Education Development Trust

THINK PIECE

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How can we best support government-led education technology (edtech) interventions?

Why edtech interventions should be education-led, tech-enabled

Education Development Trust is an international not-for-profit organisation working to improve education outcomes around the world. We seek to improve education – and transitions into work – through expert research on what works, and delivering highly contextualised programmes designed to transform education systems, schools and lives.

Our vision is a world in which all lives are transformed through excellent education. We combine global research and our longstanding expertise with regional knowledge to inform education policy and practice and deliver programmes around the world. Through our work and expertise – which spans from early years education right through to post-school careers – we seek to strengthen education systems, transform teaching and learning, ensure effective transitions into work, and contribute to global responses to key education challenges.

We improve national learning outcomes by informing education policy and putting our knowledge into action in our programmes and consultancy work. We work in varied contexts all over the world, in education systems as diverse as those in Brunei, Kenya, England, Rwanda and Dubai. This often includes challenging environments, hard-to-reach localities, and marginalised communities where the need is greatest. In all these locations, we use evidence-based methods to raise education standards, deliver innovation in schools, help teachers to improve their teaching quality, empower educators to effect sustainable and cost-effective transformation in their schools, and reduce disparities in educational outcomes.

We are a trusted partner of governments, academics and multilateral agencies across the globe. Our work helps to drive global understanding of education solutions, and we support global dialogues among international policymakers on education system improvement.

Our expert knowledge, programme design and implementation expertise are also deployed in delivering careers services in England which are rated 'outstanding' by Ofsted, and in owning and managing a family of independent schools, in which we put our knowledge about excellent teaching and learning into practice.

To achieve all this, we draw on our programme of public domain research that highlights 'what works' in education reform and invest in research and development to create globally leading and innovative methodologies, helping to make government ambitions for better education systems a reality.

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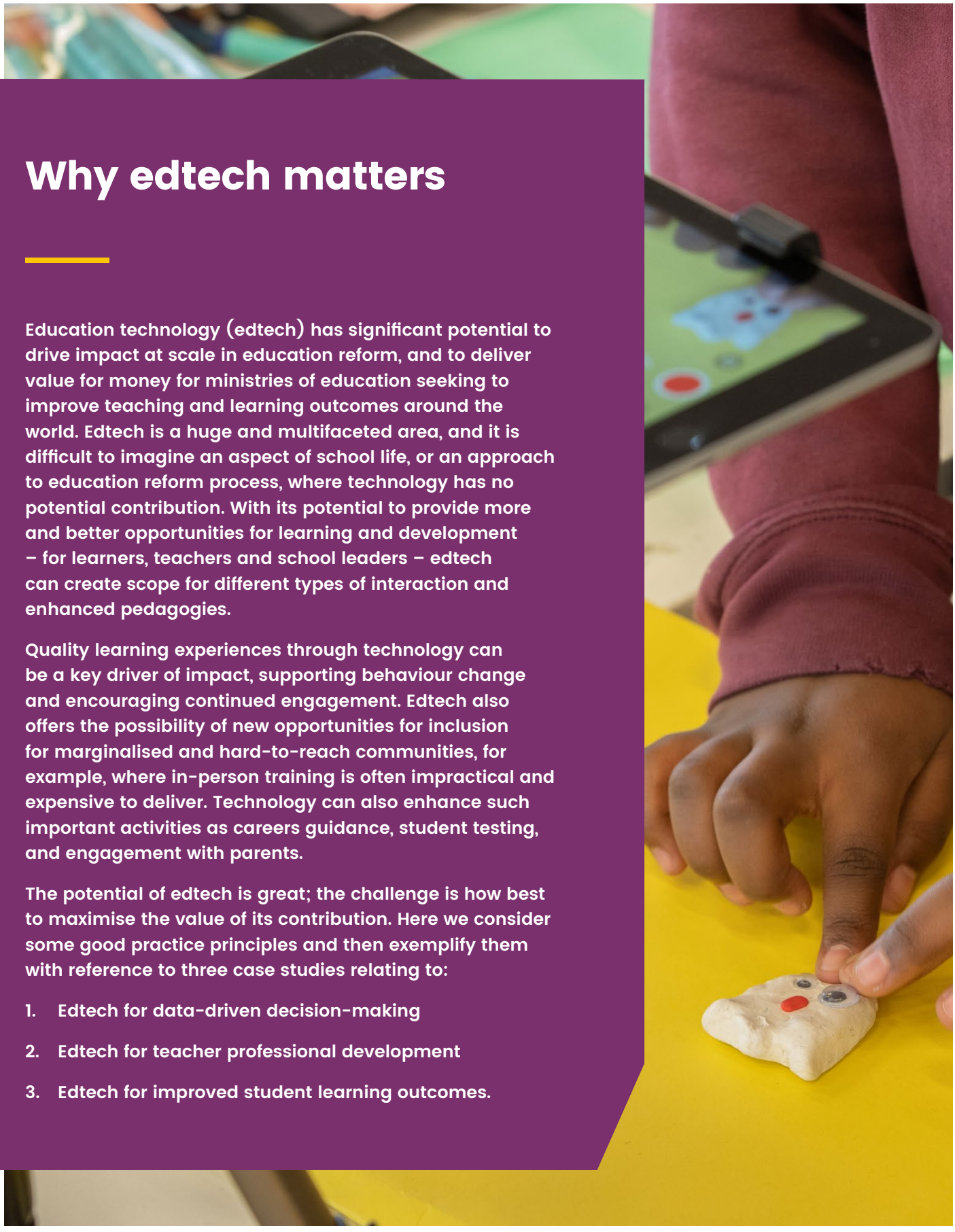
Table of Contents



Why edtech matters

Education technology (edtech) has significant potential to drive impact at scale in education reform, and to deliver value for money for ministries of education seeking to improve teaching and learning outcomes around the world. Edtech is a huge and multifaceted area, and it is difficult to imagine an aspect of school life, or an approach to education reform process, where technology has no potential contribution. With its potential to provide more and better opportunities for learning and development – for learners, teachers and school leaders – edtech can create scope for different types of interaction and enhanced pedagogies.

Quality learning experiences through technology can be a key driver of impact, supporting behaviour change and encouraging continued engagement. Edtech also offers the possibility of new opportunities for inclusion for marginalised and hard-to-reach communities, for example, where in-person training is often impractical and expensive to deliver. Technology can also enhance such important activities as careers guidance, student testing, and engagement with parents.

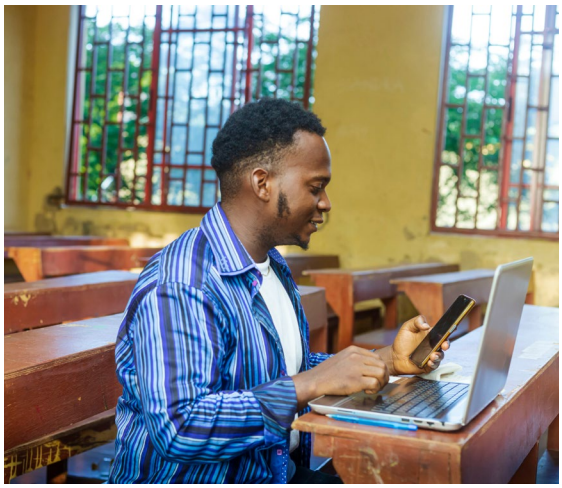
The potential of edtech is great; the challenge is how best to maximise the value of its contribution. Here we consider some good practice principles and then exemplify them with reference to three case studies relating to:

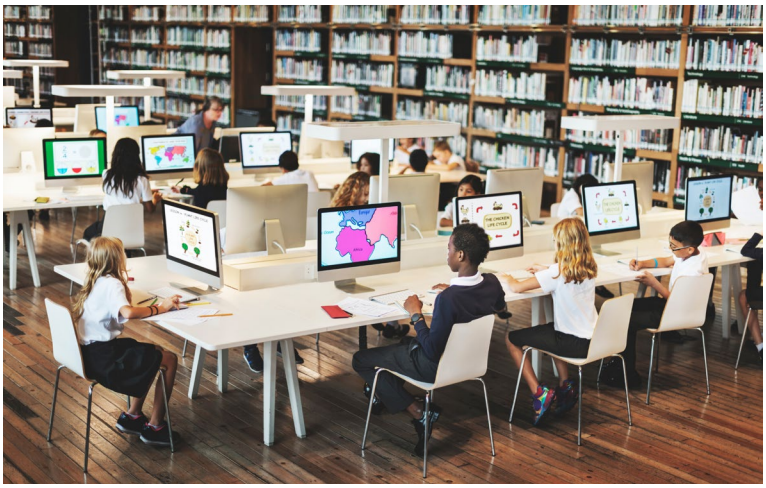
1. Edtech for data-driven decision-making
2. Edtech for teacher professional development
3. Edtech for improved student learning outcomes.

Why we cannot rely on technology alone

Investment in technology does not automatically transform education or reduce inequalities. The edtech track record for impact is mixed, and highly dependent on context: how and when it is used, and by whom. As the Covid-19 pandemic demonstrated, while technology can increase access to quality education for some, without careful thought, it can exclude others, particularly those from disadvantaged backgrounds.

There are many examples from across the world of edtech projects with minimal to no positive impact on education outcomes. The key is to ensure that the technology is used in support of good educational practice and in a way that is designed to help users of the technology to better achieve their goals. For this reason, at EDT, we adopt an education-led, tech-enabled approach, specifically designed to support governments with ensuring that any edtech solution they embrace is fit for purpose – translating into real education impact and enhancing, rather than diminishing, the power of other education reforms.





What do we mean by education-led, tech-enabled?

Education-led, tech-enabled is the core concept that underpins EDT's approach to the use of edtech in education reform. This keeps our focus first and foremost on the educational change we want to see, and leads us to consider how this can be achieved with support from the right technology. Our education-led tech-enabled approach starts with a real-life educational problem or challenge, and explores whether some aspect of technology can be a powerful ingredient in the solution.

The best starting point in designing effective programmes that are underpinned by technology is to identify first the intended educational impact. The right technology can then be identified that enables and enhances delivery. In our own programmes, we consider how we can provide our tried-and-tested models for education reform - in a way that is best suited to the specific needs of the people we are working with - and identify ways that technology can support and enhance this provision.

What does an education-led, tech-enabled approach mean for governments?

This approach has significant implications for how government-led edtech interventions are best supported. It is important to have a comprehensive understanding of an education system as a whole, along with the wider digital landscape and the particular needs and motivations of stakeholders within that context. We must also consider whether edtech interventions are being used to drive, and not inhibit, inclusion.

A system-wide, sustainable lens

First, an education-led, tech-enabled approach requires a focus on the system as a whole: working with governments to ensure that their education systems have the resources and capacity to lead and sustain the use of any technology that is embedded into reform programmes. This means building on and growing existing resources, capacity, and policies of ministries of education, at both central and regional levels. Investing in technology will not make a difference unless the conditions are right across the system: Do teachers have the skills to make use of the new technology? Do the schools have the necessary internet connectivity? Do school leaders and district officials understand and champion the use of the new technology? Unless systemic conditions like this are right, the reform will often fail.

We should also be mindful of any hidden costs with applying the technology, such as increased energy and connectivity demands, hardware provisioning, software licensing fees, and the need for making premises more secure, as well as additional staff and training required to run and maintain hardware and software.

A system-wide approach may include the development of new technologies or the use of existing or 'everyday' technologies, which might be deployed in new or more effective ways. In Rwanda, for example, as part of our Building Learning Foundations (BLF) programme, EDT embedded diploma- and certificate-level blended continuous professional development courses for school leaders into the University of Rwanda's existing e-learning platform, following collaboration with the Rwandan Ministry of Education and the University of Rwanda. This not only reduced the cost of the intervention, but also helped to ensure the durability of the training platform beyond the life of the programme.

Indeed, ensuring the sustainability of an edtech solution beyond a specific intervention is a crucial factor in its success. Any intervention that requires investments which cannot be sustained by donors or governments for the long term is not truly fit for purpose. Solutions need to offer value for money in terms of reducing overall costs, while enabling interventions to scale in a cost-effective way. That said, sustainability is not merely a financial issue: education systems must also be equipped with the knowledge, expertise and ownership to maintain the use of technological solutions beyond the life of any supporting programme (see Case Study 1 for how we accomplished this in Ethiopia).

CASE STUDY ONE

Facilitating sustainable, data-driven insights to strengthen the Ethiopian education system

In 2019, the Ethiopian Ministry of Education (MoE) partnered with EDT to design and deliver a technology tool to advance the World Bank's General Education Quality Improvement Program (GEQIP), as part of the UK government-funded TARGET programme.

EDT developed a Data for Delivery (D4D) approach and digital application, which introduced a more effective monitoring and reporting system by supporting better school-level learning data collection on tablets (provided as part of GEQIP), which were initially distributed across 310 pilot schools. The app features a user-friendly interface for designated teachers at each school, to input data on a range of key indicators. Leaders at a national, regional and district (woreda) level could then access learning data on the national, web-based platform, which organised the data visually on custom-built monitoring dashboards, with a historical view enabled to clearly show progress on different indicators.

This has given the MoE deeper insight and understanding of school-level needs, enabling more effective resource management, coordination, and implementation planning across the system.

Following the end of the TARGET programme in early 2024, the MoE has now assumed control of the D4D app and web-based platform, which operates on the Ethiopian government's national servers, following a thorough handover process (including ownership of the application's code), to ensure long-term sustainability. The MoE is planning scale-up with the World Bank, and has adeptly configured its servers to meet the specific requirements for independently managing the D4D data collection process. EDT supported the transition by providing comprehensive training sessions for stakeholders, as well as user manuals to assist MoE staff, which are integrated directly into the application interface for ease of access.

A deep understanding of context and insight-driven design

Such a system-wide view needs to consider the wider digital landscape in each education system, and of course the technology that is chosen must be suitable for each distinctive context. To ensure that tech-enabled solutions are fit for purpose, we need to ensure that they are underpinned by a deep understanding of wider digital landscapes, and the varied contexts of those who may be using them. This necessitates close working partnerships with governments, consulting and collaborating with them to ensure that all elements of the intervention are contextually appropriate and sustainable.

Crucially, such a collaboration should include a full assessment of the priorities and motivation of stakeholders at different levels of the system, in terms of commitment to the adoption and maintenance of a technological solution, as well as specific technical requirements and existing data systems. Assumptions should not be made about participants' digital capacity and experience without the right data to support them. Instead, a deep contextual understanding should be informed by insights gathered specifically to understand the lived experiences, needs and motivations of potential users, and the challenges that they are likely to face in their own contexts.

There should also be an awareness – on the part of both the government and any partners – that these experiences, needs and motivations may vary substantially between segments of the target participants. For example, teachers of different ages and backgrounds might have very different needs. Good solutions should cater for this diversity (see Case Study 3, which provides an overview of a project in Jordan which combined high- and low-tech solutions for this reason).

Moreover, even where full assessments are undertaken at the design stage, successful interventions should be insights-driven throughout their implementation (see Case Study 2). This entails collaborative work with stakeholders across the system – including leaders – to gather data to monitor take-up and effectiveness, test assumptions, and adapt accordingly.

CASE STUDY TWO

Adaptive programming for online early years professional development in England

To address gaps in the quality of early years provision in England and to improve early education outcomes, the Department for Education (DfE) commissioned EDT to design and deliver the Early Years Professional Development Programme (EYPDP), an eight-month online training programme for early years practitioners. Since its rollout in 2019, nearly 5,000 practitioners across 2,500 settings have successfully completed the programme, and 91% of surveyed practitioners have rated the quality of the programme as good or very good.

EDT designed the online programme to meet the needs of busy early years practitioners who work long hours and have limited time for professional development. This contextual understanding generated a self-paced component of the course, which gives participants the flexibility they need, alongside facilitated webinars which serve as a touchpoint for motivation and engagement.

During the programme design stage, a robust evaluation model and tracking system were built into the eLearning platform to continuously monitor and evaluate the programme during implementation. After each module, participants are automatically prompted to complete a survey before progressing to the next module. This enables the collection of data and insights to enrich and adapt the programme. For example, survey findings after the first module indicated that participants felt that too much information was packed into the facilitated webinars, taking up discussion time, so EDT converted some of the webinar content into linked reading materials to free up more time and space for discussion.

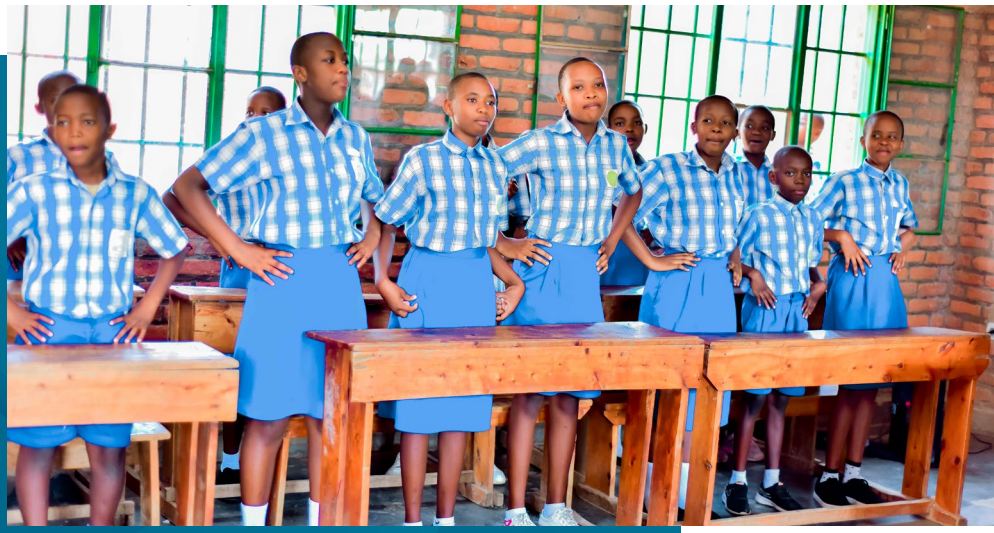
Participants are also automatically prompted to complete both a baseline and endline online survey, linked to the programme KPIs, to find out the degree to which practitioners feel more confident in supporting children based on the training. This enables EDT to automatically generate and compare data on the participants' starting points and what they hope to achieve, with what they believe they achieve and gain from training. Findings will be used to inform future EYPDP training design.

Inclusion: maximising access, engagement and impact

As part of our education-led, tech-enabled approach, we firmly believe that technology should only be used as a solution in education systems where it drives – rather than decreases – inclusion. As we have indicated, the use of technology can be both an enabler and an inhibitor of equitable, inclusive programmes. Edtech has huge potential to give us new approaches and opportunities to include those in marginalised and hard-to-reach communities. In Lebanon, for example, we have used simple technology such as WhatsApp to broaden access to training opportunities for Syrian refugee teachers, whose attendance at in-person sessions would have been rendered impossible by long journeys and adverse weather conditions.

However, in some contexts, the use of technology may not be viable. A one-size-fits-all approach is rarely appropriate, and a flexible approach which offers a range of technologies – both high- and low-tech– may be needed to ensure inclusion (see, for example, Case Study 3). In some cases, this will also involve a no-tech 'safety net' option alongside a technological solution. For example, in Kenya, many of the vulnerable girls we worked with on our Girls Education Challenge (GEC) programme – Wasichana Wetu Wafaulu ('Let our girls succeed') – were unable to access online learning opportunities when their schools closed amid the Covid-19 pandemic. We therefore deployed a no-tech option, with community health volunteers delivering printed learning materials, monitoring girls' engagement with learning, and encouraging parents and caregivers to support learning at home.

To be inclusive, edtech solutions must also be developed with consideration of other barriers to participation – beyond connectivity or access. Sometimes the complexity or unfamiliarity of tech solutions may serve as a deterrent to their intended users. To counter this, throughout the design process, there should be a focus on factors which influence and support the ability and motivation of participants to actively participate in and sustain their engagement with the intervention. This may include leveraging 'everyday' digital tools such as Zoom and WhatsApp alongside other programmes or applications. In Jordan, for example, our Evidence-Based Supervision (EBS) training combined the use of tools such as Padlet and Miro with Zoom sessions and WhatsApp groups to create a collaborative and continuous learning environment in which participants could engage with each other in real time, increasing their motivation and helping them to feel supported. Participants reported a high level of satisfaction with the training: 91% of supervisors reported improvements in teaching practices since the start of the intervention.



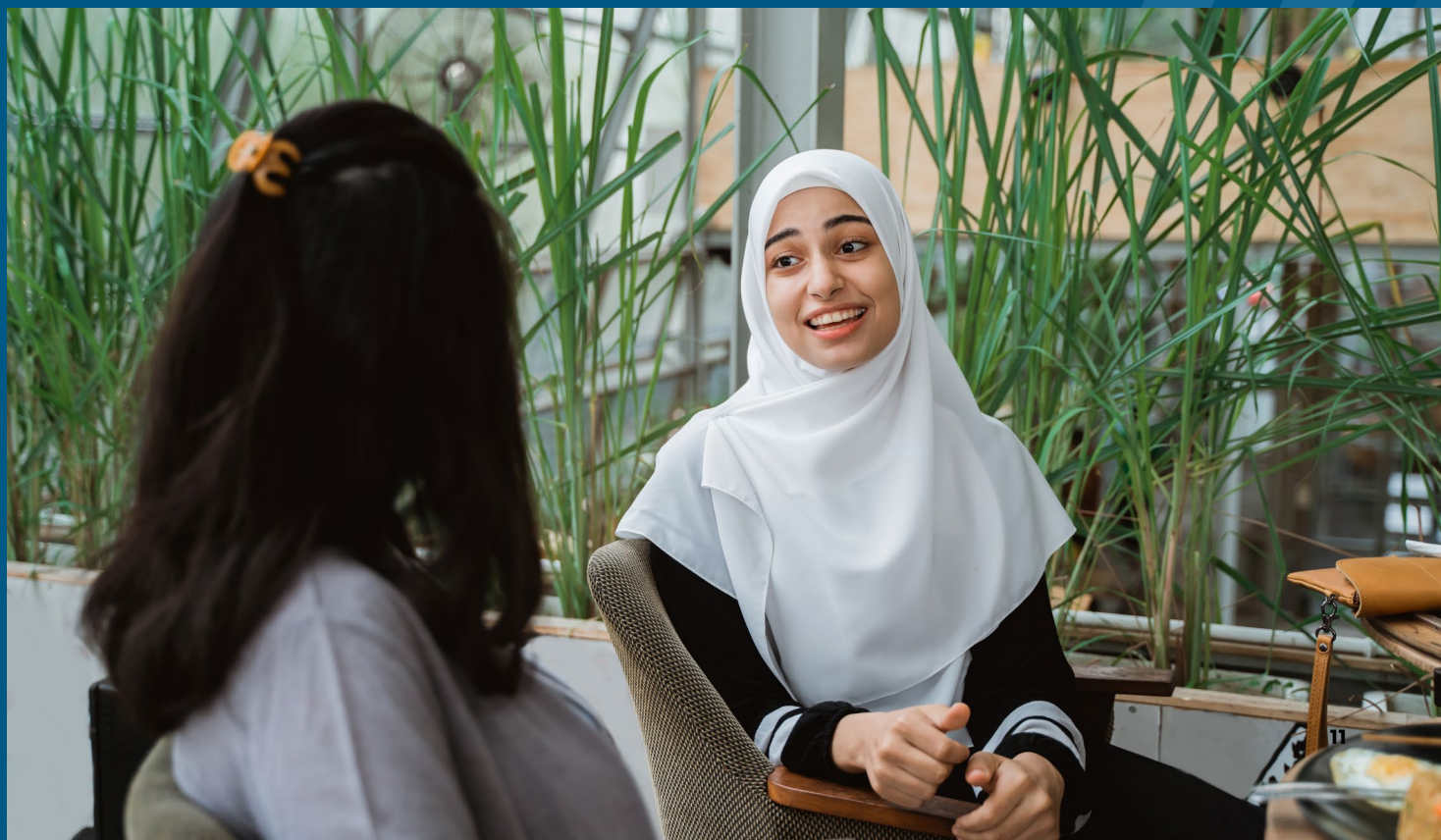
CASE STUDY THREE

Combining high- and low-tech solutions to support learning recovery in Jordan

In response to the Covid-19 pandemic school closures, EDT worked with UNICEF Jordan and the Jordanian Ministry of Education (MoE) to support the development and delivery of a remote, catch-up programme known as Learning Bridges. This programme provided weekly activity packs based on key learning outcomes for core subjects, for Grade 4 to 9 learners to complete at home. EDT led the digitisation of the weekly activity packs using the Padlet platform, which enabled cost-effective, high-engagement teaching and learning online.

However, to ensure inclusion and accommodate varying degrees of access to technology, we embedded a differentiated approach to the delivery of the activity packs from the outset. This included a no-tech option, whereby activity packs were printed and distributed to schools on a weekly basis for families without technology access to collect. Learning Bridges facilitators were also sent to remote areas to support with activities. To overcome connectivity challenges among low-income families, monthly data packages (about 10GB) were also provided to 33,000 students.

The programme has made a significant impact on the education system and has achieved widespread uptake across Jordan. In the first year of implementation, the intervention was implemented in over 70% of public schools, reaching almost half a million children.



Key recommendations

For government and system leaders, key recommendations for ensuring an education-led, tech-enabled approach to edtech programmes and partnerships include:

The need for realism, recognising that edtech reforms worldwide have often failed to deliver a good return on investment as a result of an over-optimistic view of the nature of the change process

The importance of a relentless focus above all on the educational change that is required in each context and, as a next step, a view of how far this can be achieved with support from the right technology

The significance of a systemic approach, so that the role of different actors in supporting the use of edtech - such as school leaders or colleges providing pre-service training - are given due attention when planning a solution

Consideration to how any change supported by technology can be sustained in the long term, with a clear plan for delivery, management, support, capacity building, and all financial and resourcing requirements

EDT

To find out more about EDT and edtech, our research, and how we are working to transform lives through education, please get in touch.

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