EdTech Hub

Clear evidence, better decisions, more learning.

Summarised Findings from the EdTech Hub Helpdesk

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About this document

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Notes

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About the EdTech Hub Helpdesk

The Helpdesk is the Hub's rapid response service, available to FCDO advisers and World Bank staff in 70 low- and lower-middle-income countries (LMICs). It delivers just-in-time services to support education technology planning and decision-making. We respond to most requests in 1–15 business days. Given the rapid nature of requests, we aim to produce comprehensive and evidence-based quality outputs, while acknowledging that our work is by no means exhaustive. For more information, please visit https://edtechhub.org/helpdesk/.

About this summary

As of December 2020, the EdTech Hub's Helpdesk has been active for nine months, responding to over 60 requests supporting decision-making on education technology. As we reflected on the requests received to-date, six commonly asked questions surfaced. This document summarises our responses to these questions along with several additional links that can direct you to further reading.

We hope that reading through this summary will be useful to policymakers, EdTech practitioners, new and returning Helpdesk requestors, and others to learn more about our major headlines on EdTech all in one place.

To all readers: please add your comments to this public document! We would like to know:

- How do these findings compare with your experiences?
- Will any of this affect how you do your work?

Click below to skip ahead, or keep reading to get the whole picture.

1. How do we reach marginalised learners using EdTech during Covid-19?

Marginalised learners include girls, refugees, learners with special educational needs and disabilities (SEND), learners from low-income backgrounds, those in rural and remote areas that may not have access to internet or high-tech platforms, and others. 'Reaching marginalised learners' is a simple stated aim but one that is difficult to implement, as its implementation greatly depends on the local context.

We recommend an evidence-based, multi-modal approach with a focus on low-tech, offline, and even paper-based initiatives. Designing an inclusive strategy requires collecting available education data that will inform the development of a multi-modal approach. A great starting point is UNICEF Innocenti's brief on equitable remote learning, which emphasises multiple delivery channels for learning and provides additional statistics on TV ownership, radio ownership, and internet access across countries.

Research suggests that EdTech programmes are more successful if they consider what digital infrastructure already exists, and how it could be put to better use. Important categories for consideration include device and internet availability, and existing digital infrastructure (e.g., radio or TV channels, learning management systems). It is also important to remember that technology on its own — without support, training, and integration with existing systems — has not been shown to raise learning outcomes.

For more information, you can check out EdTech Hub's suggested five-part education response to Covid-19. We also have additional resources on:

- using data to inform education decisions (see questions 1 and 2)
- building effective Covid-19 education response plans
- using EdTech in fragile, conflict, and violence-affected settings
- using EdTech for refugee education
- using EdTech to support learners with SEND
- providing distance learning to deaf children in Pakistan
- providing distance learning to those living in rural areas and urban slums in Pakistan
- reaching girls and supporting gender equity through EdTech
- reviewing the evidence on EdTech for girls' education

2. What are some good practices to support teachers to carry out remote learning?

There is significant evidence that teaching quality is one of the most significant determinants of learning outcomes in low- and middle-income countries. We know that teachers who are equipped with good pedagogical practices are crucial to engaging students in learning while schools are closed. Given that remote learning can impact the ability of teachers to be heavily engaged in learning, the role of non-formal educators — such as parents and caregivers or community-based teachers — has risen since mass school closures.

In a traditional classroom setting, effective teacher practices include well-structured lessons with frequent checks for understanding and adaptation to the needs of individual learners. Students benefit from high levels of interaction with teachers ('teacher presence') and a sense of community. Efforts to support educators to carry out remote learning should aim to foster these same practices. For example, radio programmes can prompt interaction between siblings listening together, or promote the atmosphere of a listener community by inviting individuals to submit questions via SMS.

Educators also need curriculum-aligned and contextually appropriate materials to support children's learning at a distance. Given that this is time-intensive, materials should be developed in partnership with schools and governments. Where possible, we recommend content curation over creation. Open Educational Resources (OER) are open-source, freely available materials that can be modified and shared with others. OER have proven to be especially useful as teaching materials; they have the potential to provide high-quality resources that can be adjusted to address local circumstances.

For more information, check out EdTech Hub's list of teacher education initiatives implemented in low-connectivity settings, many of which use OER, and a brief on characteristics of effective teacher education (and EdTech-enabled examples). We also have additional resources on:

- pedagogy for remote teaching during the Covid-19 pandemic
- OER within the sub-Saharan African context
- digital content curation for an e-learning environment in Zanzibar

3. What do we know about the use of low-tech options for education (radio, TV, mobile devices)?

A multi-modal and data-driven approach is well aligned with effective distance learning approaches recommended by EdTech Hub (see Question 1). We at EdTech Hub are passionate about taking a learner-focused, rather than technology-first, perspective to our work. For many low- and middle-income countries (LMICs), radio, television, and mobile devices present themselves as likely channels to reach a higher percentage of learners.

In addition to reading through this FAQ page, we also recommend that you check out our rapid evidence reviews on:

- radio
- television
- messaging apps and SMS

Radio

Damani and Mitchell (2020) highlighted the use of radio to promote problem-solving and student engagement during disruptions to schooling. Radio can have advantages in rural areas with limited electrical infrastructure since these devices can be operated using batteries and distributed at a low cost. However, the disadvantages of radio often include a lack of access to coverage in rural regions (i.e., lessons broadcast on a national station will not reach children in communities that cannot access the signal); this use case varies widely based on the country and is crucial to consider for the local context. While radio programming can be a cost-effective approach, especially when compared to other EdTech initiatives, it still requires significant implementation and maintenance costs.

For more information on radio, check out EdTech Hub's slide summary of interactive radio instruction (IRI). Examples of IRI are also included in this curated resource list, covering resources from Rising Academies, the Education Development Center, and others.

Television

Research supports the view that educational television can produce positive learning and socio-emotional outcomes and improve social reasoning. A study on Ubongo Kids, a Tanzanian television show, demonstrated positive learning outcomes for mathematics among children aged 7–16. The evidence suggested that Ubongo Kids was highly cost-effective due to low costs per viewer and a large viewer base (Watson, 2019). Moreover, educational television can support stigma reduction. Several studies point to the use of television to promote positive attitudes in children towards others with different backgrounds and cultures (Watson, 2020).

For more information on television, check out the World Bank's note on educational television during Covid-19.

Messaging apps and SMS

Messaging can be used across a range of learning activities, as a channel to both foster interactions and deliver content. A scan of relevant studies points to the important role that caregivers play in enabling mobile phone access (Jordan and Mitchell, 2020). Angrist et al. (2020) conducted a preliminary study on the effects of mobile-based interventions on learning outcomes for students in Botswana in the context of Covid-19 and minimizing learning loss. Early evidence supported that SMS text messages and phone calls were linked with learning gains of 0.16 to 0.29 standard deviations.

4. How do we roll out a national distance learning platform?

In light of Covid-19, several education decision-makers have considered setting up a Virtual Learning Environment (VLE) to mitigate learning loss. A VLE is a virtual space designed to support teaching and learning and can resemble anything from a curated content repository to a synchronous video-enabled learning space.

We first recommend that education planners zoom out and consider whether a VLE is the best way to address learning loss due to the pandemic. Many students in LMICs may not benefit from VLEs due to poor connectivity and / or a lack of technological hardware. Recent data from Senegal (Le Nestour et al., 2020), for instance, indicates that less than 1% of learners have used online courses to pursue education since the beginning of the Covid crisis. Programme implementers will need to consider how marginalised children will access VLEs, how content relates to the curriculum and how to support student engagement.

After addressing these considerations, education planners can then enter the discovery phase of rolling out a VLE, which consists of five focus areas:

1. Investigating the problem and defining the possible role of a VLE (e.g., who are the users? Should you build your own VLE or use a pre-existing platform?)
2. Investigating infrastructure readiness (e.g., what percentage of the population has access to the internet and electricity?)
3. Investigating educator readiness (e.g., how will the Ministry of Education support teachers in carrying out lessons using the VLE?)
4. Investigating student readiness (e.g., what percentage of students have access to the listed devices?)
5. Investigating content readiness (e.g., what digitised content is already available?)

Note that detailed questionnaires for each of these focus areas are included in EdTech Hub's brief on rolling out a national VLE.

An agile approach and iterative development are suggested. Small prototypes testing different VLEs can first be implemented in the alpha phase. After reflection, one VLE platform should be selected for the beta phase. In this phase, the VLE can be piloted in up to 100 schools / community spaces and tested with a wide range of curated content. Importantly, a teacher professional development plan should be rolled out in parallel with the VLE. Once the beta version is tested and working without glitches, the VLE can be rolled out nationally.

For more information, check out EdTech Hub's brief on the use of virtual learning environments and learning management systems during the Covid-19 pandemic. We also have resources adapted from technical assistance provided to the Zanzibar Ministry of Education and Vocational Training (MoEVT) on deploying an e-learning environment:

- a short overview of the work
- feasibility assessment for the e-learning environment
- technical guidance on digital content curation

5. How do we support the use of EdTech for girls and address the digital gender divide?

In general, access to technology has been shown to be just as, if not more, empowering for girls as for boys. However, the existing gender digital divide means that girls tend to have less access to technology, both inside and outside the classroom (Webb et al., 2020).

To ease the divide, education professionals can engage in the following actions:

1. Raise parental awareness of available out-of-school education resources and of the benefits that girls' access to EdTech could bring.
2. Explore a range of ICT options (mobile devices, television, radio) to offer girls additional ways to access education.
3. Ensure that women are represented among presenters and producers of educational content.
4. Create safe spaces (virtual and / or physical) where girls can interact and learn together. For girls with access to mobile technology, this can be facilitated through social media platforms. When technological access is limited, marginalised girls may still need to meet with other girls in-person (Naylor & Gorgen, 2020; Webb et al., 2020).

Safeguarding initiatives should also be considered, specifically regarding the increased risks of online abuse associated with providing girls with internet access for educational purposes. Education responses to the Covid-19 crisis should further seek

to leverage local networks and coordinate with other sectors to reach marginalised girls.

For additional recommendations, please read EdTech Hub and Education Development Trust's report on education for marginalised girls and EdTech responses to Covid-19. We also have additional resources including:

- a rapid evidence review on girls' education and EdTech
- using technology to support gender equity, social inclusion, and out-of-school learning
- using blended learning to support the education of marginalised adolescent girls

6. How can countries use EdTech to mitigate learning loss as schools reopen?

69% of countries plan to introduce remedial education programmes and 37% plan to introduce accelerated learning programmes as schools reopen (Nugroho et al., 2020). Technology-supported remedial programmes and accelerated learning programmes offer promise to improve learning outcomes. However, it is important to also assess the appropriate use of technology for such programmes. In practice, technology may not be a feasible option for reaching the children who need to be reached.

In general, the majority of tech-enabled remedial programmes leverage tablets or computers. A handful of programmes have used mobile technologies to support remediation; we expect that this will become more common given their increasing availability in LMICs. For example, the India BridgeIT programme provided smartphones with a prepaid SIM card to support Science and English learning for fifth and sixth-grade students. Teachers received training and support on how to use the software, including ordering and downloading curriculum-based videos. The India BridgeIT programme was shown to have a significant positive effect on student learning across both subjects (Carlson, 2013).

In addition, EdTech (radio, television, mobile phones, internet campaigns) can be used to reach children who are at risk of not returning to schools when they reopen (Kaye et al., 2020; Nugroho et al., 2020). In 2015, during the ebola epidemic, solar radios were distributed to communities in Guinea by UNICEF. Once schools reopened, the Ministry of Education broadcasted messages about the start of the school year through 28 radio stations (Interagency Collaboration on Ebola, 2015).

For more information, please read EdTech Hub's brief on back-to-school campaigns following disruptions to education. We also recommend that you review:

- UNICEF's brief on Covid-19: how are countries preparing to mitigate the learning loss as schools reopen?
- curriculum reform and building back better