators' confidence in their own digital skills has increased.

In Bangladesh, where out-of-school children aged 8–14 years risked permanent exclusion from education, ADB's support focused on a new approach to lesson delivery. Through the pilot project, [Education Without Formal Schooling Through Tablets and Tutors](#), 890 children received devices preloaded with interactive video lessons and were paired with tutors who provided twice-weekly support via phone. The results were striking, with significant improvements both in maths and Bangla language, especially for girls and learners in rural areas.

Even in the most challenging contexts, initiatives like these demonstrate how technology can open doors to learning and help teachers bring that learning to life. These low-tech approaches are providing valuable feedback for expanding ADB's support for EdTech models across the region.

Smart EdTech choices to enhance learning

While digital transformation starts with infrastructure and access, its true impact depends on the extent to which it enhances teaching and learning. For ADB, EdTech is not about the latest devices or software, but rather the effectiveness with which it aligns learning goals and national educational priorities. ADB's QESA framework, as detailed in the 2023 report, [Reimagine Tech-Inclusive Education](#), is an important tool that helps decision-makers assess the **Quality, Effectiveness, Scalability, and Affordability** of potential EdTech solutions to avoid costly system-wide mistakes.

Regional pilot projects, such as the [Technology-Enabled Innovation in Education in Southeast Asia \(TIESEA\)](#), are another way in which ADB helps countries to take a step-by-step approach before scaling up. This pilot has provided an additional level of analysis, enabling Cambodia, Indonesia, the Philippines, and Vietnam to evaluate EdTech solutions targeting different learner groups and settings. The involvement of thousands of students, teachers, and policymakers is expected to provide invaluable insight to inform the development of National EdTech roadmaps in all countries.

Turning EdTech into learning

Beyond enabling teachers to design digital lessons and interactive content, the digital transformation of education is giving rise to AI-powered platforms that are transforming how students learn and how teachers teach. As part of the TIESEA pilot, ADB supported initiatives in [Cambodia and Uzbekistan](#) to test how AI-based tools could measure students' ability to apply their inquiry, creativity, and problem-solving skills in STEM subjects (science, technology, engineering, and mathematics). By providing teachers with real-time feedback, the tools helped identify areas where students were struggling, thereby enabling teachers to personalise their coaching accordingly. Students in the bottom 30% showed the most improvement, indicating that data-driven teaching can help close gaps and boost performance.

However, for teachers and schools to get the most out of these tools, it's essential that they have confidence in their own digital skills. The ADB's Teacher Digital Competency pilot, again conducted in Cambodia and Uzbekistan, has helped educators assess their own digital capabilities using a self-assessment platform based on the European Union's SELFIEforTeachers. Together, these initiatives demonstrate how EdTech can make meaningful assessment a two-way process, enabling teachers and students to identify their strengths, understand their knowledge gaps, and inform their professional development needs.

Building inclusive ecosystems

While interventions such as those in the Philippines and Bangladesh show targeted support for some of the most vulnerable learners, the pandemic prompted other countries to develop nationwide solutions to deliver distance learning for all learners.

In Armenia, a [Distance Education for Resilience Project](#) launched in direct response to COVID-19 school closures has since become the backbone of the country's digital learning ecosystem. Supported by ADB, this e-learning platform connects to the national Education Management Information System (EMIS) to create an integrated system that caters to the needs of teachers, students, and leadership. With features that ensure accessibility for students with disabilities, the system is transforming the way education is delivered to all learners nationwide.

From pilots to ecosystems

ADB’s approach to the digital transformation of education has evolved alongside the lessons learnt. Step-by-step, early pilot projects, such as the EdTech solutions in the Philippines and Bangladesh, have demonstrated that targeted interventions can transform outcomes for even the most vulnerable learners. Now, by utilizing frameworks like ADB’s DERF and developing far-reaching initiatives, such as Armenia’s national platform, ADB is helping countries transition from isolated projects to integrated ecosystems.

But the road from pilot to roll-out is still slow. For digital transformation to be sustainable, it must build on the lessons learned and ensure that infrastructure is connected to policy, teachers are trained, and learners have access to relevant and inclusive content. It is crucial to think long-term to develop sustainable funding models and ensure that digital hardware can be reused, recycled, or responsibly replaced. Above all, it requires a shift in mindset from emergency response to education resilience, enabling adaptation to future shocks from pandemics, climate disasters, or technological evolutions.

A digital future

With three-quarters of the region’s employers demanding digital skills and eight in ten new workers expected to have basic digital literacy, the challenge is to ensure that education prepares learners to thrive in a digital future. ADB is already helping countries develop their digital skills frameworks and align education reforms with national priorities and labor market needs. EdTech solutions that incorporate data analysis and online learning technologies are playing an increasingly important role in delivering education that is responsive and relevant. For ADB, the digital transformation is about more than just connecting devices – it is about connecting people to inclusive, quality, lifelong learning.

Case study details

Project	US\$	Status	Link to project data sheet
Ed Tech solutions for Last Mile Schools Philippines	2.4 million for COVID digital devices – the wider project is worth 300 million	Active	https://www.adb.org/projects/45089-004/main
Education Without Formal Schooling	1.7 million	Closed (2022)	https://www.adb.org/publications/education-without-formal-schooling-bangladesh

Through Tablets and Tutors, Bangladesh			
Technology Enabled Innovation in Education in Southeast Asia (TIESEA)	2 million	Active	https://www.adb.org/projects/54098-001/main
Distance Education for Resilience Project, Armenia	0.75 million	Closed (2020)	https://www.adb.org/projects/54329-001/main#project-pds

