# How Learning Continued during the COVID-19 Pandemic

## GLOBAL LESSONS FROM INITIATIVES TO SUPPORT LEARNERS AND TEACHERS

OECD

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

LAUNCH VERSION

# How Learning Continued during the COVID-19 Pandemic

GLOBAL LESSONS FROM INITIATIVES TO SUPPORT LEARNERS AND TEACHERS

Edited by
Stéphan Vincent-Lancrin, Cristóbal Cobo Romaní
and Fernando Reimers

The opinions expressed and arguments employed herein are solely those of the authors and do not necessarily reflect the official views of the OECD, its Member countries, the World Bank, its Board of Executive Directors, or of the governments they represent. The OECD and the World Bank do not guarantee the accuracy, completeness, or currency of the data included in this work and do not assume responsibility for any errors, omissions, or discrepancies in the information, or liability with respect to the use of or failure to use the information, methods, processes, or conclusions set forth.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The names of countries and territories used in this joint publication follow the practice of the OECD.

**Please cite this publication as:**
Vincent-Lancrin, S., C. Cobo Romaní and F. Reimers (eds.) (2022), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing, Paris, https://doi.org/10.1787/bbeca162-en.

ISBN 978-92-64-53821-4 (print)
ISBN 978-92-64-81909-2 (pdf)

**Photo credits:** Cover © Wirestock Creators/Shutterstock.com.

Corrigenda to publications may be found on line at: www.oecd.org/about/publishing/corrigenda.htm.

# Foreword

The COVID-19 pandemic has led to the closure of school buildings in most countries around the world and has interrupted the school attendance of at least 1.5 billion students in 2020 and 2021. Although the pandemic has shown that countries' current learning infrastructures are highly vulnerable to external shocks, many education systems have been able to adapt in some way. Schools and educators have shown great resilience in trying to compensate for the crisis, and while they need to be better prepared for similar challenges, they have demonstrated leadership, initiative and an innovative spirit that we can all learn from, both during and after the crisis.

When the Harvard Global Education Innovation Initiative, HundrED, the OECD and the World Bank came together to start this project, it was with this in mind: that in every society, amidst the crisis created by the pandemic, there were individuals and organisations, in government and in civil society, that against the odds were creating ways to sustain educational opportunity. We decided to join forces to document a variety of examples of what education stakeholders could do. We anchored our approach on two premises. First, when practitioners solve problems, they gain knowledge that can be used to help others who may be experiencing the same issues, while also becoming more equipped to face future problems. Second, some insights and nuances about how programmes and policies are implemented are best understood by those who participated in their design and implementation. For this reason, we decided to identify innovations and document them by working alongside those who led them.

It was an audacious proposition to design and execute a global study of innovation at a time when we were all in lockdown and relying on digital technologies to communicate, and when we also knew it was obviously too soon to know what was working, for whom and with what results. Our goal was simply to try to offer inspiration to those who, like us, were determined to prevent the complete shutdown of education. Over time we learnt – from our virtual conversations with colleagues in a range of jurisdictions – that many education leaders were on the edge of giving up, and that governments were sometimes ready to focus all their energies on the public health emergency, leaving their education efforts on hold. We were guided by the ethical imperative that education should continue against all odds.

To achieve this goal we sought to identify and disseminate examples of how this was being done, however imperfectly, as schools were shut down. We also had another motive: to describe and document the variety of approaches tried during the pandemic so that later we can look back on this period with qualitative information, and perhaps new ideas to reshape education in the future.

This report compiles the 45 education continuity stories that were published on the OECD and World Bank websites. They documented in real time the innovative initiatives undertaken to keep learners (or teachers) learning during the first wave of the pandemic (March to December 2020). Coming from the five continents, these initiatives were implemented in low, middle and high-income countries, by central or local governments, non-governmental organisations and private companies. They cover early childhood through to tertiary education, including examples of comprehensive initiatives from government, as well as initiatives targeting one specific population (e.g. students with special needs) or learning aspect (e.g. students socio-emotional skills or teachers' professional learning). As almost all of them involve some kind of technology as part of their contingency plan, the stories not only give examples of how online platforms,

radio, TV, etc., were used, but also an interesting snapshot of where countries' digital (or remote) learning infrastructure was at the beginning of the pandemic. An Index capturing the main dimensions of these innovations will help readers navigate them.

The first part of the report draws some lessons from these innovations and looks toward the future. Indeed, the crisis has made the shortcomings of education systems more visible; insufficient learning and unacceptable achievement gaps must be addressed. Some lessons of the crisis can help us build more effective and equitable education systems. Education systems will need the spirit of innovation and quick experimentation that characterised the pandemic, especially at its beginning, with the strong leadership of so many education stakeholders, the widespread willingness to collaborate and establish partnerships across all types of organisations and across countries, the ambition to go quickly for the good rather than slowly for the best, the re-engagement of families and communities in the upbringing of young people, and the willingness to reimagine the use of digital technology tools in education. In spite of their imperfection, the ways technology was used to support remote learning can inspire the upcoming integration of digital tools in education. Financial and human resources will be needed to reshape better education systems worldwide, but they should be invested to build a new future rather than to get back to old practices that did not work so well prior to the pandemic. Reflecting on what we learnt from the crisis will help us to rebuild in a stronger way.

| **Fernando Reimers** | **Jaime Saavedra** | **Andreas Schleicher** | **Saku Tuominen** |
|---|---|---|---|
| Global Education Innovation Initiative, Harvard University | Global Education Practice, World Bank | Directorate for Education and Skills, OECD | HundrED |

# Acknowledgements

This report stems from a joint initiative of the Harvard Global Education Innovation Initiative, HundrED, the OECD and the World Bank that was initiated by Fernando Reimers (Ford Foundation Professor of the Practice in International Education and Director of the Global Education Innovation Initiative at Harvard University), Jaime Saavedra (Global Director for Education at the World Bank), Andreas Schleicher (OECD Director for Education and Skills), and Saku Tuominen (Co-founder and Creative Director of HundrED, a not-for-profit organisation seeking and sharing inspiring innovations in primary and secondary education).

The report was edited by Stéphan Vincent-Lancrin (Senior Analyst and Deputy Head of Division at the OECD Directorate for Education and Skills), Cristobal Cobo (Senior Education and Technology Specialist at the World Bank) and Fernando Reimers.

The template of the education continuity stories was co-designed by Cristobal Cobo, Fernando Reimers, Jaime Saavedra, Andreas Schleicher, Saku Tuominen and Stéphan Vincent-Lancrin.

Stéphan Vincent-Lancrin coordinated the effort of the four organisations and edited the draft stories with the support of Cassie Hague and Koen Van Lieshout (Analysts at the OECD).

Each institution had their own coordinator identifying the stories, providing a first editing, and finalising them after the final editorial comments and feedback: at Harvard University, it was Fernando Reimers; at HundrED, Chris Petrie (Head of Research); at the OECD, Stéphan Vincent-Lancrin; at the World Bank, Cristobal Cobo. The “education continuity stories” were published on the OECD and World Bank websites on a continuous basis after going through the OECD editorial process.

At the OECD, the initial stories were copy-edited by Rose Bolognini, Cassie Hague, Koen Van Lieshout and Stéphan Vincent-Lancrin, prepared for publication by Madeleine Gereke and Sophie Limoges, reviewed and cleared by Andreas Schleicher, who provided continuous feedback and encouragements. The stories were posted on a dedicated webpage designed by the education communications team supervised by Cassandra Davis: Jason Fallow, Henri Pearson and Alison Burke. The Index tables were prepared by Gwénaël Jacotin. Vincent-Lancrin coordinated the organisation of accompanying webinars implemented by the communications team. The output is part of the OECD Centre for Educational Research and Innovation (CERI) Project on “Smart Data and Digital Technology in Education: AI, Learning Analytics and Beyond”. Tia Loukkola, Head of the Innovation and Measuring Progress, gave helpful comments. The initiative and final report benefited from the ideas and feedback from colleagues at the OECD as well as in country delegations or ministries: they are gratefully acknowledged.

At the World Bank, Cristobal Cobo coordinated and supervised the editorial process and content of the continuity stories as well as webinars, podcasts, and other products related to this partnership under the overall guidance of Jaime Saavedra and Omar Arias (Manager of Global Engagement and Knowledge at the World Bank) and the support of the World Bank’s EdTech team (Robert Hawkins, Alex Twinomugisha, Iñaki Sanchez Ciarrusta, Mike Trucano, and Maria Barron Rodriguez), the World Bank’s Education Global Practice Management Team and country task team leads who kindly supported and facilitated this initiative as well. Special gratitude to all of the authors, both external and World Bank colleagues, who dedicated

their time and effort to produce these continuity stories. With apologies for any regrettable omissions and our sincerest thanks to everyone, named or anonymous, who graciously supported this initiative.

The final education continuity stories published in this report were copy-edited and harmonised by Jennifer Allain (Literal). Madeleine Gereke (OECD) prepared the publication and Sophie Limoges (OECD) supervised the publication process.

# Table of contents

## FIGURES



## TABLES

# Executive summary

The COVID-19 pandemic has led to school closures in most countries around the world and has interrupted the school attendance of at least 1.5 billion students in 2020 and 2021. Although the pandemic has shown that countries' current learning infrastructures are highly vulnerable to external shocks, many education systems have been able to adapt to the situation in some way. Schools and educators have shown great resilience in trying to compensate for the crisis, and while they need to be better prepared for similar challenges, they have demonstrated leadership, initiative and an innovative spirit.

During the first wave of school closures during the COVID-19 pandemic, the OECD, the World Bank, the Global Education Innovation Initiative at Harvard University and HundrED joined forces to document a variety of examples of what education stakeholders did to allow academic learning to continue. This report brings together a collection of 45 case studies that were initially published on the OECD and World Bank websites between May 2020 and March 2021 (Part II).

The "education continuity stories" describe specific solutions implemented by government, non-governmental organisation or companies to support teachers and learners. Many of these solutions had a strong technology dimension. These stories describe the proposed solution in terms of objectives and implementation, but also reflect on the challenges and success factors, the replicability of the initiative in other contexts, and the evidence of success that was gathered (at the time of initial publication). While most initiatives focus on primary and secondary education, they cover all levels of education, and illustrate innovations that have been undertaken around the world, in countries with different contexts, culture and levels of income.

The case studies illustrate that those initiatives:

- Relied on multi-modal solutions that combined the use of multiple media (online platforms, TV, radio, paper worksheets, text messaging, social network channels, etc.);
- Usually attempted to address inequalities in the access to connectivity and equipment (and often on other aspects such as nutrition), when they were not primarily about addressing inequity;
- Targeted learners, teachers and parents and mobilised different actors in the education ecosystem;
- Built on prior knowledge and resources that were expanded or repurposed during the crisis;
- Mobilised networks and partnerships to quickly design and implement their solution;
- Considered awareness of the solution, reach of the targeted population and sustained learning engagement as significant challenges;
- Improved their solution thanks to a qualitative monitoring and feedback strategy.

The initial objective of those "education continuity stories" was to inspire or support other actors in different countries facing similar challenges so that they could adapt some aspects of solutions developed elsewhere to their context. The case studies can still fulfil this role while the crisis continues. Their collation in a single publication also contributes to the retrospective analysis of the crisis. It provides a basis to draw lessons from the successes and challenges of those educational innovations to reshape teaching and learning in a more effective way.

This first part of the report (Part I) helps readers navigate the education continuity stories and distils the authors' silver linings of the crisis from their different perspectives – while reminding the readers that those contingency plans were far from perfect substitutes for in-person education.

Vincent-Lancrin (chapter 1) presents the education continuity stories by highlighting the importance of multi-modal solutions relying simultaneously on several types of technology in low- as well as high-income countries, the involvement of teachers in the development of the solution and new forms of engaging parents. He showcases how many initiatives tries to address inequity and how they dealt with other challenges, before showing how most innovations relied on knowledge networks, partnerships and quick prototyping of their solutions. Noting that the pandemic accelerated the transition to digital tools in education and showed their opportunities, he calls for and sketches a global agenda to advance digital education in the coming years.

Barron Rogriguez and Cobo (chapter 2) focus and low- and middle-income countries and highlight the innovative uses of low tech tools such as radio, television or mobile phones in remote and blended learning. Mobile phones were for example one of the most often used tools to facilitate the exchange of learning materials as well as to facilitate interaction between parents and students both in urban and rural contexts. These low-cost devices connected students and teachers in ways that were uncommon before the crisis showing that their use could be transformative for education. They identify emerging lessons that lower middle-income countries and high-income countries may find useful and replicable.

Reimers (chapter 3) notes the dangers of only focusing on the negative and disruptive aspects of the global pandemic and demonstrates the long term value of reflecting on the silver linings of the crisis. After recalling the context in which the education continuity stories were developed and some guidance provided to countries at the beginning of the pandemic, he analyses the focus of the innovation in the early phase of the pandemic as well as the conditions that enabled their emergence. He concludes with ten lessons from the pandemic, recalling how technology made this initiative and the continuation of education possible, and how in general societies increased their value of education. He also points to how the pandemic showcased the importance of holistic education, collaboration, and global collaboration.

Petrie (chapter 4) focuses on innovations from non-governmental organisations and supplements the education continuity stories with HundrED's *2021 Global Collection* documenting around 100 innovative practices and solutions around the world. After a review and analysis of some of the trends, he highlights eight lessons from the health crisis, noting the importance of innovations focused on disadvantaged students, socio-emotional skills, and the wellbeing of innovation leaders. He then proposes eight vision statements for the future of education, arguing for risk tolerance, hybrid models of learning, student agency, and support for teachers.

# Part I
# Lessons for the future

# 1 Educational innovation and digitalisation during the COVID-19 crisis: lessons for the future

Stéphan Vincent-Lancrin, OECD

This chapter identifies some lessons from the initiatives undertaken by governments and non-governmental organisations to ensure education continuity during the first wave of the health crisis. Having to go without much notice from in presence to remote learning required the quick repurposing and use of resources as well as a spirit of innovation that could inspire the reshaping of education systems. The reliance on digital technology highlighted the promises but also the current shortcomings of digitalisation and calls for an international collaborative agenda to make the best of digitalisation in education after the pandemic.

## Introduction

During the first wave of lockdowns of the COVID-19 crisis (March-June 2020), most (though not all) countries tried to ensure some form of learning continuity while schools were closed, usually by making remote education resources available and asking teachers to remain responsible for the students in their classes. Information about country efforts in providing support have been documented through different surveys of ministries and reports during the crisis (Schleicher and Reimers, 2020[1]; OECD, 2021[2]; OECD, 2021[3]; UNESCO, UNICEF and the World Bank, 2020[4]; The World Bank, UNESCO and UNICEF, 2021[5]).

The collection of case studies in this book supplements this information by documenting in more details how education continuity was assured from the double perspective of the actors who designed the innovation and at least one external analyst. Initially, the objective of those "education continuity stories" was to inspire or support other actors in different countries facing similar challenges so that they could adapt some aspects of solutions developed elsewhere in their context. The case studies can still fulfil this role while the crisis continues. Their collation in a single publication also serves different purposes. They can also contribute to the retrospective analysis of the crisis once it is over. They will provide a basis to draw some lessons from the successes and challenges of innovations that governments and other education stakeholders had to design and implement in an emergency mode. In many ways, the pandemic and sudden closure of school buildings could be seen as a stress test for education systems to implement remote learning solutions, but also just to quickly implement innovative solutions.

The contingency plans to continue education during the school closures (or restricted access to school) targeted different objectives and different stakeholders. A variety of stakeholders initiated them, independently or collaboratively, including ministries and national governmental agencies, local public actors, non-governmental organisations, organisations newly created as a response to the crisis as well as private companies. Some of the initiatives could be grouped in "families" of solutions, although their differences remind us that the devil lies in the details and that different contexts require specific adaptations and implementation models. While some of the contingency plans present an overall solution, many education continuity stories cover just one or two elements of a more complex solution, so as to describe them in more depth. The collection shows the complexity of the education innovation ecosystem but also the range of actors, competences, resources and ideas learners, teachers and parents around the world could benefit from.

This chapter provides a thematic overview of the education continuity stories. The first section covers the types of learning support that were given to learners and teachers. The second section focuses on selected challenges faced by the stakeholders and how they were addressed. The third section highlights some of the conditions that made those initiatives feasible. Finally, looking forward, the fourth section proposes further collaborative work to advance one aspect that became particularly salient during the crisis: digitalisation in education. The conclusion summarises some of the lessons for the post-pandemic future of education.

## Supporting the continuation of education during school closures

### *What learning resources and tools were provided?*

Many OECD countries have set up online platforms with learning resources, but accompanied them with TV education, radio education or other means in order to use technologies that are more accessible to learners from different socio-economic background or to learners living in different parts of their territory. Most of these infrastructures target different possible users (students, teachers, parents) and often all of them simultaneously. Multimodal infrastructures, defined as solutions using different technology media or channels to provide access to learning materials, have thus become the signature of digital learning

infrastructures during the pandemic. Multimodal solutions include a variety of technologies, from paper learning packages handed or mailed to students, digital learning resources provided on memory sticks or CD-Roms, TV, radio, digital resources on online platforms working with phone and Internet services, through to the direct use of mobile phones.

For example, Mexico built on its long-standing TV education experience (Telesecundaria) to develop *Aprende en Casa*, which mainly draws on audiovisual content broadcast across a network of TV stations and streamed through Internet platforms (chapter 28). During the school closures, the content was expanded from secondary education to all levels of education and was broadcast at specific times for each educational level, complemented with learning activities and assessment questions available online or delivered in print in unprivileged areas with no Internet access. During the first wave of the health crisis, the programme also delivered 300 000 printed educational materials to students from rural and isolated communities with no Internet access, and included a special radio strategy to reach students from indigenous communities.

Several similar initiatives could be observed in middle- and low-income countries. For example, in Madhya Pradesh (India), the state developed digital and non-digital programmes under the campaign "*#ab padhai nahi rukegi*" *(# learning will not stop*) to ensure learning continuity during school closures (chapter 20). The non-digital programmes for students included school lessons on the radio for primary school grades (1-8), educational television programmes for secondary school grades (9-12), as well as books, worksheets, and one-on-one teacher interactions for all grades. The digital learning component, the "Digital Learning Enhancement Programme" (DigiLEP) shared curated learning material for all grades through WhatsApp groups. The CM RISE digital teacher-training programme supported online teacher professional development. A TopParent mobile application was developed to help parents monitor primary school students' learning. Interestingly, the initiative was thus not only multimodal but also multi-stakeholder: it developed solutions targeting learners, teachers and parents. Initiatives based on multimodal platforms were developed in other Indian states, for example Nagaland (chapter 23), and several other countries, such as Pakistan or Peru (chapters 32 and 33). Where access to radio could be complicated, podcasts were developed instead, for example in Colombia (chapter 11).

Multimodal solutions do not characterise the response of middle- and low-income countries only though. In countries such as Finland, France, Latvia, or Spain, similar approaches were used. In Spain, the Ministry of Education launched a web portal, *Aprendo en casa* (Learn at home), bringing together educational resources, online training, tools and apps for teachers, families and students (chapter 39). One aspect was the partnership with the national TV to broadcast 5 hours of education programmes every morning during the school week – that could then be watched on replay on the portal and used by teachers as learning resources. In Latvia, the Ministry of Education developed a TV education platform called "Your class" (chapter 27). In Finland, TV materials (that were not broadcast) were made available to teachers and learners (chapter 16). In France, the Ministry of Education supported learning with a variety of learning resources delivered online, by mail, as well as on TV and radio (chapters 17 and 18).

While technologies such as TV or radio used to be criticised because of their lack of interactivity, one lesson from the crisis is that they can become part of an active learning strategy by being supplemented with interactions via phone or even paper-and-pencil assignments. The next-generation infrastructure should be more intentional in mobilising all these different media and ensure their complementary so that education resources can reach all students in an effective way and provide them with additional (or alternative) learning opportunities.

### *The role and support of teachers*

In a number of countries, teachers played an essential role in the development of learning continuity solutions. In Finland, Yle, the Finnish National Broadcasting Company, set up a small in-house team to select the resources that could be useful for distance learning. Yle opened up a Facebook for "forerunner"

teachers, whom they identified and invited by visiting the most popular Finnish Facebook groups for teachers. Teachers were asked to test and improve the service. Within days, they launched a special service, *Yle Etäkoulu* (Yle Distance School), to disseminate these educational resources (chapter 16). The teachers provided instant feedback on an ongoing basis on what they understood and what they did not, what was useful and what was lacking. The involvement of teachers in the definition of the TV programme allowed for its constant improvement and relevance.

In Korea, in consultation with the Ministry of Culture, Sports and Tourism, the Korean government also temporarily relaxed copyright rules to allow teachers to produce online class content using existing content materials. Furthermore, a website called "School-On" was established to provide a platform for teachers to exchange and share self-created online class content and class information. 58.4% of the content was created by teachers.

Several other initiatives were initiated by teachers to support learners as well as other teachers. Organisations belonging to the global "Teach for all" network developed different initiatives in their countries: Teach for Chile designed a radio/podcast programme designed for students and their family (chapter 9); Teach for Colombia developed a similar initiative supplemented with support provided by WhatsApp (chapter 11); Teach for Peru developed some of the TV and radio programme aired by the government as well as a "leadership training" for some of their peers with the aim of continuing the development of 21st century skills in line with its recent curriculum reform (chapters 34 and 33).

Finally, some initiatives focused on teacher professional development. Edcamps, organised by teacher volunteers in which educators lead their own learning experiences, is an example of the kind of professional development which has emerged during the pandemic. It builds on the idea that teachers can learn from each other to enhance their professional skills with the goal of improving student outcomes. Since March 2020, online Edcamps have supported many teachers to learn about and share their experiences with teaching remotely during the COVID-19 crisis, as exemplified in Ukraine and in the United States (chapter 47). Edcamp Ukraine hosted a national online Edcamp, "High Five for Education". In the United States, Digital Promise hosted a series of online Edcamps collectively titled "Edcamp: Powerful Learning at Home".

In Flanders (Belgium), KlasCemens provides a good example of government-supported teacher network, created in 1998 and designed as a "community for and by teachers", targeting teachers at all education levels, including teachers in adult education and student teachers (chapter 5). A similar platform was created in England (United Kingdom) during the crisis, described as a platform by teachers and for teachers (the National Oak Academy) but supported by the government, and in Korea, one called "let's go to school" was also launched.

These models could remain powerful for the recovery.

### *A new role for parents?*

During the pandemic parents have become more involved in their children's academic learning. In fact, many initiatives tried to proactively involve them in their children's learning. This was particularly the case for early childhood education initiatives.

In Maranhão (Brazil), a state programme targeted parents by developing a family engagement curriculum offering them concrete suggestions to encourage young child learning by interacting with them during daily routines and household tasks (chapter 6). In Colombia, "My Hands Teach You" offers an example of collaboration between state services promoting comprehensive early childhood development and involving pedagogical, nutritional, health and psychosocial interventions. It targeted all families with vulnerable children aged zero to five (and pregnant women) through a multimodal approach ranging from billboards to online resources, while prioritising those with greatest need (chapter 14). In India (Madhya Pradesh),

the government developed a mobile application called TopParent to help parents keep their children (aged 3-8) engaged in learning (chapter 20).

Initiatives to support parents were not limited to early childhood education and younger students though. In the United States, “Wide Open School” offered resources for educators and families aiming to develop disciplinary knowledge, but also creativity, critical thinking or social-emotional skills at all levels of education, while others just supported family and informal learning activities. Beyond offering access to curated resources, the platform also suggested a daily schedule to help students and families have a good balance of activities. The overall idea was to help parents offer their children a mix of activities balancing balance academic and family activities when they spent most of their time together (chapter 46). In some education districts, parents were a secondary target in the district’s strategy. For example, at the Central Falls district (in Rhode Island, United States), particular attention was paid to parents speaking a different language than English at home and learning resources were provided in several languages so that all parents could support the learning of their children. Multi-language staff was available at all time to interact with families and support them (chapter 44).

Educational policy and practice rely on some level of engagement of children’s parents. Some of the initiatives during the pandemic went much further than usual in both accompanying parents in supporting their children and in turning the family activities and knowledge into learning opportunities. These practices and mindset could inspire new ways for education systems and education stakeholders to engage parents and families after the pandemic.

## Addressing challenges

All case studies highlight specific challenges the documented initiatives wanted to address or that they had to overcome during their implementation. One challenge that was pervasive was of course the lack of time and the need to respond quickly to the adverse situation. Ensuring that the health crisis would not exacerbate existing inequalities was certainly one of the most common objective of the initiatives. In addition to inequity, at least two other challenges are worth mentioning: curating educational resources and keeping students engaged in learning.

### *Addressing inequity*

Reinstauring some level of educational equity has been a key challenge of many responses to the school closures. Stakeholders immediately recognised that the pandemic could have a stronger adverse impact on less advantaged students, students in rural areas, or students that face learning difficulties.

The crisis seems to have reminded everyone that part of students’ learning takes place at home, where housing and other material conditions for learning differ across households. Teachers faced a similar problem, as they often had to share their living (and often work) space with family, including children. In some ways, school as a social place may give the impression that all the formal teaching and learning takes place in school, making the learning conditions outside of school irrelevant. School closures forced everyone to depart from this assumption and to think (to some extent) about students’ learning conditions at home. Many of the documented contingency plans have tried to level the playing field by targeting measures related to nutrition, technology or social support to students and families that needed it the most. (There was obviously not much that could be done in terms of housing conditions.) In many ways, the pandemic has exposed educational inequalities – as much as it probably exacerbated inequity.

In the state of São Paulo (Brazil), one of the first measures of the State Department of Education was to deal with nutrition (chapter 7). Public schools in São Paulo usually offer one free meal to all students on a daily basis. But during school closures, the State Department of Education decided to target students living in extreme poverty and launched a social support programme called “Merenda em Casa” aimed at

providing food to students from families in the lowest quintile of the income distribution by transferring a cash allowance using a platform called PicPay. For students whose families do not receive Bolsa Família, a national cash transfer programme, the allowance was doubled by donations from Comunitas, a national non-profit organisation that promotes public-private partnerships. Several other initiatives also targeted nutrition. For example, in the United States, a decision allowed to extend the federal nutrition programme to children attending a school to its whole family. One of the first measures of the Phalen Leadership Academies was thus to provide free meals to the families of its students at dedicated "grab and go" locations (chapter 45).

A second concern that needed to be addressed in many places related to connectivity and the availability of devices. This took mainly three forms: providing digital devices as a donation or loan to students and families; supporting families with no Internet access or data package subscription; providing free access to some educational platforms so they could be accessed at no cost by families using limited data packages.

In Colombia, the national government created a learning resources platform for mobile phone (movil.colombiaaprende) and published a decree requesting mobile operators to provide zero-rating conditions for access to specific education services and websites (both voice and data). The government reached an agreement with mobile and Internet operators ensuring all inhabitants have access to educational content and guidelines, in particular lower income households, with a cap at about USD 20 (chapter 13).

In Korea, in cooperation with the Ministry of Science and ICT, Statistics Korea, local governments and 17 Metropolitan and Provincial Offices of Education along with private companies, the Ministry of Education provided digital devices and subsidised Internet subscription fees to students from disadvantaged backgrounds to fully support all students with online classes nationwide. All students who apply for digital devices could rent them at no cost. As of April 2021, 5.3% of all students (that is, 280 000 students) had rented digital devices (Government of the Republic of Korea, 2020[6]).

In France, the Ministry of Education also lent equipment to eligible families and its digital education advisers worked with local authorities to identify local IT needs and solutions. To that effect, it established two partnerships with the public mail service: one to print, deliver and return paper learning worksheets for students with no connectivity; a second to deliver the equipment lent by their schools or acquired by local authorities to the eligible families (chapter 18).

In the United States, many school districts lent devices to students who did not have one or supported families whose mobile subscription was suspended. This was for example the case at the Phalen Leadership Academies, which raised funds to provide equipment to its students. At the Central Falls public school district, equipment was also provided, but many families struggled to use the materials and eventually preferred paper worksheets. The Wide Open School initiative also got private companies to provide equipment to US students who needed it.

While the "digital divide" was expected (and did materialise) in low and middle income countries, it is noteworthy that high income countries experienced more difficulties than expected. While statistics showed a high level of household equipment, relatively small percentages of unequipped households turned into large numbers of households and led to logistical challenges in some countries. Moreover, in most of these well-equipped countries, there was also a quality problem: computers sometimes proved to be too old or insufficient in number when the whole household needed them at the same time; connectivity was unstable; mobile phone subscriptions were just theoretical as they had been suspended. Moreover, families with no prior equipment did not always have the skills to use the provided devices and hotspots.

One lesson of the pandemic seems to be that the digital divide has not disappeared in OECD countries. Although information technology has become more pervasive, should education increasingly rely on digital resources and tools for homework or make remote learning a more important component of education after

the pandemic, public policies ensuring equitable access to devices and technology will have to be reviewed and strengthened.

### *Navigating online educational resource*

Surprisingly, one of the main challenges in the first weeks of the health crisis pertained to the identification and curation of digital learning resources. This was perhaps especially true in countries with widely spoken languages such as English and Spanish. As a result, a variety of actors first contributed to the emergency by identifying and tagging existing platforms of open educational resources as well as the resources themselves so that teachers, learners, schools and parents internationally could use and adapt them. This is for example the first collaborative contribution of the Harvard Global Educational Innovation initiative, HundrED, the OECD and the World Bank (Reimers et al., 2020[7]), which organised resources according to language, subjects, disciplines and targeted skills (cognitive, intra-personal and inter-personal skills).

While other similar initiatives could be mentioned, the education continuity stories show that this is also the typical first activity that many education organisations undertook within countries. In the two US district and school network featured in the report, education staff spent significant time to identify and curate online resources for their teachers – in one case with the additional willingness to provide resources in Spanish so that parents from its large Spanish-speaking population could more easily support their children (chapters 45 and 44).

The “over-abundance” of digital learning resources was often identified as a challenge. In many cases, curating the resources consisted in reducing their number and making sure that they were relevant to the curriculum and approaches taught by teachers. In spite of powerful search engines on the Internet and within these platforms, there was no easy and time-efficient way for teachers and learners to curate the host of resources available, especially where curricula are decentralised and left to the discretion of regions, municipalities/districts or schools. Where digital learning resources were already mapped against the national curriculum and organised through a common taxonomy (e.g. in France, see chapter 17), educational resources became more readily available to all education stakeholders and this time-consuming curation stage became more time-efficient.

Technology progress might help teachers and learners to more easily identify relevant resources in the medium term. Nevertheless, the crisis showed that the numerous digital learning resources available to teachers and learners in 2020 would have been even more helpful if stakeholders could have identify the most relevant ones faster and more easily. A common international taxonomy making their mapping against school subjects and curricula easier would have made their identification and curation easier. It would also have allowed an easier mutualisation of digital learning resources internationally.

### *Keeping students engaged*

Ensuring that students did not “drop out” and remained engaged in their learning in spite of the difficulties was probably one of the biggest challenges during the first wave of the health crisis. How do you keep students engaged in their learning when you see them much less than usual (or not at all)? In an overview of the research on learning engagement, (D’Mello, 2021[8]) points to two different approaches: *proactive* approaches that try to make learning more exciting to keep people engaged and *reactive* approaches that monitor learners’ engagement and try to intervene when learners seem to disengage. Initiatives to keep people engaged were based on both approaches.

Before engagement can happen, there needs to be awareness of the available resources and programmes. Many programmes did promotion campaigns and monitored the uptake of their resources so that more families, teachers and students would be aware of them. In Madhya Pradesh (India), a call centre was established and large-scale randomised calling was set up at the state level to get feedback from teachers, parents, field officers, etc., to continuously understand and get feedback on the implementation

on the ground and to collect stakeholders' views. The call centre reached out to over 500 teachers and parents every day, which allowed both to let the population know about the provided resources and make them more engaging (chapter 20). Peru's "I learn at home" initiative also used a strong monitoring strategy to adapt its materials and adjust its visibility strategy.

A common "proactive" strategy to sustain student engagement across the different innovations documented in this book concerned the format of the learning resources provided. Many of the initiatives developed their lessons or programmes with the intention to make them "engaging" and "entertaining"– with usually short formats, space for reflection or quizzes, and a consideration of the context in which they will be listened to or watched. Many radio programmes were for example designed to be listened to by the entire family.

Some initiatives put student assessments in place as incentives to keep them engaged. For example, in Nagaland (India), the Department of Education created a web-based assessment portal and trusted students to take assessments without proctors, then offering a combination of rewards and recognition to well-performing students as well as schools (chapter 23). In Nigeria, the EdoBest@Home initiative also provided automated interactive quizzes/assessments through WhatsApp or text messages (chapter 31).

The balance in the proposed activities was a key ingredient in the initiatives' strategy to keep students engaged. Several initiatives used creative activities to keep students more engaged (e.g. the Indian "Arts for All" [chapter 19]) or as a way to express themselves (see the New Zealand arts programme described in chapter 30). Many of the programmes had a strong focus on socio-emotional skills, ensuring that students' possible anxiety could be dealt with and that their voice could be listened, as exemplified by the Tokkatsu online case in Japan (chapter 25). As mentioned above, several initiatives also tried to support parents to help their children remain engaged in their school learning activities.

A marketing strategy for learning was to use famous athletes, singers, actors, etc., to support the online platforms or the learning activities that were provided. For example, Wide Open School proposed some physical education lessons delivered by famous athletes (but co-designed with teachers); famous singers were featured on the "Your Class" TV education initiative in Latvia (chapter 27). A similar approach was taken in Peru, where famous actors and journalists initially presented the learning content, before being joined by teachers and students given teachers' feedback about the programme (chapter 33).

Reactive approaches to engagement consist of intervening when engagement seems to fade. They were more difficult to implement in a remote learning environment. A key element of this approach was to keep teachers in charge of their usual students and classes so they could identify their (possible) disengagement. Regular interactions between staff and families served a similar purpose (plus possible other ones). For example, in the United States, the Phalen Leadership Academies asked each school to have an "engagement plan" and teachers have got in touch with each of the students and their family through bi-weekly one-on-one calls, in addition to some possible other initiatives such as "virtual pizza parties", virtual "dance offs" etc. The Central Falls district designed a "learning engagement rubric" and set up a team to contact families, carefully recording phone calls, communicating via Class DoJo, Facebook messages and conversations. In Madya Pradesh (India), teachers were asked to call five students every day to help them access the learning material and answer their questions. This communication was tracked via a simple Google form. The State Department of Education of São Paulo also established a task force to contact parents of "out-of-reach" students by phone or any other possible way, including home visits, after teachers reported their disengagement in learning (chapter 7).

Whether these engagement strategies worked well remains to be proven. The little available evidence in selected OECD countries shows that from 6 to 20% of students lost contact with their teacher or their school during the first wave of the pandemic (Thorn and Vincent-Lancrin, 2021[9]). In rural India, about 70% of students did some school learning activity during school closures, setting the level of disengagement at 30% (ASER Centre, 2021[10]). However, the pandemic made it clear that most of the usual strategies and tools developed to keep students engaged in learning assume school attendance. Shall remote learning

remain important in the future, new strategies to monitor engagement outside of school will need to be developed, including through new types of interactions with students and families.

## Responding quickly and effectively

It is comforting to see the host of initiatives that quickly provided students with some education continuity, even if the education possibly came with lower quality and quantity compared to normal times (the first deployment of those plans was arguably far from perfect, and probably improved significantly during the subsequent waves of the pandemic). Most of the solutions documented in the report were implemented within 2 weeks. Thirteen of the 45 initiatives documented in the report were implemented with no delay when the schools closed, and another 13 were ready within two weeks of the closure. Over half of them (23) were fully deployed within 2 weeks. How was this possible? One exceptional reason lay in the willingness of many to contribute to solving the crisis, and thus to partner and support one another. Part of the time and resources donated to assure education continuity were a response to the exceptional nature of the crisis and cannot be expected to be sustained or replicated after the pandemic. (After the crisis, one may however keep in mind that the willingness to contribute to the common good is possible when the need is clearly visible)

Most initiatives could respond quickly because they expanded existing infrastructures, mobilised pre-existing knowledge and networks, relied on partnerships and were willing to start with a “good enough” proposition that would (or could) be improved over time. This gradual improvement strategy followed the “quick prototyping” innovation method and partly relied on a continuous monitoring of the uptake and effectiveness of the proposed solution.

### *Building on existing capacity*

Governments and other organisations could provide quick solutions to support learning while schools were closed because they built on their existing capacities, both in terms of human competences and available infrastructure. In most cases, the solutions expand or repurpose existing infrastructures – or they create an umbrella service bringing together many services that were separately available to make them more visible. The crisis accelerated the uptake of existing solutions or of solutions in the making. The initiatives sometimes used existing technical solutions and knowledge or implemented existing plans.

The French case studies are examples of initiatives expanding and repurposing existing digital learning infrastructures and building on the human capacity and innovation built prior to the crisis. Like most other countries, the French government deployed a multimodal solution to support its learners and teachers based on the provision of learning resources through a variety of online platforms, the provision of a virtual classroom facility at the national level, and the broadcasting of educational programmes on public TV and radio. The main extension of the learning infrastructure lay in opening existing platforms comprised of licensed commercial resources to teachers who could previously not access them (they could only access materials for the school levels they taught) and to open some other student resources entirely to the whole French (and worldwide francophone) population (chapter 17). To support teachers and principals, the French authorities built on their prior experimentations and innovations related to the use of digital resources in education. They were indeed documented and supported by a network of local digital advisers. Those champions and experts of technology in education organised training workshops and supported interested teachers in their pedagogical use of technology (chapter 18). Many other case studies are based on the expansion of repurposing of pre-existing platforms or solutions, as is for example the case in the above-mentioned Mexican example.

The Egyptian case study presents an example of accelerated implementation. While Egypt’s pre-existing knowledge bank of open educational resources was mainly expanded, the Ministry of Education

accelerated the system's transition to new forms of teacher-marked project-based assessments that was planned but not started yet. The idea aligned with a reform encouraging more active learning and personalisation of education. The context of remote learning allowed for a greater social acceptance for this new assessment model (chapter 15).

The move to online exams proctored by artificial intellegence (AI) technology in Saudi Arabia can also be seen as the deployment of a solution that was already considered but that could have taken years to be implemented (chapter 36). In a similar way, the TV education solution deployed in Latvia was based on an existing plan that had been considered but had never been implemented (and may never have been implemented had there been no crisis) (chapter 27). The previous preparation and knowledge gained during the preparation of those plans allowed for their quick deployment as everyone could just focus on the adaptation, finalisation, and implementation of the initial plans given the pandemic situation.

This highlights the importance of investing in innovation as well as the usefulness of projects that do not appear as successful as they should or that were eventually not implemented. The contribute to a system's knowledge base and can help face an unexpected situation.

### *Mobilising knowledge networks*

Pre-existing knowledge, competence and experience as well as the ability to make it flow within "knowledge networks" drive innovation (OECD, 2000[11]; OECD, 2015[12]). This proved true for innovations that were expanding existing practices but also for those that were building "from scratch" and were thus new to the organisation (or the country).

The knowledge and experience of policy makers and innovation leaders was one important source of knowledge speeding up the implementation process. For example, in São Paulo (Brazil), the Secretary of Education led an initiative in 2007 that broadcast live classes on TV to small villages along the Amazon River (the *Centro de Mídias de Amazonas*). This personal experience helped to set up quickly the new education media centre in São Paulo as the leadership could quickly envision the impact of the solution and support its design and implementation. In New Zealand, the arts programme supporting pupils' socio-emotional skills built on the past experience of the programme designers with school closures resulting from earthquakes (chapter 30).

A second source of knowledge and ideas came from people's networks (and friends). For example, the "Teach for All" network is comprised of 53 organisations trying to support good teaching for low-income students internationally. Inspired by the development of teacher-designed radio education by Teach for Nigeria, the idea inspired other network members in Chile, Colombia and Peru (chapters 9, 11, and 34). Organisations in the network could easily build on what others were doing in other countries and receive feedback and guidance as they adapted and implemented the idea in their country. Similarly, the above-mentioned media centre in São Paulo was then replicated in several Brazilian states. The general idea of publishing the case studies in real time was also to allow for such adapted replications around the world.

A third way to mobilise knowledge was to identify relevant existing networks and mobilise them to support the initiative. In the Finnish case on education TV, expert teachers were identified on social networks and mobilised to help design and curate the TV resources as well as their possible uses. While the method was slightly different, governments in other countries (or states) resorted to existing networks of teachers (e.g. Teach for Colombia in the case of Colombia).

Finally, many of the solutions could be delivered because people had built personal relationships while working with their work partners and counterparts. The speed of changing contractual conditions for accessing educational in resources in France was for example possible because staff in the central administration knew well their counterparts within companies thanks to their procurement process. Local digital advisers also had a good knowledge of the actors on the ground and could negotiate quick solutions.

Similarly, initiatives such as Wide Open School in the United States were possible because representatives of the different companies knew each other following their participation in trade fairs, conferences, etc.

### *Developing partnerships*

Partnerships are an engine of innovation (OECD, 2000[11]; OECD, 2015[12]). In education, public-private partnerships have long been supported as a driver of improvement and effectiveness. During the first wave of the pandemic, all sorts of partnerships flourished, be they public-public, public-private, private-public or private-private – way beyond what can usually be observed. Sometimes they took a contractual nature, but sometimes they were a philanthropic venture. One example was mentioned above when private organisations amplified the public budget to provide financial support to families in São Paulo (with a level of private donation amounting to 0.6% of the annual budget of the State Department of Education, a significant amount). This philanthropic dimension of partnerships will be difficult to sustain after the pandemic.

Public-private partnerships were probably the most common ones – either because governments received support from private actors or because they supported or amplified the role of private actors. By nature, most initiatives that involved radio or TV education relied on public-public or public-private partnerships: education innovators needed to get access to public or private TV channels to air their learning resources – sometimes in addition to making the programmes available on the Internet. In some cases, the regulation made one form of partnership easier to implement than the other. For example, in Nagaland (India), the Department of Education developed both types of partnerships: it chose public broadcasting platforms to ensure a fast collaboration and implementation and reach greater accessibility even in remote areas within a short time frame. At the same time, it worked on getting its public education channels included in the free list of TV channels offered by private cable companies (as some families get their TV services exclusively via private cable) (chapter 23).

Some private-public partnerships allowed for the quick diffusion of resources, as was the case of the (private) ProFuturo digital learning platform which was incorporated in the governmental resources of eight Spanish-speaking south-American countries (chapter 38).

Partnerships were not only important because they allowed to mobilise quickly various resources that were owned by different partners, but also because they enabled a division of labour able to meet the specific time constraints imposed by the crisis. Many of the resources that were developed were crowdsourced so that they could be developed quickly. In Vietnam for example, each school in the different Vietnamese provinces was asked to take charge of at least one subject at one particular grade level. The school's subject department was responsible for creating and reviewing lesson plans and nominated teachers with ample professional and information technology experience to receive training and deliver the lessons. Thousands of teachers across the country contributed to developing lesson plans following the simplified framework curriculum circulated by the Ministry of Education (chapter 49).

Finally, some partnerships were private-private partnerships. Wide Open School brought together a group of non-profit and for-profit private organisations. In that case, giving a non-profit organisation wellknown and trusted by the target audience a lead role was a success factor (chapter 46). In some cases, public-private partnerships involved not-for-profit private institutions, for example a teacher organisation, a foundation, and it could similarly happen that the private organisation was better positioned to take the lead and be trusted by its intended audience, for example in the case of resources or services advertised as "designed by teachers for teachers".

While some of these partnerships may remain useful beyond the health crisis, some only happened because of the willingness to contribute that the circumstances of the COVID-19 pandemic triggered. Partnering institutions did sometimes have an interest in joining those partnerships in terms of image (and marketing of their resources), but they do not necessarily have an interest in staying for a long time. While

partnerships will remain very important after the crisis, they will probably need to take different forms and be driven by different types of incentives and motivation.

### *The best is the enemy of the good*

In order to make things happen quickly, innovation leaders developed their initiatives with a multi-stage strategy, which either prioritised one dimension while others were developed, or that provided initial solutions that would be overtaken by others. This approach reflected a more important mindset of going for the good rather than the best: solutions that could be quickly implemented even if they were not totally satisfactory were usually privileged – and often improve over time.

Many of the "comprehensive" initiatives were rolled out in multiple stages.

First, several public authorities bought some time by changing the dates of the school vacation to buy some time – by either prolonging them (when students were on holiday) or calling for an advanced school holiday. This was for example the case in Chile (chapter 8) or in the state of São Paulo (Brazil).

The deployment of the strategies in several stages (or phases) also allowed for speed. Several of the educational innovations described in the report had a multi-stage approach: this was for example the case for some initiatives in Colombia (chapters 10 and 12), India (chapters 22 and 23), Peru (chapter 33), Turkey (chapter 41), Uganda (chapter 42) and the United States (chapters 44, 45 and 46). In the city of Bogota, the largest "school system" in Colombia, the contingency plan was rolled out in three phases: first, distributing in-school nutrition and online resources; second, developing TV and radio education and turning in-school nutrition to an out-of-school model (as the in-school grab model of the first phase quickly appeared inappropriate); third, addressing the digital gap (chapter 12). At the Phalen Leadership Academics in the United States, academic learning was continued in three phases: first, students were given paper learning worksheets; second, they had access to an online platform with curated materials and videos and supported by their teachers; in a third phase, they were provided with one-to-one devices with connectivity with virtual instruction by their teachers. Each phase allowed to prepare the next one(s) (chapter 45).

The Wide Open School platform also exemplifies the willingness to provide quickly a good service without necessarily going for perfection (chapter 46). Several practical executive decisions were taken. First, the technology had to be cheap. Second, legal issues (and slow speed of negotiations) were largely bypassed by directing users to contributors' websites, and thus out of the platform – a solution that a platform designer would usually not favour. Indeed, the partners owning the different learning resources did not have time to negotiate some legal issues, including intellectual property rights issues, and even less agree on common practices in this regard. The platform just noted that the different partners' websites had their own privacy policies, data collection practices and encouraged the users to review them. Without this disclaimer, it would have taken months to launch the platform.

### *Monitoring and evidence*

An active monitoring of the uptake of the proposed solutions as well as the collection of feedback on their usefulness was in many cases a full part of the initiatives. As mentioned above, where teachers continued to have a personal contact with students and families, mainly for engagement and academic purposes, they were often asked to provide feedback on the effectiveness of the learning resources so they could quickly be improved.

When they relied on digital solutions, indicators about the access to the platform or to the digital resources were usually collected. For TV and radio programmes, audience shares were the typical indicators. This proved more difficult for interactions with text messages. Accessing this information was also more difficult in some contexts than others. In spite of being important indicators, access to resources or reach of

population only provide some basic information and do not allow one to improve learning resources or the design of an initiative. Nor do they indicate whether the resources are used effectively.

Many organisations established some kind of qualitative monitoring of their initiative. They collected feedback on the quality and reach of the solution/resources from users or peers. For example, the TV initiatives in Latvia and Finland asked expert teachers feedback on the produced resources. In other places, such as Vietnam or India, this was done through the administration rather than by peers. In Nigeria, the "quality assurance team" shifted its usual on-site school visits to the random monitoring of the virtual classes offered through its platform to get a sense of the use and quality of the teaching and learning during the school closures. It also analysed the quizzes taken by students to get a sense of their learning progress (chapter 31). In Bogota (Colombia), in addition to the indicators of access of their digital platform, the city relied on regular meetings with stakeholders and qualitative evaluations performed by the municipal Department of Education's Evaluation unit (chapter 12).

Monitoring policies based on actual statistical methods were less frequent, even for governmental initiatives. The Department of Education in Peru put in place such a monitoring strategy. Its "monitoring and evaluation" unit regularly evaluated the adoption of its "I Learn at Home" solution with phone surveys based on a representative sample of teachers, parents and principals. They evaluated their awareness of the solution, whether and how they could access the resources, their level of satisfaction with them, as well as the level of support given by teachers to students. The information was used to continue and improve the development of the platform: for example, negative feedback received from teachers on the presentation of the resources on TV led to the inclusion of teachers and students alongside the "star" presenters (chapter 33).

As of March 2021, among OECD member countries, France, Germany, Ireland the United Kingdom, and the United States were the main countries that had collected representative data based on probability samples giving a comprehensive picture of the education experience of students, teachers and households during the first wave of the pandemic. Some studies with more limited scope cast light on specific aspects of the first phase of the health crisis, for example learning gains in Australia, Italy or Luxembourg. Most of the national evaluations were put on hold or could not take place given the sanitary circumstances. Thorn and Vincent-Lancrin (2021[9]) present a first overview of those studies. Among non-OECD members, those studies seem to have been even less frequent (even though some information in at least Brazil (São Paulo), Morocco or India has become available).

During the crisis, many surveys were conducted using convenience samples or were reweighed to try to be more representative. The reasons for this are understandable: a perceived need to gain information quickly and the absence of easily accessible sample frames covering the target populations of interest. However, such approaches do not provide a secure basis for making valid inferences about the populations and groups of interest from the responses collected. As a result, as of January 2022 we may only speculate on the effectiveness of the different "education continuity" solutions that were provided during the first wave of the pandemic, except in the countries that collected statistical information. Retrospective studies are possible and necessary but have their limitations as stakeholders' memory remains less and less reliable. Hopefully, quality information about the subsequent waves of the pandemic has been collected so that its effects on the teaching and learning experience as well as on a variety of outcomes can be assessed.

In any event, while the efforts to monitor the uptake of the provided solutions in quantitative and qualitative ways can be laudated, the crisis exposed the limited capacity of many governments to continue the evaluation, documentation and data collection about their education systems during a crisis that led to remote learning.

## Advancing a global digital education agenda

The pandemic has made the potential (and need) of a digital transformation of education evident. It has accelerated the policy agenda related to digital education. How could international collaboration help education systems to harness the potential of digitalisation worldside through collaboration and joint knowledge production and sharing? Digital tools and resources can improve the quality, equity and efficiency of education, but digitalisation can only make a difference if accompanied by human capacity to use the resources properly, smart governmental investments and policies, and the reshaping of some social institutions, including formal education perhaps (OECD, 2021[13]).

In spite of its limitations, the experience of remote learning during the pandemic showed the power of technology to support teaching and learning – both remotely and in presence. In spite of the fast progress of smart education technology, the pandemic showed a gap between the technology available to education stakeholders and the frontiers of advanced technology. In the collection of contingency plans presented in this report, few rely on AI or learning analytics. Proctored exams in Saudi Arabia (chapter 36), a recommendation tool for active learning in Russia (chapter 35), resources for special needs students in Turkey (chapter 41), the matching of students and tutors in the Netherlands (chapter 29): here are some of the few examples of initiatives involving some use of AI-based technology. This shows the somewhat expected gap between where most education systems stand and where the technology frontier is. At the same time, it highlights missed opportunities and a need to rethink the role that digital tools and resources could play to improve education around the world, even once differences in the underlying technology infrastructure across countries are acknowledged.

This section sketches a possible agenda for an international collaborative initiative among countries, international organisations, universities, educational non-governmental organisations, foundations and companies. Table 1.1 summarises the proposed framework for such an initiative that would encompass work on three different pillars: frontiers, practice and policy.

The work on *frontiers* would focus on “advanced” practices, innovation and foresight, and how to mainstream the most effective or affordable uses of those technologies. The work on *practice* would focus on the use of technology by practitioners in the field, that is, learners, teachers, administrators, schools and universities. The work on *policy* would focus on how policy makers could best support, through incentives, guidelines and regulation, the adoption and further development of effective and trustworthy digital solutions in education.

Each of the pillars could include different types of work, possibly involving different organisations, stakeholders and working methods. International organisation could work collaboratively in line with their missions, and their members in line with their interests. A lot of analysis to understand the different dimensions of the opportunities and the challenges of digitalisation would still be needed. This would also allow for the development of a set of comparative indicators about the availability and use of technology in education. International standards and guidelines (and the mutual learning required to develop them) could facilitate the adoption of and trust in digital education solutions: depending on the subjects, those could take different forms. Finally, capacity development based on international projects and peer learning would be helpful for policy makers and practitioners: this could take the form of training, e-learning, joint international projects but also the development of global public goods and tools supporting all education stakeholders in absorbing and developing new models adapted to the digital world.

### *Frontiers*

Work on the frontiers of technology development and use in education is essential to understand possible trajectories for digital education, to anticipate possible policy issues and identify “leapfrogging” opportunities. This is true for both high- and low-income countries. In fact, this may be even more important for low-income countries: while their current lack of sufficient infrastructure may make digitalisation look

irrelevant, they often have more benefits to reap from it than high income countries. The pandemic also accelerated the level of equipment in low-middle income countries such as India, where 70% of the population in rural India had access to a smartphone, partly as a response to the pandemic (ASER Centre, 2021[10]). Moreover, technology applications requiring less hardware (from electricity to stable connectivity) are making progress (see chapter 26).

Five types of activities could be developed in this area:

- *Analysis*. Policy makers and stakeholders need to better understand the current possibilities of technology to improve teaching and learning in the classroom, the administration of education systems and institutions as well as the learning and tutoring possibilities it offers when students are at home. This type of analytical work will typically involve academic researchers but also company developers who will know where the technology frontiers are and in which direction they are moving. The pandemic and its possible silver linings have raised new questions about the use of technology and the organisation of education. Can technology support a new balance between autonomous (in presence or remote) learning and social learning supervised by teachers? How can technology be used to support new educational arrangements, and how should school and university education be remodelled as social institutions if this were the case? Another big question concerns the digital education infrastructure available to teachers, learners and education administrators. The pandemic highlighted interesting new models and ideas that may enrich pre-pandemic infrastructures after the crisis. An observatory of most advanced uses of AI (and other advanced technology) in education could be establish to document case studies of what advanced technology can do in practice and enable networking and knowledge sharing across countries/organisations interested in similar technology uses in education.
- *Indicators*. Monitoring what the education technology industry (EdTech) is developing is important to identify the frontiers, but also the dynamics of and the market for education technology. This is key for policy makers to develop sound innovation policies on digital education and to identify the room for international collaboration in this area. Where and by whom are education technology solutions developed? Are the innovations developed by the education technology industry covering the range of issues faced by education systems worldwide? Market research companies have developed indicators on the education technology market worldwide, including the range of solutions proposed, technology used, the investment by region, etc. However, further comparative data and indicators could be developed to inform the international dialogue on the development of education technology that should include questions such as: are there some market failures that could be addressed? Is there sufficient investment at the different steps of the company development? This work will typically involve market research and education technology companies, associations of education suppliers, statisticians, etc.
- *Standards*. The fragmentation of education markets within and across countries is difficult for the development of solutions that are not limited to a specific education system (or sub-system). One reason is that technology solutions do not share similar technical or nominal standards. While a full harmonisation would be unrealistic, especially as education systems need to use their legacy systems and are path dependent, there is room to discuss some level of harmonisation and develop some international “interoperability” standards for digital education solutions and resources. Some organisations try to develop international technical standards and in some areas international organisations could do so (e.g. comparative statistics). Those standards should be developed early on in the technology development cycle.

## Table 1.1. Framework for a global digital education agenda

| | Frontiers | Practice | Policy |
|---|---|---|---|
| **Analysis** | • Innovative uses of technology in education (AIED Observatory)<br>• Hybrid human-AI systems and automated solutions to support learning in and out of class<br>• Advanced digital solutions to support system improvement | • Evidence on effective use of technology<br>• Public digital learning infrastructure<br>• Information Systems (aka Data systems or EMIS) | • Investment, procurement and relations with the private sector<br>• Digital education infrastructure<br>• Supporting teachers' digital competences<br>• Reshaping social institutions and practices<br>• Identifying regulatory barriers |
| **Indicators** | • Investment in and development of EdTech<br>• Innovation, R&D and collaboration in EdTech | • Online/hybrid enrolments, provision of online programmes, online resources, etc.<br>• Modules on digital education in international educational surveys (access, use, etc.) | • Policy, regulation<br>• Public infrastructure<br>• Expenditures on technology in education |
| **Standards** | Standards<br>• Interoperability standards for digital solutions and data | Assessment framework<br>• Coding/AI education<br>• Learning in digital world<br>Standards<br>• Taxonomy standards for learning resources | Guidelines<br>• Data protection, data sharing, privacy<br>• Algorithm bias and transparency<br>• Solutions accuracy and bias |
| **Capacity development** | • International for a/summits on the advancement of digital education<br>• Innovation prizes | Training<br>• MOOCs for teachers on using digital tools in their pedagogy<br>Curriculum/Course/design<br>• Examples of lesson plans (Coding, technology, digital media literacy, critical thinking) | • Policy fora for countries to exchange about policies and practices<br>Training<br>• Courses for policy makers on digitalisation in education |
| **Development and evaluation** | Innovation networks<br>• Development projects on digital education in schools and higher education institutions<br>• Impact evaluations | Apps<br>• International bank of learning resources<br>• Public goods developed/curated by international organisations | Reviews<br>• Country reviews |

- *Capacity development*. When it comes to frontier technology and its adoption, capacity development mainly takes the form of knowledge sharing and dissemination. All stakeholders could come together at global education industry summits to discuss the progress of digital education as well as the forthcoming challenges that may emerge from its development (or adoption). Another way to support the development of solutions in countries that need them more would be the establishment of hackatons or innovation prizes aimed at addressing some specific challenges.
- *Development and evaluation*. Finally, frontier work also aims at developing new practices and new tools. International practice-engaged development projects involving practitioners on the ground could help experiment and develop field-trialled practices and tools supporting an effective, trustworthy and human-centric adoption of AI and technology in education. These developed interventions could then be evaluated as "efficacy studies" within countries and adapted to the country context. This could also contribute to the development of an innovation culture within countries.

### *Practice*

By definition, a big gap separates the frontier uses and possibilities (that concern early adopters and sometimes just laboratory experimentation) and the actual use of digital education resources at scale by teachers, learners and administrators in education systems. Harnessing the potential of digital education requires the monitoring of the "mainstream" state of adoption and use of technology by education stakeholders and its positive and negative effects.

- *Analysis*. Analytical work on the practices of digital education should research and synthesise evidence about different ways to effectively and equitably integrate technology in pedagogical or administrative practice. Because technology is a mere tool at the disposal of humans, technology should not so much be the main focus of research: pedagogy or administrative practices using technology should be. Regarding the administration of education systems, the development and use of administrative information (or data) systems (also known as "education and management information systems" [EMIS]) should be a priority research area: they are key to produce new evidence and make high quality and well structured data actionable. In many countries, moving from current systems to longitudinal systems equipped with dashboards and other functionalities providing actionable information to all stakeholders is a key step to improve educational information and outcomes. Early warning systems show how this information could be turned into action.
- *Indicators*. While comparative international education has made great progress in the past decades with joint data collections and standards across several inter-governmental organisations, there is still relatively little statistical comparative information about the use and access of technology by education stakeholders. For example, we cannot compare the levels or shares of enrolments in online higher education courses, we do not know what share of schools or universities are equipped with learning management systems, to what extent teachers and administrators use technology, for what purpose, etc. We do not know much about the digital learning infrastructure available to learners, teachers, administrators and parents and how it is is used. Most information that is available comes from international surveys such as the OECD Programme for International Student Assessment (PISA) for 15-year old students, the OECD Teacher and Learning International Survey (TALIS), the IEA surveys (TIMMSS and PIRLS) for 4 year and 8 year students, or the BlinkLearning Global Survey on the use of technology in education. Secondary analysis of those data gives an evolution of the uses of technology over time (Vincent-Lancrin et al., 2019[14]; OECD, 2014[15]). More extensive information about the use of new forms of online and hybrid learning would be helpful, as we know that the availability of digital tools does not imply that they are used (Cuban, 1986[16]). Coordinated questionnaires and standards could be developed to make domestic data collections on education technology internationally comparable – and even some specific international surveys.

- *Standards*. Some international frameworks could be useful to support the work of practitioners. If assessment drives teaching and learning, "assessment frameworks" capturing at a point of time the state of the knowledge of what students should learn could help all countries and their institutions develop their curriculum or benchmark their students against international standards. When it comes to digital education, different types of assessment frameworks could be developed. Some could relate to the use of digital tools, in the spirit of the PISA 2025 assessment framework on "learning in the digital age"; others could relate to the ability to navigate the wealth of information that characterises the digital age; others could be around the assessment at different levels of education of computer science or digital literacy (e.g. coding or AI). The same could be done for the assessment of the pedagogical use of technology by teachers. Another form of standards could be an international taxonomy for teaching and learning educational resources that would allow teachers to locate easily the educational resources according to their local curriculum or their subject of interest. The curation issues faced during the pandemic would be eased and resources from other countries would become more easily accessible.
- *Capacity development*. Capacity development for practitioners can take different forms – other than the practice-engaged research projects mentioned under the "frontiers" pillar. A series of freely available online courses (MOOCs) developed and peer-reviewed by world class experts or pedagogues could provide some initial guidance about simple and effective ways to use digital resources and tools as part of teaching, provide knowledge about the frontiers of digital education, the policy issues, etc.
- *Development*. Another way to support teachers and other practitioners supporting teaching and learning would be to provide examples of lesson plans or full courses exemplifying how to integrate technology in one's pedagogy or how to teach the basics of digital competences (e.g. the basics of AI, of coding, etc.). In the first case, this could typically be done by involving universities and their initial teacher education programmes; in the second case, with the support of technology companies. More broadly speaking, countries could work on the establishment of an international bank of quality pedagogical resources based on existing and newly developed open educational resources. Some other global public goods could also be made available. International organisations would be the right hosts and hubs for the establishment and maintenance of such resources.

### *Policy*

Policy makers provide practitioners with the enabling regulatory environment, guidance and incentives. They play a key role in the further development of a trustworthy and human-centric digital education. The work on the frontiers of technology should allow them to anticipate some issues that might need regulation and reflect on the strategies used to address them while piloted. The practice work will provide information about some directions in which practitioners may need to be "nudged". Digital education raises new policy issues and will lead policy makers to revise some habits and ways of thinking that prevent some positive innovations to take place in "normal" times.

- *Analysis*. Three big areas could benefit from international learning and comparison in the policy domain. The digital education agenda will require significant financial investments from countries. What are the most effective models, strategies or programmes to mobilise financial resources to support the development of digital solutions as well as their effective use in education? How do governments use their innovation and research funding to that effect? A second, related area pertains to procurement, which is one of the powerful ways for governments to influence private companies or guide the purchases of their decentralised decision makers. More generally, analysing and discussing how partnerships and collaboration with private actors across the world are organised will help devise policies defending the independence of formal education and safeguarding the privacy and data of its actors while reaping the benefits of digitalisation. A third

policy area is about the nature of the public infrastructure that should be made available to education actors in different settings. This is a question that the pandemic has brought to the fore and that will remain relevant after the health crisis. Is there a minimal infrastructure of learning resources and tools that should be made available to teachers, administrators and learners, and if yes, what does it look like? Where education is free, how can it remain so in learning environments that increasingly require home access to the Internet? Should some of the solutions that were experimented during the pandemic be sustained? A fourth area concerns the provision of professional learning opportunities so teachers and other education staff develop their pedagogical skills using digital resources and tools (that is, their "digital competences"). This may include the development of qualification frameworks or certification processes, etc.

- *Indicators*. Indicators focusing on countries' investment on various aspects of digital education and on their policies regarding education could be collected in a way that allows for international comparison. This would inform a dialogue within and across countries.
- *Standards*. At the international level, policy standards usually take the form of guidelines or declarations. Some guidelines on "good practices" could be developed in the area of procurement and relations with the private sector, including some guidelines on the evidence criteria that technology solutions should meet depending on their stake level. Guidelines about data protection and data sharing practices that supplement existing laws and facilitate the large use and reuse of educational data could also be useful, especially as data protection regimes vary at the global level. Finally, in line with the "open data" movement, some guidelines related to the "open algorithm" movement could be developed in terms of transparency and testing of algorithms. Overall, this would contribute to guidelines on "ethics in using artificial intelligence in education". These types of guidelines would be more easily elaborated and adopted at the regional level.
- *Capacity development*. Policy makers would benefit from being more aware of and learning from what is happening internationally in terms of digital education policies. International organisations could partner and propose different types of training and technical assistance. Some organisations such as the UNESCO International Institute for Education Planning propose such executive training, and this capacity could be developed within other organisations as well in a synergetic way.
- *Development and evaluation*. Countries could benefit from reviews of their digital education policy or of other specific aspects of their digitalisation agenda. International organisations could collaborate and conduct independent or "joint" country reviews and mutualise the lessons learnt (if acceptable to the reviewed countries). This would give countries some feedback on their advancement in this area compared to other peer countries and provide the international community with detailed analysis and information about developments within specific countries.

## Concluding remarks

The health crisis was a stress test for education systems around the world. While they were arguably not prepared to shift to remote learning and teaching, most countries provided their learners and teachers with "education continuity" solutions when they had to close schools. To what extent these innovations were effective remains to be studied and evaluated. On the one hand, it would be surprising that they proved as effective as in-person teaching; on the other hand, it would be surprising they had no effect, and assuming that students' education was interrupted during the first wave of the COVID-19 pandemic and school closures would be excessive. Many lessons were learnt from the crisis, and several organisations provided recommendations on how to deal with formal education during and after the crisis. The OECD developed joint principles for an effective and equitable recovery with Education International, the international federation of teacher unions, providing directions to education stakeholders, both during and after the pandemic (Box 1.1).

### Box .1 10 Principles for effective and equitable educational recovery

**Principles for schooling during the pandemic:**

1. Keep schools open as much and as safely as possible.
2. Ensure equity and align resources with needs.
3. Provide a remote learning infrastructure which is designed to reach all students.
4. Support teachers in their professional lives.
5. Enable teachers and parents to support learners.

**Principles for recovery towards effective and equitable education:**

6. Provide targeted support to meet students' learning and social and emotional needs.
7. Co-design a robust digital learning infrastructure with teachers and stakeholders.
8. Empower teachers to exercise their professionalism and benefit from professional learning opportunities.
9. Encourage a collaborative culture of innovation.
10. Learn from national and international evidence.

Source: OECD and Education International, *Effective and Equitable Educational Recovery*, 2021, https://www.oecd.org/education/ten-principles-effective-equitable-covid-recovery.htm.

Many lessons can be drawn from the experience of teaching and learning during the pandemic in order to rebuild more effective and equitable education systems after the crisis. In addition to those mentioned above, here are a few high level lessons for the post-crisis times.

**Lesson 1: Education systems are resilient and proved they could imagine and implement an alternative education model if needed.** Education systems struggled to adopt remote and digital learning strategies. They probably implemented them in less than perfect ways. However, learners and teachers could use solutions allowing them to continue to learn and teach during the crisis. Education systems showed some level of resilience, that is the ability to face a hardship, to resist and recover. The variety of actors that make up education ecosystems have worked together (or independently) to develop these solutions and showed that different ways of learning and teaching are possible. During the pandemic, education systems have clearly demonstrated that there is room for formal education to be organised differently, to innovate its balance between autonomous learning, possibly engaging parents, learning supervised by teachers, and learning mainly done with peers. Some initiatives during the pandemic may provide ideas and building blocks for a different and better education in the future – empowered by the innovation mindset of getting things done before gradually improving them that characterised most initiatives.

**Lesson 2: Education systems' resilience depends on their existing capacity, including their past investment in knowledge, networks and partnerships.** The ability of governments and educational organisations to propose quick solutions to ensure that academic learning would continue during the school closures depended on their prior knowledge, their connectedness to other actors and partners and their existing capacity. While some initiatives invented new models, most of them expanded an existing infrastructure, implemented ideas that had been already tested (though not mainstreamed), or borrowed their solution from knowledge partners. This shows the importance of investing in innovative projects in "normal" times and the importance of establishing knowledge networks, even if they do not seem to provide immediate benefits.

**Lesson 3: Educational inequity are broader than commonly acknowledged and must be addressed.** Inequity in education is well documented, both in terms of access to learning opportunities and achievement gaps. The health crisis reminded us that learning conditions at home, including space, IT equipment and support, are very different for students from different socio-economic and sometimes geographic background. Some of the solutions to support families that needed nutrition, equipment, connectivity, access to educational platforms at no roaming cost and extra support should continue to be explored and offered after the crisis so students have more equal learning opportunities and access to education.

**Lesson 4: A new digital education agenda is needed.** The pandemic has accelerated the digitalisation of societies and economies. In education, the health crisis has shown the importance of digital resources and tools but also highlighted the potential of digital education in the post-pandemic world. Education is a social endeavour requiring human interactions. They could be shaped differently thanks to technology. In many countries, the digital learning infrastructure was inadequate and will need to be revisited after the pandemic. This will require public investments and smart decisions. International collaboration would allow countries and education systems to harness more quickly the potential of digital education.

**Lesson 5: Countries should invest more in monitoring and evaluation.** Many initiatives used a "quick prototyping" method to develop their innovation and monitored their success. They monitored the uptake of their proposed solution, collected feedback, and used this information to improve it. This should continue to guide educational reforms and innovation in the future. On a less positive note, few countries have invested in rigorous statistical data collections during the pandemic, leaving many aspects of the experience of students, teachers and families undocumented. While the dearth of evidence will give rise to speculations about the impact of the crisis on the learning opportunities for students, their academic progress, their holistic development, and even the impact of the crisis on inequity, it raises a structural question about the strength and resilience of governments' institutions collecting data and evidence in education. For education to continue its shift towards a knowledge sector and design education policy on the basis evidence, these shortcomings will need to be addressed.

Perhaps because of the more autonomous nature of institutions at the higher education level, national authorities collected information about education continuity in higher education in a less systematic way than in primary and secondary education. This report reflects this state of play and includes less large-scale initiatives for higher education (or for formal vocational education. This is in no way a reflection of the importance of those sectors to the education of countries' citizens. Analysis and information about how higher education students experienced the crisis internationally will emerge as the various data collections and studies undertaken by various higher education stakeholders are brought together. In any event, rebuilding more effective and equitable education systems will require to reflect on and articulate the lessons learnt from the educational innovations and positive aspects of the health pandemic at all levels of education.

## References

ASER Centre (2021), *Annual Status of Education Report (Rural) 2020 (Wave 1)*, ASER Centre, New Delhi, http://img.asercentre.org/docs/ASER%202021/ASER%202020%20wave%201%20-%20v2/aser2020wave1report_feb1.pdf. [10]

Cuban, L. (1986), *Teachers and Machines: The Classroom of Technology Since 1920*, Teachers College Press, New York, NY. [16]

D'Mello, S. (2021), *Improving student engagement in and with digital learning technologies*, OECD Publishing, Paris, https://doi.org/10.1787/8a451974-en. [8]

Government of the Republic of Korea (2020), *All about Korea's Response to COVID-19*, https://www.mofa.go.kr/eng/brd/m_22591/down.do?brd_id=20543&seq=35&data_tp=A&file_seq=1. [6]

OECD (2021), *OECD Digital Education Outlook 2021: Pushing the Frontiers with Artificial Intelligence, Blockchain and Robots*, OECD Publishing, Paris, https://dx.doi.org/10.1787/589b283f-en. [13]

OECD (2021), *The State of Global Education: 18 Months into the Pandemic*, OECD Publishing, Paris, https://dx.doi.org/10.1787/1a23bb23-en. [2]

OECD (2021), *The state of higher education: One year in to the COVID-19 pandemic*, OECD Publishing, Paris, https://dx.doi.org/10.1787/83c41957-en. [3]

OECD (2015), *The Innovation Imperative: Contributing to Productivity, Growth and Well-Being*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264239814-en. [12]

OECD (2014), *Measuring Innovation in Education: A New Perspective*, Educational Research and Innovation, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264215696-en. [15]

OECD (2000), *Knowledge Management in the Learning Society*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264181045-en. [11]

Reimers, F. et al. (2020), *Supporting the Continuation of Teaching and Learning during the COVID-19 Pandemic: Annotated Resources for Online Learning*, OECD, Paris. [7]

Schleicher, A. and F. Reimers (2020), *A Framework to Guide an Education Response to the COVID-19 Pandemic of 2020*, OECD Publishing, Paris, https://read.oecd-ilibrary.org/view/?ref=126_126988-t63lxosohs&title=A-framework-to-guide-an-education-response-to-the-Covid-19-Pandemic-of-2020. [1]

The World Bank, UNESCO and UNICEF (2021), *The State of the Global Education Crisis: A Path to Recovery*, The World Bank, UNESCO and UNICEF, Washington DC, Paris, New York, https://www.unicef.org/media/111621/file/%20The%20State%20of%20the%20Global%20Education%20Crisis.pdf%20.pdf. [5]

Thorn, W. and S. Vincent-Lancrin (2021), *Schooling During a Pandemic: The Experience and Outcomes of Schoolchildren During the First Round of COVID-19 Lockdowns*, OECD Publishing, Paris, https://dx.doi.org/10.1787/1c78681e-en. [9]

UNESCO, UNICEF and the World Bank (2020), *Survey on National Education Responses to COVID-19 School Closures, round 2*, UNESCO, UNICEF, World Bank, Paris, New York, Washington DC, http://tcg.uis.unesco.org/wp-content/uploads/sites/4/2020/10/National-Education-Responses-to-COVID-19-WEB-final_EN.pdf. [4]

Vincent-Lancrin, S. et al. (2019), *Measuring Innovation in Education 2019: What Has Changed in the Classroom?*, Educational Research and Innovation, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264311671-en. [14]

# 2 COVID-19 and Education in the Global South: Emergency Remote Learning Solutions with Long-Term Implications

Maria Rebeca Barron Rodríguez, World Bank[1]

Cristobal Cobo, World Bank[2]

This chapter highlights the innovative uses of low tech in remote and blended learning in low- and middle-income countries. It identifies emerging lessons that are useful (and replicable) for lower middle-income countries and high-income countries. The chapter gives an overview of the main challenges that lower middle-income countries face while implementing remote learning strategies. It reflects on how the implementation of remote learning during the COVID-19 pandemic may lead to short- and long-term changes in education systems in lower middle-income countries going forward.

[1] María Rebeca Barron Rodríguez, Education and Technology Analyst, World Bank.

[2] Cristobal Cobo, Senior Education and Technology Specialist, World Bank.

## Introduction

### *2020: A very long year*

Traditionally, education systems are often accused of being change-resistant or too conservative. On a regular basis, the media, experts and representatives from civil society have a tendency to discuss how little education systems have changed over time.

It is often said that chalk and talk remain almost as it used to be a century ago. The same classroom, the same textbooks, etc.; in many cases, teachers are blamed for doing what their colleagues were doing 20 years or more ago. Although that might be the case in some contexts, the experiences from 2020 have shaken up most, if not all, education systems across the world. It is hard to find a single country that has not taken a set of actions or in some cases disruptive transformations to secure learning during the COVID-19 pandemic.

Many of these emergency responses might need to be adjusted or improved; however, it is hard to undermine the relevance of the undergoing transformations. In terms of the time and the diversity of the actions implemented, the adoption of new means to facilitate learning has been so fundamentally different from the past. In some cases, it can be said that more changes at scale have happened during the last 12 months, from the remote learning perspective, than in the last 12 years. This chapter explores how countries responded to challenges related to supporting teachers, parents and students; the lack of digital infrastructure; and strengthening organisational capacities to deploy remote and blended learning to then extract lessons and reflections going forward.

### *Lessons learnt*

Now is the time to reflect on these emergency plans. What worked well? What did not? Where were there gaps? What can we mainstream going forward? To what extent have remote learning solutions amplified the existing inequalities? Are low-tech[3] interventions back into education systems? What are the best strategies to secure inclusion and equity when deploying national remote learning policies? Did teachers receive appropriate support to teach remotely? All these questions, among many others, will need to be explored. However, there is little doubt that the intensity of the implementations developed recently will demand careful, and thoughtful, analysis. Going beyond the emergency mode, what opportunities can come from this year of intensive "incubation" to take these emergency responses to the next level, adopting and improving them towards more sustainable and long-term policy transformation?

Digital technologies have been incorporated into different forms of teaching and learning for decades. Some cases have had more impact than others. In most instances, these interventions have required regular monitoring, adaptation and improvement. Fortunately, we are not starting from scratch, but at the same time, it is a good idea to learn from the past. We are better positioned today to understand that an effective EdTech integration will require much more than connectivity and access to devices. It will thus be important to capitalise from what we have already learnt, and when possible, integrate those lessons into the novel remote learning initiatives deployed from 2020 in the months to come.

[3] Low tech is technology that is designed to be as simple as possible. It can also be associated with a higher availability and with a lower learning curve (is easier to use). Examples include solutions which are more affordable, such as television and radio, landline phone calls, basic feature phones, or printed materials. Low tech can also encompass those devices that require connectivity but can work in contexts of irregular sporadic access to the Internet or no access at all.

### *From experimental to exponential*

Not all the continuity stories were implemented at a national scale or are equally replicable. While in some cases they were deployed from government to benefit millions of students, in others these experiences were simply deployed at a small scale. Not all emergency responses of remote or blended learning have been equally impactful and it is important to learn from them. Even if some of these interventions are relevant, impactful and scalable, it is fundamental to document and share them with the broader education community. That was the purpose of documenting a variety of innovations and implementations deployed during the first months of the pandemic. It is extremely relevant to reflect on an unprecedented period and learn lessons from it. It is important to reflect on what has worked (and what has not) and shed light on those innovations that can be adopted and replicated at a large scale, to the benefit of teachers and students across the entire globe.

One example of a lesson learnt are the multichannel strategies implemented in most regions, which integrate old and new technology (e.g. when a remote teaching strategy combines different media such as television with radio or mobile phones or printed materials plus resources delivered digitally). These multichannel strategies have proved to be more effective (and more inclusive) for reaching communities of students from different socio-economic and geographic contexts. Learners who might be living in very different environments, with unequal levels of access to technological infrastructure, benefited from this diversity of remote learning options.

### *Multiple channels for multiple communities*

The set of implementations deployed during the pandemic have shown the importance of understanding that a diverse combination of channels will benefit a more heterogeneous community of learners. At the same time, it will be equally important to design flexible strategies to secure and facilitate regular teacher and student interaction. There is little doubt that without access to learning resources, students will not be able to learn much. It is key to prioritise the importance of the "human interaction" component (Hawkins et al., 2020[1]). Here is worth clarifying the interaction does not have to be (always) in person, does not have to be (necessarily) synchronous (Barron et al., 27 April 2021[2]). The interaction might not require video, but it will need a solid and well-planned strategy to secure that human connection is available. It will, however, need to be there to secure and nurture the engagement needed. Even in moments of high levels of isolation, we have learnt the importance of securing one of the most core attributes of education: the human connection. We have observed that teachers can enrich their impact when parents take part in their children's learning experience. Unlike other moments when parents were busy working in their offices, COVID-19 has shown us that parents' participation, engagement or assistance can be a driver of change. Parents and tutors are increasingly becoming key partners to complement teachers at home.

The pandemic has shown that in addition to the systemic inequalities between countries and between regions, structural inequalities can be observed within countries. Even in the most advanced societies, students from rural areas have suffered much more the consequences during the confinement. Rural students tend to have less infrastructure, less access to connectivity or electricity; they are therefore more unlikely to access remote learning. Although this is not always the case, it is a pattern that remains consistent throughout different regions.

### *Bridging digital divides*

The pandemic has also shown that the so-called "digital divide(s)" (Cobo and Sánchez Ciarrusta, 22 April 2020[3]) is not a single phenomenon linked to a lack of technology, but a much more comprehensive one that also includes human and organisational capabilities. The pandemic has made crystal clear that digital divides can be addressed with a combination of actions that tackle challenges such as a lack of infrastructure (electricity, reliable connectivity or devices); resources (access to learning materials,

textbooks, platforms, education software, etc.); capacities (technical skills to learn how to use different technologies, media literacy, knowing how to make the best of the information available, higher order skills, etc.); additional external enabling conditions (external support, training, monitoring, technical help, etc.). More than ever, we have learnt that it is important to flip the page away from the traditional idea that simply providing access to a device will suffice to facilitate learning improvements. The pandemic has shown how important it is to consolidate national capacities to address and orchestrate technical, logistical, pedagogical and human dimensions. Although there is no shortcut for implementing all these dimensions at the same time, the evidence provided in this chapter helps us to better understand how countries can learn from each other's experiences, particularly from those policies focused or designed to support learning regardless of the circumstances.

### *Remote and blended learning are here to stay*

The pandemic has spurred innovation in different forms of content delivery, teachers have embraced change in so many ways one would need an entire publication to reflect on the innovation of the practices deployed. Although many teachers (Krönke, 2020[4]) have expressed that they were ill-prepared to address the long list of challenges derived from a global school lockdown,[4] many, if not most, educators have made remarkable efforts to mitigate the existing challenges to secure learning continuity. Just like nurses, teachers in many places are working on the front line, risking their health (as well as that of their loved ones). It will be important to reflect on how critical it has been (and will be) to better prepare teachers with the right set of skills to teach remotely and effectively. Although there has been an emergence of initiatives designed to support in-service teachers during the pandemic, it is unlikely that remote learning will disappear once a vaccine becomes accessible to all. Although remote learning might evolve from what we have observed in 2020, it is reasonable to expect that having technical and pedagogical capacities needed for distance teaching will no longer be a "nice to have" set of skills, but critical capacities for a (much) larger part of the teacher community. At the same time, the emergence of different forms of coaching to support students has been observed. In some cases, remote coaching has been provided by peers, or near peers, while in others it has been possible by recruiting new staff as coaches hired to support learners or to assist those who might need additional assistance. Although this is not new – in some countries in Asia, for instance, hiring coaches and remote tutors has been a normal teaching-learning practice for decades – it is likely that this trend will remain (if not expand) in different regions of the world even after the pandemic is over.

If COVID-19 can be considered some kind of a rehearsal of what could be a future environmental crisis as a consequence from global warming (among other unknown crises), once again, it will be critical to reflect on what we have learnt, then ask ourselves how we can do better after this intensive period of challenging adaptation.

## How did countries support teachers, parents and students?

Teachers have been one of the key protagonists of this pandemic. Protagonist because they have played a leading role during the implementation of remote learning. But also because they have been, in many cases, coping with limited infrastructure and lacked the necessary skills to provide effective remote learning. They had to quickly adapt to the circumstances and address this challenging context with courage, dedication and creativity.

[4] To give one illustrative example, in Brazil, according to a survey conducted by Instituto Peninsula, 83% of teachers did not consider themselves prepared to teach remotely, 67% were anxious, 38% felt tired, and less than 10% were happy or satisfied (Barron et al., 18 February 2021[66]).

Documentation from different regions indicates that most educators acknowledge that they were ill-prepared to teach remotely. “Teachers expressed the need for more direct guidance and professional development to equip them with the skills and competencies necessary for implementing a fully central self-direct learning approach”, argues one of the continuity stories (Liou and Petrie, 2022[5]). In addition, many educators needed to cope not only with the lack of appropriate skills to teach remotely, but also where the infrastructure in many cases was limited, if not inexistent.

The lack of preparation not only affected teachers, but school principals as well. Not being prepared for the current context was a consequence of limited proficiency for teaching in this new environment, but also of a global shortage of contents, devices and platforms to teach remotely effectively.

### *Learning to “translate” pedagogies for new environments*

In this context, many of the capacity-building activities adopted by countries focused on training teachers and principals in the pedagogical integration of different digital platforms (and incorporating analogue tools, such as radio or television). This emerging reality required not only promoting the acquisition of technical capacities but also, and perhaps more importantly, developing the capacities to “translate” and contextualise the pedagogies into new environments (distance learning).

One clear example of this was the necessity to adjust, contextualise and prioritise education resources suitable for teaching in remote learning settings, where providing short, simple and easy-to-use learning materials is critical. It was unrealistic to expect students to spend an endless number of hours reading learning materials (or listening to educational radio programmes) on their own if there was not an appropriate pedagogical strategy and the needed teacher support. It took time to understand that student’s attention was one of the scarcer resources.

### *Cognitive and socio-emotional resilience*

The lack of physical human interaction produced side effects that needed to be addressed by the education community in general and by teachers in particular. Preparing for the transition to a remote learning model also implied the necessity to design strategies to secure the social and emotional well-being of students (and teachers) as a key priority. High levels of isolation, disconnection and frustration required teachers to balance not only cognitive and socio-emotional support, but to also plan different forms of remote assistance for learners. In this context, parents played a significant role.

Similarly, teachers in some cases were overburdened with administrative tasks, which inhibited their ability to effectively support learners when needed. Actions were required to address these challenges and to prioritise where teachers could be particularly helpful, such as providing pedagogical assistance, and monitoring and supporting students’ socio-emotional well-being.

In recent months, there has been an abundance of initiatives from governments, civil society and academia to train teachers, provide them with courses, supporting materials, guidance and massive open online courses (MOOCs), among other formal mechanisms to prepare teachers to teach remotely.

### *Learning by sharing with peers*

It is noteworthy that the trends identified during the first wave of the pandemic not only showed the importance of formal training programmes, but also grassroots, bottom-up communities of practice and networks of teachers’ initiatives. All these peer-based practices created a wealth of opportunities through social media and other online learning channels to facilitate regular sharing of resources and experiences, building a sense of community between different teachers who shared similar challenges. Many teachers realised that they could not do their work alone, so they decided to shift to a much more collaborative mindset to learn from colleagues, planning together and sharing resources with the members of their

community. In some cases, those exchanges were through daily webinars, sharing interesting digital resources, discussing opinions of teaching practices or elaborating additional teaching materials. A remarkable number of initiatives relied heavily on the expertise of the teachers' community as a democratic and easy way to learn from each other.

Communities for and by teachers have been a global trend incentivised by the challenges of this pandemic. Interestingly, many of these human networks are grounded in popular, but non-sophisticated, technologies (WhatsApp, Instagram and Facebook, among others). Unlike previous times, in this case, easy-to-access technologies have played an essential role in facilitating communication within the teacher community, but also in keeping regular contact with students and their families.

### *Low tech and a high touch*

WhatsApp groups between students and teachers were used globally to provide classes, offer support or simply share materials, using text, voice and video, among others. In India, for instance, "within two months, 51 000 groups were created with over 1.9 million parents and 200 000 teachers" (Batra, Nangia and Reimers, 2022[6]). However, other forms of low tech were also implemented, such as education radio for teaching or podcasts. For low- and middle-income countries, mobile phones were one of the most often used tools to facilitate the exchange of learning materials, as well as to facilitate interaction between parents and students both in urban and rural contexts (in rural contexts especially via subsidised services for connectivity such as zero-rating for education services). Although this might not sound disruptive from a technological point of view, it was transformative in the sense that low-cost devices were used to connect students and teachers in most cases, something that was probably less common before the pandemic.

In contrast, where access to smartphones was more limited, teachers decided to use phone calls (and in some case in-person visits) to contact their students. These phone conversations allowed the teacher and the student the chance to get to know each other in a new context and discuss the competencies developed and the challenges they were facing during the pandemic. Teachers provided feedback to their students on their progress and further challenged them. Likewise, students provided feedback to teachers about their learning experience. So, despite the difficult circumstances in the stories included in this compilation, it will be easy to find a large number of remote socio-emotional support initiatives implemented across the globe.

Will these exchanges remain after the pandemic is over? Although it is still too early to understand what the long-term implications of these transformative practices will be, it is easy to see that remote learning, even in environments with limited access to digital infrastructure, has been a valuable resource to enable learning at the individual, but also at a system, level.

#### Box 2.1. What did we learn in terms of human readiness?

**Teachers**

The pandemic has shown the importance of supporting teachers in different ways and providing them and school principals with training sessions and curated materials. The elaboration of educational repositories to share good practices and learn from what other teams are doing has been an approach replicated in different regions. Peer-to-peer learning opportunities through social media and online learning resources has been documented in many countries. As observed, encouraging collaboration among professionals can reinforce their sense of community, enabling peer support, as well as sharing past and ongoing good teaching practices. In addition, this sense of community is critical when teachers are under significant demand and stress (professionally and on a personal level). Communities of teachers collaborating can be very active in the production, curation and dissemination of learning materials and other teaching resources. The training and support that teachers receive should not be

limited to learning how to use the different (high and low) technologies, but also to effectively plan, design and implement remote and blended learning. We have learnt the importance of involving teachers from the beginning in the design of more flexible ways of teaching. Regular communication between teachers as well as between teachers and students increases engagement, and opens up opportunities to clarify and adjust when there is a potential deviation or when additional assistance is required.

**Parents**

Parents and caregivers have been key interlocutors in early childhood education, especially when they receive effective guidance and assistance to learn how to promote learning at home. Simple communication via smartphones (or social media) can be of great help to support parents by sharing supportive guides and toolkits. Learning guides could clarify how to structure the "school day", how to assist students with special educational needs and disabilities, but could also guide non-academic aspects relevant for student' well-being. The key will be to implement an honest and frequent communication with and between all stakeholders (i.e. teachers, principals, administrators, students and their families). This is not only vital to secure academic learning, but also to support the emotional demands imposed by the pandemic.

## How did countries face the lack of digital infrastructure and connectivity?

The pandemic caused unprecedented widespread school closures, which at its peak in April 2020, reached over 150 countries and affected 1.6 billion children and youth (UNESCO, 2021[7]; World Bank, 2021[8]). Education systems across the world reacted accordingly and it is estimated that most, if not all, countries implemented at least some form of remote learning (UNESCO, UNICEF and World Bank, 2020[9]). The education response during the coping phase of COVID-19[5] focused on implementing remote learning modalities aiming to reach all students. By nature, most of the responses (policies and interventions) were stop-gap measures aimed at halting or minimising the immediate impact of school closures. They have changed as the macro situation evolved and there is a transition to medium- and long-term learning recovery and remedial measures as schools reopen and blended models of schooling become increasingly common.

While not all countries started at the same level, as some already had previous remote learning programmes, such as education radio in Sierra Leone, education TV in Mexico, or online platforms in Korea and Uruguay, most countries faced challenges related to the lack of digital infrastructure and connectivity; insufficient digital skills among teachers, parents and students; within country inequalities affecting vulnerable populations disproportionally; and a lack of access to devices (mobile phones, tablets, laptops) when the available learning modality required their use.

These socio and technological divides limit children and young people from disadvantaged areas from accessing the same content and opportunities as their connected peers. These inequalities have also resulted in many vulnerable children not being able to access remote learning during the pandemic. For example, almost one-third of all students globally (nearly half in sub-Saharan Africa) did not access any

[5] The World Bank recommended a set of policies focused on mitigating the twin shocks caused by COVID 19: 1) the near-universal closing of schools at all levels; and 2) the economic recession sparked by measures to control the pandemic. These were mapped to three phases: coping, managing continuity, and improvement and acceleration. Coping policies are designed to help education systems manage the immediate impacts of school closures, such as preventing learning loss through remote learning. Managing continuity policies aims to guarantee that schools reopen and reintegrate students to start learning recovery. Improvement and acceleration policies focus on recommendations to build stronger education systems, incorporating innovations developed during the crisis response.

modality of remote learning during the pandemic (UNICEF, 2020[11]). Additionally, traditional social norms may lead to a higher level of household chores assigned to girls, reducing their time for lessons (World Bank Group, 2020[12]).

### Box 2.2. A pandemic of inequalities

Some statistics to illustrate the many gaps and divides that existed before and were highlighted during the emergency response to COVID-19:

- More than 1.3 billion students, representing two-thirds of school-aged students (3-17 years old), do not have access to the Internet at home.
- The difference in access to the Internet becomes starker between higher income and low-income countries, with only 6% of students in low-income countries having access vs. 87% in high-income countries.
- Inequalities within countries also exacerbate the gap, with 58% of global students having access to the Internet if they belong to the richest quintile in their country.
- Additionally, there is an urban-rural divide in connectivity, with the largest gap (35%) in Latin America.
- Youth in sub-Saharan Africa are the least connected: approximately 60% are not on line, compared with just 4% in Europe.
- In sub-Saharan Africa, fewer girls than boys possess digital skills. For example, in Ghana, 16% of adolescent boys have digital skills vs. 7% of girls. In the Democratic Republic of Congo, 46% of boys with access to a computer at home use them at least once per week vs. 24% of girls.

Sources: (United Nations Children's Fund and International Telecommunication Union, 2020[10])

Even with all these limitations, countries needed to provide remote learning and reach as many students as possible as part of their emergency response. Some of the strategies used to overcome a lack of infrastructure and connectivity (World Bank Group, 2021[13]) included the use of multichannel strategies, zero-rate or subsidised Internet access, facilitating access to devices, and investing in expanding infrastructure.

### *Multichannel strategies*

Some key factors should be taken into account when providing remote learning modalities, such as thinking about the overall contextual factors or enabling conditions (which, in addition to the digital divides analysis described above, also include factors such as previous experience in the delivery mode, teachers' and parents' level of preparedness, as well as availability and quality of content). From the inclusion point of view, adopting the universal design for learning approach (World Bank, 2020[14]) is important, as the diverse needs of students need to be at the centre. Concrete actions include having content that is available in the language students speak at home and content that is adapted for students with special educational needs.

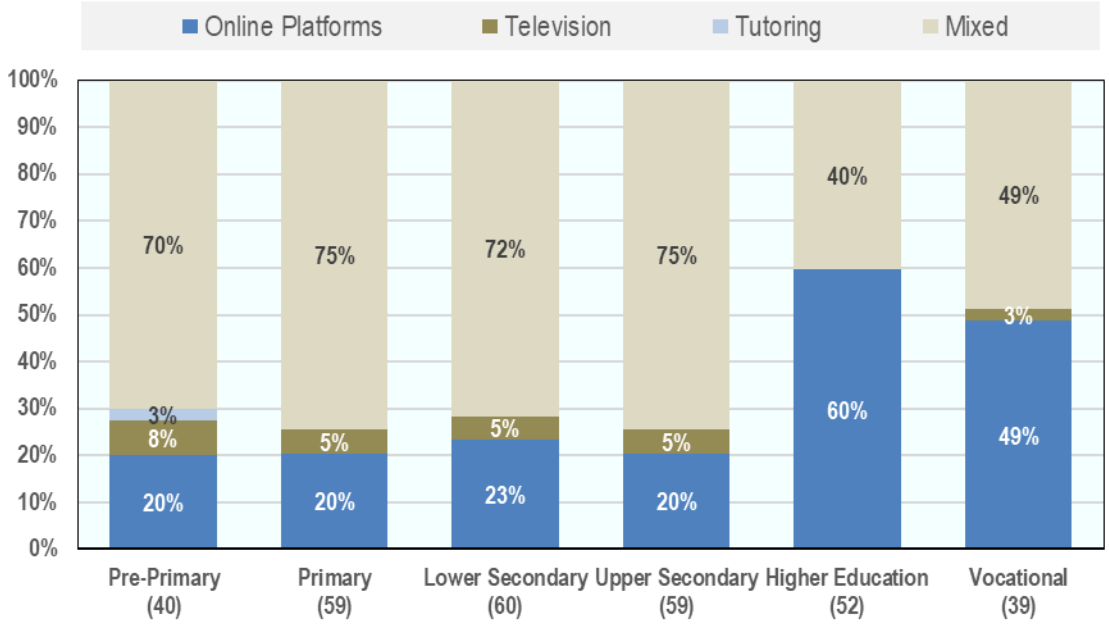
The overall perception of the effectiveness of remote learning is mixed. For example, 27% of low-income countries consider education TV to be very effective while 15% state the same about radio; in contrast, 24% of lower middle-income countries considers online platforms as the most effective. High-income countries prefer online platforms on average and 43% considers them very effective (UNESCO, UNICEF and World Bank, 2020[15]). Going from overall perception to implementing monitoring and evaluation systems that allow systems to gather the user experience from students, teachers and parents is crucial

to ensure lessons are learnt from this crisis. Some countries such as Brazil, Kenya and Uruguay are managing this by organising phone or online surveys (Education Global Practice, 2020[16]).

While further research is needed to determine the most effective combinations of remote learning channels, some country examples show promise for countries with low connectivity. A qualitative cross-country study focused on the perceived effectiveness of remote learning modalities (Barron Rodriguez et al., 2021[17]) found that the combination of radio and printed material is considered highly effective in Mozambique. At the same time, in Cambodia, complementing printed material with SMS and social media engagement has been deemed as effective (Education Global Practice, 2020[16]). Another important consideration when designing remote learning strategies is the quality of the content and prioritising using resources that are contextually relevant to the local country or, when possible, to adapt open source content to respond to local needs and learning goals.

The rationale behind applying different remote learning modalities (ranging from low-tech options such as TV, radio and print packages to mobile and online learning, whether synchronous or asynchronous) is to increase uptake and reach a higher number of students in rural and urban areas. Designing a multichannel strategy is complex in the sense that decisions need to be taken to enable the highest levels of complementarity and coherence between modalities. For example, there has been an increase in the use of mobile phones or toll-free lines to complement radio, TV and print materials and add a layer of interactivity to the learning process by allowing parents/teachers to receive feedback on how best to ensure that students practice their lessons and enrich takeaways on what they had just listened to or read. By December 2021, globally, countries are increasingly opting for multichannel or mixed remote learning modalities (Figure 2.1) across education levels, except for higher education, where online platforms are the most common.

## Figure 2.1. Remote learning modalities, by education level




Source: (Johns Hopkins University, World Bank and UNICEF, 2021[18])

### *Zero or subsidised rates to allow for connectivity, facilitating access to devices and expanding infrastructure*

In contexts where connectivity is limited, countries have identified and deployed strategies to increase and/or diversify the solutions: affordability was tackled, for instance, through zero-rating or subsidies and distributing free SIM cards and devices to low-resource families; for access – where there is limited access or generally low coverage of the network, the challenges are either to expand the infrastructure and/or to adopt offline methods (pre-loaded contents).

For example, from the 134 countries that also participated of the above-mentioned survey (UNESCO, UNICEF and World Bank, 2020[15]), around 60% subsidised or provided Internet access at zero cost, such as granting free access to national online platforms or providing funds for Internet subscriptions. These countries included Chile, Colombia, Saudi Arabia and Thailand. For example, Peru and Brazil entered into agreements for zero-rated data tariffs. Other measures included providing devices at a lower price and supporting access to online learning platforms through mobile phones.

#### Box 2.3. Debunking a myth: Are radio and TV only used by low- to middle-income countries during the pandemic?

**As students and teachers continue to adapt to remote learning, middle- to high-income countries are turning towards TV as a way to engage more learners.**

In the United Kingdom, the BBC started broadcasting curriculum-based lessons in January 2021. This includes three hours of primary school programming and at least two hours for secondary pupils. This policy comes amidst concerns that low-income families are struggling to afford data packages as they depend on pay-as-you-go schemes or monthly subscriptions with small data allowances, and their children are unable to take part in online learning as most schools in the United Kingdom use videoconferencing software that can consume a lot of data.

Similarly, in some cities in the United States, educators have teamed up with a broadcast channel and are using “Lets Learn NYC” (a one-hour weekday programme with condensed lessons on a variety of topics) to engage children from public schools that don’t have access to the Internet or devices and had been left behind. The divide in education in the United States tends to affect rural, Latino and families of colour. It is estimated that about 15 million students did not have an adequate device or reliable Internet connection at home.

In Viet Nam, the Ministry of Education and Training quickly identified at the start of the pandemic that only 10-20% of students and teachers in less advantaged areas had access to devices at home and realised it was not possible to only implement online learning. Because over 90% of households own a television, broadcasting lessons became the most viable option to reach more students. TV lessons were designed and rethought to best prepare students to complete the school year. Additionally, care was taken to cater to the different needs among localities by involving 28 TV stations and engaging local teachers.

Latvia developed broadcast educational video lessons to be aired on two main channels daily between 9 a.m. and 2 p.m. until the end of the school year on 29 May 2020. These were available on line as well. They identified TV as a good complement to online learning after conducting a survey among parents to get an understanding of the availability of digital devices.

Finland developed Yle Distance School, which compiled a variety of resources produced before the pandemic including TV and radio shows, podcasts, and articles. They also prepared an open slot in the programming schedule to broadcast selected clips.

### Box 2.4. What did we learn about technological readiness?

During the crises, pre-existing technology tended to be easier to integrate in remote and blended learning than totally new technologies. During the pandemic, WhatsApp, radio and television have played a central role for students with limited access to the Internet. It is always a good practice to develop both digital and non-digital learning strategies to ensure that all children have access to learning material and support. Flexibility is important and it is best to prioritise channels of communication that can reach a large number of families while also exploring specific solutions to target those in particularly isolated regions. Instead of siloed solutions, it is best to adopt open and international standards to secure interoperability and integration of remote learning solutions that will facilitate better data collection and a deeper understanding of the learning experience when students are learning remotely. Local broadcasting partners can be part of the solution. In many countries, the national public broadcasting company has been the backbone of remote learning, especially when a large proportion of students do not have access to the Internet. Different countries have managed to open slots in the broadcaster's programming schedule for daily educational TV shows – either using existing material or creating new live content (e.g. live lessons) with teachers.

During the pandemic, education communities in different regions have created an inventory of existing learning resources available to teachers and students. Content aggregation, curation and adaptation are good practices to promote. Curation of learning materials could imply mapping and tagging the resources according to the respective national curriculum (or local curricula) by grade, discipline and topic to make them easily identifiable by teachers and students (as well as parents). When possible, it will be important to ensure that these resources are adaptable to the mobile version, but accessing these resources should not require unnecessary bandwidth consumption. It will be important to sign copyright and intellectual property agreements from day one.

When possible, prioritise locally relevant contents. When it comes to content, the context and the relevance of the resources will be a key attribute. In addition, the more contents are elaborated or adapted the more relevant will it be to implement sound quality control mechanisms. Finally, simplicity and shareability could be valuable attributes. The resources should be short, simple and actionable. Teachers should not need to spend long hours preparing new learning materials but, when possible, prioritise reproposing existing guidance and educational resources to share them through collective platforms for wider use.

The pandemic has shown that perfect is the enemy of the good. This means staying open to feedback, but also being ready to troubleshoot any problems that arise along the way. Deploy capacity to adjust as much as possible based on users' feedback. This means, among others, to activate channels for listening, gathering information and providing guidance (technical, pedagogical, emotional).

Zero rates enable learners to access educational resources through online platforms accessible through mobile phones or through data packages to support families who need it most. Mobile data packages also support the use of messaging and calls that could complement radio and TV learning modalities. For example, in Argentina, browsing the governmental education portal Educ.ar is free of charge through an agreement between the ministry and telephone companies. In Croatia, telecommunications providers have agreed to distribute SIM cards to low-income students to provide them with free Internet access. Jamaica established partnerships with Internet service providers to support subsidised data plans as well, zero-rated learning websites and free SIM cards for parents.

Uruguay's Ceibal en Casa (Ceibal at Home) is an interesting case, featured in the continuity stories, where a versatile learning management system, communication features and more than 170 000 educational resources, including adaptive solutions and gamification resources, are available for students and

teachers. The programme also includes facilitating access to devices in households where they were needed and expanding digital infrastructure by 400% to reach disadvantaged students.

These experiences show that, where digital infrastructure is present, facilitating access to content by using free to navigate online portals or providing zero-rate data packages can be a good practice. However, this should not be only a "technical" decision, it is important to take into account the opinions of students and teachers when taking these decisions, since they will be the final users of these tools. Learning management systems can be a flexible portal to provide openly accessible resources for teachers, students and parents and increase their interaction. More than the cutting-edge attribute of the technology, it is important to ensure that online platforms and the communication channels adopted are easy to use (user-friendly interface, providing guidelines for teachers and students, and rapid help service).

## How did countries enhance organisational capacities?

Facing the worst crisis for education and learning in a century (World Bank, 2021[8]) impacted heavily on education systems' capacities as remote learning required redesigning and adapting many key features that were planned for and thought of for in-person learning. Some of these include rethinking curriculum delivery and prioritising learning goals, modifying or adjusting the academic calendar, as well as quickly adapting monitoring and evaluation systems designed for in-person learning to assess if remote learning was being taken up and if students were learning.

Additionally, the emergency response led countries to support and collaborate with other countries as well as to establish partnerships with non-profit and private organisations to further strengthen their remote learning strategies. The massive school closures reminded education systems that they cannot and should not operate in isolation (see Box 2.5).

### *Rethinking learning goals and adjusting the academic calendar*

Banerji (2020[19]) highlighted lessons from previous research on learning losses during summer holidays in India, arguing that a focused effort on foundational skills (such as literacy and numeracy) when schools open can lead to improvements over a short time frame. The challenge of adjusting the curriculum and rethinking learning goals is, however, twofold during the ongoing pandemic. On the one hand, there is a need to have remote learning content that maps to the country's curriculum and, if a multichannel strategy is in place, that these different media complement each other to attain the expected learning goals. On the other hand, as countries started to reopen in the latter half of 2020, education systems which sent students back to some form of in-person learning (e.g. staggered, by shifts, by grades, etc.) needed to accelerate learning to account for the reduced learning that occurred during the lockdown period.

As global school reopenings have moved in a pendular manner following the trajectory of contagion peaks of the virus, the question on what to prioritise (and the unspoken question of what to sacrifice) remained relevant for education systems.

In the Middle East and North Africa, TV lessons focused on average on core subjects of the curriculum or prioritised content for students in grades preparing for high stakes examinations.[6] In Panama, authorities adapted the curriculum to focus on essential skills and resilience using an integrated platform that combined TV, radio, print and online resources (Ministerio de Educación de la República de Panamá, n.d.[20]). Pakistan prioritised TV lessons focused on English, maths and science. Kenya declared by mid-July that all schools in the country would remain closed until January 2021 and focused on making remote learning more accessible to all students (BBC News, 2020[21]) and utilised TV content and radio lessons that had been developed before the pandemic which helped reach students without access to the Internet

[6] For example, Egypt, Lebanon and Tunisia (Barron Rodriguez et al., 2021[17]).

(Education Global Practice, 2020[16]). According to the first round of the survey on national responses to COVID-19, 62% of countries were planning to adjust their curriculum by reducing content, reducing subjects or giving each school the autonomy to decide how to re-evaluate learning goals (UNESCO Institute for Statistics, 2020[22]).

### *Collaboration and partnerships*

Engaging a wider ecosystem of allies or partners allowed countries to better respond to the circumstances and deploy remote learning channels faster without having to start from scratch (World Bank, 2020[23]).

Using contextually relevant content aligned with the curriculum during remote learning was easier for countries that already had experience providing learning through these channels. For example, Peru's Ministry of Education partnered with its Mexican counterpart to be able to access their TV lessons previously developed to cover the rural population, as described in one of the continuity stories. In Liberia and Sierra Leone, the Ministries of Education launched radio educational programming within days of school closures as they had developed content during the Ebola outbreak in 2014 (Lamba and Reimers, 2022[24]). Rising Academies, an organisation that supported radio content, launched "Rising On Air" in these countries (Box 1.A3 in Annex 1.A) and offered its content free of charge, it has been used in approximately 20 countries (HundrED, 2021[25]).

In Nigeria, the state of Edo launched Edo-BEST@Home (Munoz-Najar and Osa Oviawe, 2022[26]), a mobile-based extension of the Edo Basic Education Sector Transformation (Edo-BEST) programme, developed as a public-private partnership between Edo's State Universal Basic Education Board, the World Bank and Bridge International Academies. As one of the continuity stories describes, Edo-BEST@Home has been rapidly scaled at a state level and is also being used by other schools in other states in Nigeria.

Non-profit organisations such as Enseña Peru (Mosso and Reimers, 2022[27]), Enseña Colombia, Fundação Lemann, Fundación Súmate, Fundación ProFuturo, among many others have played a key role in supporting governments in designing and implementing remote learning strategies rapidly, monitoring access, and testing their efficacy.

### *Better data for better decisions*

**Monitoring.** In times of crisis, investing in "no regret policies" such as enhancing standard data collection on attendance through phone surveys (see, for example, the World Bank's (2020[28]) high-intensity phone surveys to track the impacts of COVID-19) might help countries learn and act as needed to avoid dropouts and be able to determine if students are accessing education modalities (Dercon, 2020[29]; Mendez Acosta and Evans, 2 October 2020[30]). However, systematised and sustained data-collection efforts among countries to check for attendance, engagement and content retention have not necessarily been widespread or at large scale.

**Assessment.** In addition to data to monitor and guide education policies, assessments have a key role to play as they serve as a feedback mechanism providing teachers, parents and governments with a better vision of the learning process taking place during school closures (Liberman, Levin and Luna-Bazaldua, 2020[31]). Whether formative or summative assessments implemented by teachers at the school level, national examinations, or large-scale system level assessments, all serve to capture learning progress taking place (or lack thereof) and can serve to better tailor remedial strategies in education systems.

Many countries cancelled or postponed high stakes examinations (e.g. Haiti, Mozambique and Pakistan), and some reduced the curriculum areas to be assessed. For example, Saudi Arabia switched the Standardized Achievement Admission Test to an online format and content was adapted to remove items from the schooling period affected by COVID-19. It is estimated that during COVID-related closures and

as schools reopened, the main type of assessment used by education systems was school-based formative assessment, with 65% of countries implementing it at primary level and 62% at secondary level (UNESCO, UNICEF and World Bank, 2020[15]). Examples of countries relying on formative assessment include Cambodia, Estonia and Uruguay.

The COVID-19 pandemic presents significant opportunities to innovate and redesign systemic approaches to monitoring and evaluation. The ubiquity of formative assessment has highlighted the central role of teachers to respond to the different needs of students and adjust their teaching practices accordingly. Not all learning processes are equivalent and developing different competences can require higher, and in some cases lower, levels of interaction according to each student's needs. High- or low-tech solutions and their limitations might also support the development of some skills better than others, which is something that should be further studied during the second year of the pandemic.

### Box 2.5. What did we learn in terms of institutional readiness?

The pandemic has made it clear that Ministries of Education cannot operate in isolation. Given the interdisciplinary nature of the digital education endeavours, it is critical that ministries work in close articulation with other entities (public, private, academic) to effectively orchestrate different players and secure the quality of the overall learning experience instead of leading each one of the critical services needed (e.g. financing, deploying connectivity, acquisition of devices and learning materials, training teachers, monitoring, etc.). In some countries, the preferred institutional model for managing the educational policy is defined by high levels of centralisation, while in others the preference is a more decentralised approach. The overall challenge has been (and will be) to effectively convene and articulate the digital education ecosystem which tends to be very dynamic, convening all the key players (product and service providers). Ministries of Education and related entities can establish partnerships between different stakeholders and rely on existing links and networks at the regional and national levels (ministry, EdTech companies, local and regional authorities, etc.), both to mobilise financial and human resources and to solve logistical problems. Developing partnerships with companies and non-profit organisations is strategic to avoid delays due to bureaucratic procedures. In other words, to maintain constant dialogue, it is important to build and facilitate good relations (and co-ordination) with all stakeholders.

A good practice before mobilising all the required stakeholders is the effective (and timely) diagnostic of the situation, defining the problem and dividing responsibilities for the different aspects of implementing the solution. The diagnostic can be external (to understand the main necessities of the education community and the characteristics of the technological infrastructure and the human capacities available), or internal (to clearly define what capacities are available within the ministry and what could be enriched by external collaborators): understand the context, needs and constraints of the target population, including their level of access to materials (radio, TV, phone, smartphones, connectivity and print) and the support required.

Where possible, externalise areas where the institution does not have enough capacities, experience or simply cannot respond with the effectiveness or in the time needed.

Devote time to think about how the strategy will continue in the future. The emergency responses adopted during the first year of the pandemic will need to be assessed by the competent authorities to define short-, medium- and long-term plans addressing questions such as what support is needed to deploy effective remote and/or blended learning systems? What capacities will need to be consolidated? What institutional designs (at national or international level) can be helpful to consider?

## Lessons learnt: From remote learning to blended and in-person learning?

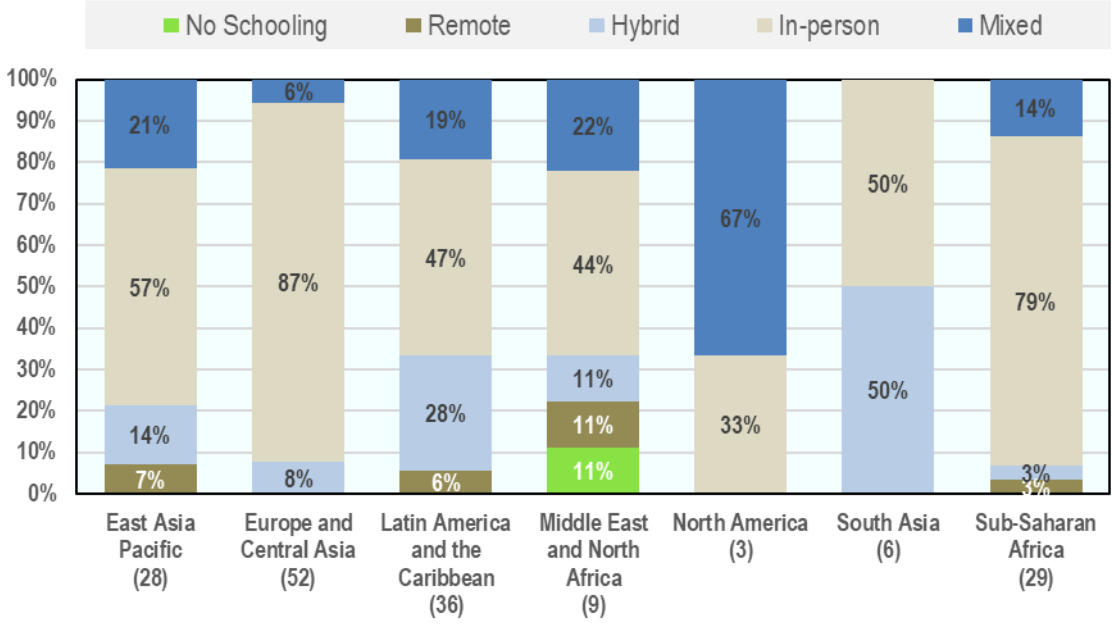
### Box 2.6. What is blended or hybrid learning?

UNESCO (2020[32]) defines blended learning as a learning modality that combines both remote learning channels and in-person learning to improve students' experience and ensure learning continuity. Other definitions understand blended or hybrid learning as any combination of in-person learning with digital or online channels of learning (Fullan et al., 2020[33]; IBE-UNESCO, n.d.[34]).

While this definition may sound simple at first glance, the concept is more complex in the sense that it contains a variety of forms, ranging from a student attending school one day per week and receiving remote learning the other days to students attending school the whole week but using remote learning as a complementary measure to accelerate learning. Students' experiences, learning processes and social experiences therefore vary widely according to which type of blended approach they might be receiving.

The pandemic has caused the largest school closures in recent history (Our World In Data, n.d.[35]) and while the emergency response relied heavily on the use of remote learning, countries across regions are increasingly relying on in-person, blended learning or mixed modalities according to the COVID-19 Global Education Recovery Tracker. By December 2021, in-person learning had increased in Africa, Europe and Central Asia, as well as East Asia Pacific while hybrid learning was still widely used in South Asia (Figure 2.2). Yet, partial and ongoing school closures produced by outbreaks (still) make remote learning a modality for many children and young people for the foreseeable future.

### Figure 2.2. Learning modalities during the COVID-19 pandemic at primary school level, per region




Note: Please note that in these calculations, countries that implement more than one learning modality appear as "mixed". The number of in parenthesis mentions the number of countries that responded.
Source: Johns Hopkins University, World Bank and UNICEF (2021[18]).

Even by the time the pandemic ends, it is possible that there will be a legacy of resilience across education systems going forward. It is also important to highlight the continued national and global efforts to put remote learning modalities in place, oftentimes in record time, as illustrated by the continuity stories. Additionally, rarely have there been so many institutions in the international community, governments, non-profits and the private sector working together to advise, compile and reflect on emerging lessons for education systems.

There are some ideas about how remote learning might become a long-term feature among some education systems.

**Remote learning can help education systems become more inclusive.** Leaving no child behind became a priority for countries. In a way, school closures highlighted the inequalities already present but perhaps hidden while student learning occurred at the same place. Families with more income and time to help their children could invest in more learning resources, perhaps even access to tutoring. Families with lower income levels may not have had time to support their children or the means to access devices or data packages. Additionally, the rollout of remote learning modalities has highlighted inequalities within households; for example, with girls accessing devices less than boys or with children with special educational needs requiring more support than their siblings.

Some continuity stories that illustrate this include:

- ***Turkey: Özelim Eğitimdeyim*** (Vidal, 2022[36]). The "I am special, I am in education" mobile application specifically designed for students with special educational needs, from learning difficulties to sensory and cognitive impairments, aims to ensure maximum engagement not only from the students, but also to support their families and caregivers with useful educational resources.
- ***Peru: Aprendo en Casa (I Learn at Home)*** (Munoz-Najar, 2022[37]). The Ministry of Education leveraged existing resources and engaged various stakeholders to build a multichannel remote learning solution that was rapidly scaled at the national level. Ministry officials mobilised and developed resources in three key components of the remote learning strategy: 1) infrastructure and connectivity; 2) content; and 3) delivery platforms. They provided alternative arrangements for students who do not have the required technology or who have special needs or are in remote locations.

**Remote learning can reach more students and/or complement in-person learning.** It is often easy to forget how two students sitting side by side in a classroom may have very different backgrounds, with one perhaps having to walk for hours to get to school, or how difficult it is to recruit and keep teachers that need to work in remote, rural or dangerous areas. It is well known that some of the resources that are being used now were first developed in response to previous pandemics such as Ebola, but it is not that common to recognise that resources also come from refugee and rural education. In fact, these two areas will benefit from all the widespread production and adaptation of new contents during the COVID-19 pandemic. Educational TV lessons, for example, were used before the pandemic to "support an inadequate supply of secondary education due to a shortage of qualified teachers willing to work in rural or marginalised areas, especially in developing countries" (Calderoni, 1998[38]; Banerjee et al., 2013[39]) as well as in areas with high teacher absenteeism (Navarro-Sola, 2019[40]).

A continuity story that illustrates this is:

- ***India (Telangana): Remote learning and village learning circles for disadvantaged students*** (Zacharia, 2022[41]). Once the lockdown was lifted and small gatherings were allowed, student-led "village learning circles" were established to ensure that students without access to other forms of remote learning (e.g. mobile phone or TV-based lessons) were not left behind. The village learning circles model can also easily be used in other contexts, including after the pandemic, for instance to accelerate learning or to provide remedial support.

**Remote learning can help build resilience into education systems.** In the education sector, resilience refers to "the ability of children, families, communities and systems to withstand, adapt to and recover from shocks and stresses". Resilient education systems enable countries to respond to the immediate challenges of safely reopening schools and positions them to better cope with future crises (UNESCO, 2021[7]; Giannini, Jenkins and Saavedra, 2021[42]). The pandemic has made us rethink the way children learn, the role of teachers and of parents, and the use of assessments. It has also forced us to re-evaluate what skills students and teachers need beyond the traditional curriculum. While it might be difficult to impart lessons to students on core academic subjects (language, science, maths, etc.) using a variety of remote learning channels (radio, TV, mobile, online platforms, print), socio-emotional skills such as self-regulation can allow students to adapt better and capitalise on the higher level autonomy that might come with remote learning (Carretero et al., 2021[43]). Additionally, research shows that educational strategies that better support the development of students' cognitive and behavioural skills such as decision making, anxiety control, communication, self-reliance and assertiveness are more likely to succeed, and that holistic education approaches that include mental health and well-being considerations can be effective to support learning in the long term (The Lancet, 2021[44]).

India, New Zealand and Nigeria provide some examples:

- ***Nigeria: Edo-BEST@Home*** (Munoz-Najar and Osa Oviawe, 2022[26]). A mobile-based remote learning programme that extends the pre-existing Edo Basic Education Sector Transformation (Edo-BEST) programme includes a virtual coaching programme and a helpdesk so that teachers can request specific ongoing support.
- ***India: Arts for All, Slam out Loud*** (Agrawal et al., 2022[45]). Slam Out Loud is an Indian non-profit that uses the arts along with multiple low-tech platforms to deliver support for arts-based socio-emotional learning and mental well-being to the most vulnerable children at scale. Its resources are free of charge, interactive, and accessible in English and Hindi (and being translated into Punjabi, Tamil, Malayalam and Marathi).
- ***New Zealand: Te Rito Toi*** (van Lieshout, 2022[46]). Te Rito Toi is an online resource to support primary education teachers in addressing student well-being as they return to the classroom. Te Rito Toi is a metaphor in Māori representing how the arts (*Toi*) are at the centre of all growth. The project provides guidelines for principals and teachers, lesson plans, detailed strategies for classroom support, and publishes accessible research on the bigger context of art and social and emotional learning on its online platform.

## Conclusion

Before concluding, it is important to keep in mind that the innovations documented by the continuity stories were implemented by different governments and organisations in "emergency mode", where rapid response was critical. The experiences included in this publication were not necessarily applied at scale. In some cases, they benefited only a few communities or a small subset of the school systems. After the first year of the pandemic, it is time to reflect deeper on the scalability (at a national level or similar) and the medium- and long-term learning impact of these initiatives. In other words, quality and impact should now be the lenses through which these innovations need to be analysed (USAID, 2020[47]). In some cases, the objection may be to replicate these continuity stories at scale while in others it may be to adapt or transform using lessons learnt or reinvent what can be done much better.

### *The COVID-19 pandemic will have long-term implications for learning and the economic prospects of this generation*

It is estimated that by February 2021, schools had been closed for almost a full school year for 168 million children, with education systems in the Latin America and Caribbean (Panama at 211 days) (UNICEF, 2021[48]) and South Asian regions presenting some of the highest total number of days of school closures. Additionally, there seems to be an association of countries with the longest periods of school closures with a low fixed Internet connection at home, which further exacerbates learning losses.

This generation of students might stand to lose approximately USD 10 trillion in earnings (Azevedo et al., 2020[49]), almost 10% of global gross domestic product, and in a scenario where schools remain closed and there are low mitigation and remediation strategies to support students, it was projected that learning poverty (the capacity to read and understand a simple text) may increase to 63% (World Bank Group, 2020[50]).

Getting students back to learning is crucial and this requires either effective remote learning, consolidated blended modalities or in-person education with the necessary health precautions. However, this will only be the beginning, much more work will be needed in terms of assessing learning losses, supporting the education system to implement remedial programmes and designing new actions to build back better.

### *Building evidence on the use of remote and blended learning: Countries need to know what is working and if learning is taking place*

As countries move from coping mechanisms to face the pandemic towards recovery policies, evaluations must be carried out to find out what has worked, in what context and for whom. While many countries have focused on implementing process evaluations (checking for access and usage of learning modalities, for example), few have evaluated results (i.e. learning outcomes). Evidence from interventions deployed in this period that manage to keep students learning at scale, accompanied by cost effectiveness analysis, are pivotal, as the pandemic has also caused a decrease in national education budgets. In fact, over 60% of low-income countries are decreasing their spending (World Bank, 2021[51]). With an increasing number of schools reopening that will hopefully continue over time, countries will need to decide what interventions to implement in a context of scarce resources. Fortunately, efforts are already in place to help them determine which programmes are the most cost effective, such as the World Bank and FCDO's Global Education Evidence Advisory Panel (Building Evidence in Education; World Bank; Foreign, Commonwealth & Development Office; and UK aid, 2020[52]) which classifies policies according to the level of evidence produced as well as their cost effectiveness.

This chapter has illustrated how low- and middle-income countries as well as high-income ones have almost all devoted efforts to implement learning modalities that have taken classrooms from schools and placed them into homes across the world. Going forward, the focus needs to be on tackling learning losses and working to design and deploy education programmes to help education systems recover and accelerate learning among students. Learning from country experiences and documenting lessons from this unprecedented period is still a priority, as it will lay stronger foundations for longer term educational reforms.

The lessons learnt documented here and the analysis of the different remote learning implementations will shed light on how countries can incorporate these high- and low-tech educational solutions in the future. While many countries are still suffering the consequences of the pandemic, and many schools are still closed for sanitary reasons, the experiences shared in this publication bring some promising opportunities for the future. There is no doubt that many of the experiences included here will require further adaptation or improvement. Some of these initiatives could be useful not only for remote learning, but also during school reopenings and for remedial education that is on the horizon of many educational systems.

## Acknowledgments

The authors would like to express their sincere gratitude to Jaime Saavedra (Global Director of Education), Omar Arias (Manager of Global Engagement and Knowledge), the EdTech core team, the Global Education Recovery Tracker team and the entire team from the World Bank's Education Global Practice for their contributions to this chapter as well as for the elaboration of the continuity stories. Special thanks to Alex Twinomugisha (Senior Education Specialist) and Inaki Alejandro Sánchez Ciarrusta (ET Consultant) for their thorough review and constructive comments.

# Annex 2.A. Highlights on continuity stories per topic

### Box 2.A.1. Spotlight: Five continuity stories focused on human readiness

While not a comprehensive list, these stories have explored ways to support teachers and keep them connected with their peers, students and parents.

**Colombia: A prender la Onda (To Turn on the Wave)** (Saenz, Medina and Uribe Holguin, 2022[53]). This is an initiative led by a group of Enseña por Colombia (Teach for Colombia) to support students' learning during the COVID-19 crisis. A prender la Onda designs, records and distributes learning audio podcasts through WhatsApp, local radio stations and other streaming platforms.

- A grassroots solution led by teachers, they design and record broadcasts for other teachers, students and their families. Teachers and students received training to design produce and edit podcasts.

**India (Telangana): Remote learning and village learning circles for disadvantaged students** (Zacharia, 2022[41]). Telangana Social Welfare Residential Educational Institutions Society runs residential educational institutions to provide high-quality education to children of scheduled caste communities in Telangana who are disadvantaged and marginalised in India.

- Pedagogically strong teachers from the residential institutions were trained and coached to present TV lessons and created their own.
- Teachers called students and provided them with one-on-one support when needed or when students experienced difficulties in accessing remote education channels.
- Teachers were trained on the flipped classroom method via WhatsApp to highlight greater equity between students and teachers.

**Uganda: Popow's Radio Response to COVID-19** (Kaiser Schuster, Ringe and Reimers, 2022[54]). Prince of Peace Orphans and Widows (POPOW) is a community-based non-profit organisation focused on empowering community youth, orphans and vulnerable children to realise their full potential and achieve sustainable livelihoods.

- For younger Kumam-speaking learners, the non-Kumam broadcasts held a double challenge in learning material and deciphering a language they are not yet fluent in.
- POPOW sponsored educational radio talk shows for teachers to broadcast their lessons in Kuman to reinforce learning and keep Kumam-speaking students learning in academic and socio-emotional domains.
- Teachers and students were engaged in panels in which they could speak about their experiences and share multiple perspectives while creating a sense of community among listeners. These panels focused on students' socio-emotional development during the pandemic.

**Chile: Fundación Súmate – Red de Escuelas de Segunda Oportunidad (Súmate Foundation – Second Chance Schools Network)** (Madero, Vargas and Reimers, 2022[55]). The Súmate Foundation supports out of schoolchildren and youth between the ages of 12 and 21 in resuming their schooling by joining a second chance school and participating in an adaptation process.

- Súmate relied on free social networks, such as WhatsApp, Instagram and Facebook, and on students' mobile phones as communication channels to continue providing emotional support to students and their families, as well as to teachers.
- It encouraged collaboration among teachers and provided peer support to balance the educators' personal lives with the demands of the young people they help. Teachers have become more open to knowing more about other teachers in this virtual setting. A strong culture of teacher engagement in the school was developed.

**United States and Ukraine: Virtual Edcamps** (Modica, 2022[56]). The Edcamp model is built on the idea that teachers can learn from and inspire one another to enhance their professional skills with the goal of improving student outcomes.

- Since March 2020, dozens of flexible and low-cost online Edcamps have supported tens of thousands of teachers to learn about and share their experiences with teaching remotely during the COVID-19 crisis.
- Edcamp Ukraine successfully hosted the national online Edcamp, "High Five for Education" and in the United States, Digital Promise hosted a series of online Edcamps collectively titled "Edcamp: Powerful Learning at Home".

### Box 2.A.2. Spotlight: Five continuity stories focused on technological readiness

While not a comprehensive list, these stories have highlighted how to support education continuity by making it more inclusive, even amidst challenges such as the lack of digital infrastructure and connectivity.

**India (Madhya Pradesh): #Ab Padhai Nahi Rukegi (#Learning Will Not Stop)** (Batra, Nangia and Reimers, 2022[6]). COVID-19 school closures in Madhya Pradesh led to strategies to continue learning through digital (prioritising sharing content through WhatsApp) and non-digital channels (radio, TV and printed workbooks) under the campaign "Learning Will Not Stop".

- Large-scale randomised calling was set up at the state level to get feedback from teachers and parents on the implementation on the ground.
- Once schools reopen, the digital library and WhatsApp communication channels established during the pandemic can be integrated with in-person instruction, and leveraged to reinforce everyday lessons, as going back to school may include regular periods of school closures.

**India, Kenya, Lebanon, Pakistan and Zambia: Education Above All's Internet Free Education Resource Bank (IFERB)** (Maheshwari-Kanoria, Zahir and Petrie, 2022[57]). Education Above All developed IFERB (Education Above All, n.d.[58]) to promote continuity of education for the world's most marginalised learners.

- IFERB contains over 120 project-based learning resources as well as an activity bank for students with disabilities that can be implemented using minimal materials while requiring virtually no Internet connection. Its resources can be implemented using a variety of media depending on the context, including phone calls, SMS or other text-messaging applications using feature phones or smartphones, radio and in-person classes.
- IFERB's adoption in over five countries suggests that it is relevant across geographical contexts and user types. Materials have been translated into eight languages and continue to be contextualised by partners.

**Colombia: Colombia Aprende Móvil (Colombia Learns Mobile)** (Sánchez Ciarrusta, 2022[59]). The Ministry of National Education provided a wide variety of free educational resources to the educational community through its online platform, but to guarantee access to this educational content nationwide during the pandemic, the government also required that mobile operators to provide zero-rating.

- As 44.9% of individuals use a computer in Colombia and 85.2% a mobile phone, the Ministry of National Education decided to create a mirror portal of Colombia Aprende (Colombia Aprende, n.d.[60]) for mobile phone in collaboration with the Ministry of Information Technology.
- The initiative facilitates access for teachers, parents and students in rural and urban areas through free navigation in the mobile version of the Colombia Aprende platform.
- The programme was not a standalone initiative. It has been combined with the broadcasting of educational content both on radio and on television.

**Brazil: Secretaria Estadual de Educação de São Paulo (São Paulo State Department of Education)** (Dellagnelo and Reimers, 2022[61]). The state of São Paulo was the first state in Brazil to implement consistent measures to respond to school closures due to the COVID-19 pandemic. Enabling factors were a combination of strong leadership and the collaborative work of a dedicated executive team and a network of influential donors.

- To reach the maximum number of students and their families, the state offered a combination of printed material, TV programmes and online platforms. This model has been replicated in other states of Brazil.
- The state redirected financial resources towards sponsoring students' Internet access and the contract with the TV station to broadcast the media centre's video classes.

**Pakistan: TeleSchool and Taleem Ghar (Educational TV at Home)** (Zacharia, 2022[62]). Pakistan's Ministry of Federal Education and Professional Training launched an education TV initiative called TeleSchool and, at a regional level, the Punjab province's School Education Department launched its own local initiative called Taleem Ghar.

- Television reach stands at roughly 95% of the population across Pakistan and roughly 90% across the province of Punjab, making television the viable option for remote learning.
- TV broadcast scheduling and communication campaigns were developed to spread awareness regarding programming to students, parents/caregivers and teachers.

### Box 2.A.3. Spotlight: Five continuity stories focused on institutional readiness

While not a comprehensive list, these stories have highlighted how countries leveraged existing content (both their own and third party) and how they have revaluated learning goals and prioritised foundational skills during the lockdown.

**Peru: Aprendo en Casa (I Learn at Home)** (Munoz-Najar, 2022[37]). Peru's Ministry of Education, with support from non-governmental organisations, technology companies, telecommunication operators and broadcasters launched a multichannel remote learning initiative to mitigate learning loss as a result of school closures: Aprendo en Casa.

- A large pedagogical team at the Ministry of Education created as well as curated already existing content, which consisted of mainly educational videos and digital workbooks.

- This team also curated external content that third-party organisations such as Plaza Sesamo (Mexico) and Paka Paka (Argentina) agreed to share for free with Aprendo en Casa.

**Mexico: Aprende en Casa (Learning at home)** (Florencia Ripani and Zucchetti, 2022[63]). Aprende en Casa was created by the Secretary of Public Education of Mexico to provide pedagogical continuity to 25 million students from preschool to primary and secondary education nationwide.

- The backbone of the initiative was educational TV, a field in which Mexico had long-standing experience since the creation, in 1968, of Telesecundaria, a national literacy initiative based on TV shows for secondary schools in rural and isolated areas.
- Mexico's lines of implementation, involving the use of several complementary outputs, resources and services such as radio, printed materials, online contents and teacher training.

**Sierra Leone and Liberia: Rising Academy Network On Air** (Lamba and Reimers, 2022[24]). Rising On Air is a 20-week programme of free, ready-to-air, radio scripts and SMS content made available to partner organisations around the world.

- The programme leverages Rising's structured curriculum content redesigned for delivery via existing, widely available technologies: radio, phone and SMS. A new standardised foundational curriculum had to be created for radio so the content could be adapted for other countries and contexts.
- Radio lessons are currently being translated into Arabic for use in refugee camps, as extended school closures or intermittent school closures around the world have become likely during the COVID-19 pandemic.
- The programme has the potential to support the most remote rural students both during the pandemic and afterwards to ensure they have access to education.

**Brazil: Educação Infantil no Maranhão (Early Learning in Maranhão)** (Paulet Piedra and Reimers, 2022[64]). The Brazilian state of Maranhão ranks tenth in the country's population size and is home to more than 1.8 million public school students. The secretariat's response began promptly two weeks after the initial decree mandating school closures and involved the distribution of educational content through state-owned radio and 40 regional subsidiaries.

- Compliance with National Education Board guidelines for remote learning in early childhood education required that the secretariat face a multi-faceted challenge because materials had to be created with parents, not teachers, as the key target audience.
- Given the social and economic conditions in a poor state such as Maranhão, the adopted solution could help empower families to see themselves as educational agents, regardless of their own schooling trajectories.

**Spain: #SeeYouInDigital (ensuring the continuity of learning)** (Encinas-Martin, 2022[65]). To mitigate the consequences of school closures across the world triggered by COVID-19, the digital education programme ProFuturo put in place a contingency plan ensuring the continuity of teacher training and student learning away from classrooms.

- ProFuturo adapted its blended training methodology (usually a mix of online and face-to-face) to fully remote training including WhatsApp forums, and an offline app for teacher training.
- Some resources that were only available locally have been adapted so they can now be used at a global scale; for example, Oráculo Matemágico, an app that gamifies maths that was created by Telefónica Foundation Peru. The app was launched globally in mid-April and adapted to all Spanish-speaking contexts.

## References


Agrawal, S. et al. (2022), "India: Arts For All, Slam Out Loud", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [45]

Azevedo, J. et al. (2020), *Simulating the Potential Impacts of the COVID-19 School Closures on Schooling and Learning Outcomes: A Set of Global Estimates*, World Bank, Washington, DC, https://www.worldbank.org/en/topic/education/publication/simulating-potential-impacts-of-covid-19-school-closures-learning-outcomes-a-set-of-global-estimates. [49]

Banerjee, A. et al. (2013), *Expanding access and increasing student learning in post-primary education in developing countries: A review of the evidence*, Abdul Latif Jameel Poverty Action Lab, https://core.ac.uk/download/pdf/71361947.pdf. [39]

Banerji, R. (2020), *Learning "Loss" and Learning "Gain" in Primary School Years: What Do We Know from India That Can Help Us Think Forward in the COVID-19 Crisis?*, RISE Insight Note, Research on Improving Systems of Education, https://riseprogramme.org/sites/default/files/publications/20200723_RISE%20Insight%202020_19_Banerji_UP.pdf. [19]

Barron Rodriguez, M. et al. (2021), *Remote Learning During the Global School Lockdown : Multi-Country Lessons*, World Bank, Washington, DC, https://openknowledge.worldbank.org/handle/10986/36141. [17]

Barron, M. et al. (18 February 2021), "The changing role of teachers and technologies amidst the COVID 19 pandemic: Key findings from a cross-country study", *Education for Global Development Blog*, https://blogs.worldbank.org/education/changing-role-teachers-and-technologies-amidst-covid-19-pandemic-key-findings-cross. [66]

Barron, M. et al. (27 April 2021), "What is hybrid learning? How can countries get it right?", *Education for Global Development Blog*, https://blogs.worldbank.org/education/what-hybrid-learning-how-can-countries-get-it-right (accessed on 16 September 2021). [2]

Batra, G., A. Nangia and F. Reimers (2022), "India (Madhya Pradesh): #Learning will not stop", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [6]

BBC News (2020), "Coronavirus: Kenyan schools to remain closed until 2021", BBC News, https://www.bbc.com/news/world-africa-53325741 (accessed on 21 September 2021). [21]

Building Evidence in Education; World Bank; Foreign, Commonwealth & Development Office; and UK aid (2020), *Global Education Evidence Advisory Panel*, World Bank, Washington, DC, https://thedocs.worldbank.org/en/doc/542371603461026964-0090022020/original/GEEAPTORcleanRev10222020fin.pdf. [52]

Calderoni, J. (1998), "Telesecundaria : Using TV to bring education to rural Mexico", *Education and Technology Technical Notes Series*, Vol. 3/2, World Bank Group, Washington, DC, https://documents.worldbank.org/en/publication/documents-reports/documentdetail/559251468774647437/telesecundaria-using-tv-to-bring-education-to-rural-mexico. [38]

Carretero, S. et al. (2021), *What Did We Learn from Schooling Practices During the COVID-19 Lockdown? Insights from Five EU Countries*, JRC Science for Policy Report, Publications Office of the European Union, Luxembourg, http://dx.doi.org/10.2760/135208. [43]

Cobo, C. and I. Sánchez Ciarrusta (22 April 2020), "Successful examples of scaling up teaching and learning in response to COVID-19"*, Education for Global Development Blog*, https://blogs.worldbank.org/education/successful-examples-scaling-teaching-and-learning-response-covid-19 (accessed on 16 September 2021). [3]

Colombia Aprende (n.d.), *Colombia Aprende website*, http://aprende.colombiaaprende.edu.co/cainicio (accessed on 22 September 2021). [60]

Dellagnelo, L. and F. Reimers (2022), "Brazil (São Paulo): São Paulo State Department of Education", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [61]

Dercon, S. (2020), *No-Regret Policies for the COVID-19 Crisis in Developing Countries*, CGD Note, Center for Global Development, Washington, DC, https://www.cgdev.org/publication/no-regret-policies-covid-19-crisis-developing-countries. [29]

Education Above All (n.d.), "Education resources for home schooling", web page, Education Above All, https://resources.educationaboveall.org (accessed on 22 September 2021). [58]

Education Global Practice (2020), *Is Remote Learning Working? Experts Perceptions and Global Experiences*, manuscript in preparation, World Bank, Washington, DC. [16]

Encinas-Martin, M. (2022), "Spain: Learn at home", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [65]

Florencia Ripani, M. and A. Zucchetti (2022), "Mexico: Learning at home", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [63]

Fullan, M. et al. (2020), *Education Reimagined: The Future of Learning*, New Pedagogies for Deep Learning and Microsoft Education, https://edudownloads.azureedge.net/msdownloads/Microsoft-EducationReimagined-Paper.pdf. [33]

Giannini, S., R. Jenkins and J. Saavedra (2021), *Mission: Recovering Education 2021*, World Bank, https://blogs.worldbank.org/education/mission-recovering-education-2021. [42]

Hawkins, R. et al. (2020), *Reimagining Human Connections: Technology and Innovation in Education at the World Bank*, World Bank Group, Washington, DC, https://www.worldbank.org/en/topic/edutech/publication/reimagining-human-connections-technology-and-innovation-in-education-at-world-bank. [1]

HundrED (2021), "Rising On Air is a 20-week program of free, ready-to-air, radio scripts and SMS content", hundrED, https://hundred.org/en/innovations/rising-on-air#9d5638b1 (accessed on 21 September 2021). [25]

IBE-UNESCO (n.d.), "Blended learning", web page, International Bureau of Education, Geneva, http://www.ibe.unesco.org/en/glossary-curriculum-terminology/b/blended-learning (accessed on 21 September 2021). [34]

Johns Hopkins University, World Bank and UNICEF (2021), *COVID-19 Global Education Recovery Tracker*, last updated as of 25 June 2021, John Hopkins University, Baltimore; World Bank, Washington, DC; United Nations Children's Fund, New York, NY, https://www.covideducationrecovery.global. [18]

Kaiser Schuster, P., F. Ringe and F. Reimers (2022), "Uganda: Popow's Radio Response to Covid-19", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [54]

Krönke, M. (2020), *Africa's Digital Divide and the Promise of E-learning*, africaportal, http://www.africaportal.org/publications/africas-digital-divide-and-promise-e-learning (accessed on 16 September 2021). [4]

Lamba, K. and F. Reimers (2022), "Sierra Leone and Liberia: Rising Academy Network on ai", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [24]

Liberman, J., V. Levin and D. Luna-Bazaldua (2020), *Are students still learning during COVID-19? Formative assessment can provide the answer*, World Bank, https://blogs.worldbank.org/education/are-students-still-learning-during-covid-19-formative-assessment-can-provide-answer. [31]

Liou, Y. and C. Petrie (2022), "Chinese Taipei: Contingency plans for hybrid models of learning", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [5]

Madero, C., E. Vargas and F. Reimers (2022), "Chile: Súmate Foundation – Second Chance Schools Network", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [55]

Maheshwari-Kanoria, J., L. Zahir and C. Petrie (2022), "India, Pakistan, Zambia, Kenya and Lebanon: Education Above All's Internet Free Education Resource Bank (IFERB)", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [57]

Mendez Acosta, A. and D. Evans (2 October 2020), "COVID-19 and girls' education: What we know so far and what we expect", *Center for Global Development Blog*, https://www.cgdev.org/blog/covid-19-and-girls-education-what-we-know-so-far-and-what-we-expect-happen (accessed on 21 September 2021). [30]

Ministerio de Educación de la República de Panamá (n.d.), *Plan de Acción de la Estrategia de MEDUCA para enfrentar el COVID-19: «La Estrella de la Educación no se Detiene»*, https://siteal.iiep.unesco.org/sites/default/files/sit_accion_files/11087.pdf. [20]

Modica, A. (2022), “United States and Ukraine: Virtual Edcamps”, in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [56]

Mosso, F. and F. Reimers (2022), “Peru: Teach for Peru”, in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [27]

Munoz-Najar, A. (2022), “Peru: I Learn at Home”, in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [37]

Munoz-Najar, A. and J. Osa Oviawe (2022), “Nigeria: Edo-BEST@Home”, in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [26]

Navarro-Sola, L. (2019), “Secondary school expansion through televised lessons: The labor market returns of the Mexican Telesecundaria”, *Job Market Paper*, https://laianaso.github.io/laianavarrosola.com/Navarro-Sola_JMP.pdf. [40]

Our World In Data (n.d.), “School closures during the COVID-19 pandemic, Mar 21, 2020”, https://ourworldindata.org/grapher/school-closures-covid?time=2020-03-21. [35]

Paulet Piedra, N. and F. Reimers (2022), “Brazil (Maranhão): Early Learning in Maranhão”, in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [64]

Saenz, M., A. Medina and B. Uribe Holguin (2022), “Colombia: To Turn on the Wave”, in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [53]

Sánchez Ciarrusta, I. (2022), “Colombia: Colombia Learns Mobile”, in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [59]

The Lancet (2021), “COVID-19: The intersection of education and health”, *The Lancet*, Vol. 397/10271, p. 253, http://dx.doi.org/10.1016/s0140-6736(21)00142-2. [44]

The World Bank (2020), *Household monitoring systems to track the impacts of the COVID-19 pandemic*, The World Bank, https://www.worldbank.org/en/topic/poverty/brief/high-frequency-monitoring-surveys. [28]

UNESCO (2021), “Education: From disruption to recovery”, United Nations Educational, Scientific and Cultural Organization, Paris, https://en.unesco.org/covid19/educationresponse (accessed on 21 September 2021). [7]

UNESCO (2020), *COVID-19 Response – Hybrid Learning: Hybrid Learning as a Key Element in Ensuring Continued Learning*, United Nations Educational, Scientific and Cultural Organization, Paris, https://en.unesco.org/sites/default/files/unesco-covid-19-response-toolkit-hybrid-learning.pdf. [32]

UNESCO Institute for Statistics (2020), *Response to COVID-19 School Closures, 1st Iteration*, based on UNESCO-UNICEF-World Bank Survey on National Education, https://infogram.com/final-unesco-education-covid-19-data-1hke60d1x7m525r. [22]

UNESCO, UNICEF and World Bank (2020), *Survey on National Education Responses to COVID-19 School Closures, Round 2*, United Nations Educational, Scientific and Cultural Organization, Paris; United Nations Children's Fund, New York, NY; The World Bank, Washington, DC, http://tcg.uis.unesco.org/survey-education-covid-school-closures. [15]

UNESCO, UNICEF and World Bank (2020), *What Have We Learnt? Overview of Findings from a Survey of Ministries of Education on National Responses to COVID-19*, United Nations Educational, Scientific and Cultural Organization, Paris; United Nations Children's Fund, New York, NY; UNICEF Office of Research – Innocenti, Florence; and World Bank, Washington, DC, http://tcg.uis.unesco.org/wp-content/uploads/sites/4/2020/10/National-Education-Responses-to-COVID-19-WEB-final_EN.pdf. [9]

UNICEF (2021), *COVID-19 and school closures, one year of education disruption*, UNICEF, New York, https://data.unicef.org/resources/one-year-of-covid-19-and-school-closures/. [48]

UNICEF (2020), "COVID-19: At least a third of the world's schoolchildren unable to access remote learning during school closures, new report says", press release, United Nations Children's Fund, New York, NY, http://www.unicef.org/press-releases/covid-19-least-third-worlds-schoolchildren-unable-access-remote-learning-during. [11]

United Nations Children's Fund and International Telecommunication Union (2020), *How many children and young people have internet access at home? Estimating digital connectivity during the COVID-19 pandemic*, UNICEF, New York, https://data.unicef.org/resources/children-and-young-people-internet-access-at-home-during-covid19/. [10]

USAID (2020), *Remote Developmental Evaluation: A Guide for Funders and Practitioners*, United States Agency for International Development, https://pdf.usaid.gov/pdf_docs/PA00X6FM.pdf. [47]

van Lieshout, K. (2022), "New Zealand: Reconnecting students through the arts", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [46]

Vidal, Q. (2022), "Turkey: I am special, I am in education", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [36]

World Bank (2021), "Two-thirds of poorer countries are cutting education budgets due to COVID-19", press release, World Bank, Washington, DC, https://www.worldbank.org/en/news/press-release/2021/02/22/two-thirds-of-poorer-countries-are-cutting-education-budgets-due-to-covid-19. [51]

World Bank (2021), *Urgent, Effective Action Required to Quell the Impact of COVID-19 on Education Worldwide*, https://www.worldbank.org/en/news/immersive-story/2021/01/22/urgent-effective-action-required-to-quell-the-impact-of-covid-19-on-education-worldwide. [8]

World Bank (2020), "Engage the ecosystem: Reimagining human connections technology and innovation in education at the World Bank", World Bank, Washington, DC, https://www.worldbank.org/en/topic/edutech/brief/engage-the-ecosystem-reimagining-human-connections-technology-and-innovation-in-education-at-the-world-bank?cid=edu_tt_education_en_ext_edutapproach&cid=edu_tt_education_en_ext (accessed on 21 September 2021). [23]

World Bank (2020), *Pivoting To: Leveraging Lessons from the COVID-19 Crisis for Learners with Disabilities*, World Bank, Washington, DC, http://pubdocs.worldbank.org/en/147471595907235497/IEI-Issues-Paper-Disability-Inclusive-Education-FINAL-ACCESSIBLE.pdf. [14]

World Bank Group (2021), "Online learning models: How to include youth in low bandwidth areas"*, Knowledge Brief Series*, Issue 13, World Bank Group, Washington, DC, https://www.s4ye.org/sites/default/files/2021-04/S4YE%20Brief%20Online%20Learning%20Models%20for%20Low%20Bandwidth%20Areas%20.pdf. [13]

World Bank Group (2020), "Gender dimensions of the COVID-19 pandemic", Policy Note, World Bank Group, Washington, DC, https://openknowledge.worldbank.org/bitstream/handle/10986/33622/Gender-Dimensions-of-the-COVID-19-Pandemic.pdf. [12]

World Bank Group (2020), *Learning Poverty in The Time Of Covid-19: A Crisis Within A Crisis*, World Bank Group, Washington, DC, https://documents1.worldbank.org/curated/en/163871606851736436/pdf/Learning-Poverty-in-the-Time-of-COVID-19-A-Crisis-Within-a-Crisis.pdf. [50]

Zacharia, S. (2022), "India (Telangana): Remote learning and village learning circles for disadvantaged students", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [41]

Zacharia, S. (2022), "Pakistan: TeleSchool and Taleem Ghar (Educational TV at Home)", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [62]

# 3 Learning from the frontlines of educational innovation during a pandemic

Fernando M. Reimers, Harvard Graduate School of Education

The education imperative created by COVID-19 is to prepare students to build back better, not just to prepare them for the past. This requires innovation and change, not just restoring the pre-existing status quo. Were there any lessons learned during the pandemic of value to understand how to innovate better, in order to build back better? This chapter examines some of the educational innovations generated in the early phase of the pandemic. Focusing on a subset of innovations documented in this report, the chapter focuses on two questions: 1) What was the focus of those innovations in the early phase of the pandemic?; 2) What conditions enabled the emergence of these innovations? It concludes with ten lessons from these case studies that could help during the recovery.

## Introduction

The COVID-19 pandemic shocked education systems worldwide, negatively impacting educational opportunity. Emerging evidence documenting the educational consequences of such shock suggests that it will be profound and augment educational inequality within and between nations (Reimers, 2021[1]). The direct impact of school closures, and the indirect impact of the economic recession and increase in poverty resulting from the pandemic, as well as the health impact of the pandemic on students, teachers and their families, all constrained opportunities to learn. The protracted nature of this crisis aggravates the consequences in terms of lost opportunities to learn, deskilling of students, disengagement for students and for faculty, and for some dropout. These educational impacts will, in turn, complicate other social and economic challenges such as economic and social inequality, social inclusion, social cohesion, trust in government, competitiveness and climate change.

While the negative consequences of the pandemic have received some scholarly attention, considerably less thought has been devoted to identifying potential silver linings created by the pandemic. It is perhaps understandable that, as a result of the obvious education losses for students as well as teachers, created by the pandemic this period came to be constructed, for many in the education community, as traumatic, one that we should try to recover from, and perhaps forget.

There are at least two risks that stem from an exclusive focus on the negative impacts of the pandemic. The first is that focusing solely on the educational trauma and loss experienced during the pandemic might distort, even romanticise, our memories of educational conditions prior to the pandemic. Amidst the sense of loss so many experienced when students and teachers did not meet in person or did so under conditions that greatly challenged their interactions, it might be easy to forget that before the COVID-19 crisis education systems were failing many children, who were not learning much, and certainly not much of value to help them participate civically or economically. Much of the conversation about “recovering learning loss” reflects such romanticised view of the past, before the pandemic. The few studies which assess learning loss compare what the current cohort of students know and can do in various grades, relative to what their peers in the same grades knew and could do in the immediate years before the pandemic. What such analysis conceals is how low such levels of learning were, particularly for poor and marginalised students, before the pandemic. Whether the “learning loss” was big or small is secondary to the fact that no one was learning very much even before the loss.

The second risk of focusing exclusively on the “loss” is that it leads inevitably to try to “recover” that which was lost, which focuses our energies on the standards of the past, ignoring the fact that, if it is to be relevant, education must prepare students for the future, a future which has been significantly altered by the pandemic itself. The pandemic created new challenges, certainly for the immediate future but possibly beyond, in effect rewriting the future, and this should cause us to focus on how to help students develop the skills to address those future challenges, rather than focus on helping them gain the skills which might have been relevant even in the almost two years since the pandemic hit.

Illustrative of these rapid changes to scenarios about the future is a recent report of the National Intelligence Council of the United States, which underscores social fragmentation as the most salient challenge for American democracy, arguing that “the COVID-19 factor” accelerated pre-existing trends of social fragmentation, for example diminishing trust in government and interpersonal trust, particularly across diverse identity groups (National Intelligence Council, 2021[2]). Given these risks, educational institutions should be increasing their efforts to develop civic skills and dispositions, reinforcing trust in government and interpersonal trust, and supporting students in gaining the skills to collaborate productively across identity and other divides. Merely working to recover “learning loss”, particularly in domains which may have been deemed adequate or sufficient to prepare students to meet the needs of the past, is no longer enough. A number of accelerating trends, predating the pandemic, motivated already the urgency for new education goals. For instance, the OECD Future of Education and Skills Project had already advanced an interest in broadening the curricular goals to prepare students to participate civically and

economically. This interest resulted in the expansion of the domains of student knowledge and skills assessed in PISA, beyond language, mathematics and scientific literacy, to include global competency and socio-emotional skills. Similarly, UNESCO Commission on the Futures of Education published a report in 2021 articulating an ambitious vision of reimagined education to help humanity meet the challenges of the future.

Therefore, the education imperative created by COVID-19 is, to put it bluntly, to prepare students to build back better, not just to prepare them for the past, and this requires innovation and change, not just restoring the pre-existing status quo. This urgency to innovate is the reason to ask whether there were any lessons learned during the pandemic of value to understand how to innovate better, in order to build back better.

In this chapter, I examine some of the educational innovations which were generated in the early phase of the pandemic, rapidly designed efforts intended to sustain educational opportunity at a time of much confusion for the education community. In particular, I focus on a subset of innovations which were documented as part of a collaborative effort among the Global Education Innovation Initiative at Harvard University, the Directorate of Education and Skills at the OECD, the Education Group at the World Bank, and the organisation HundrED. In looking at these case studies of innovation, which are the focus of this publication, I ask two questions:

1. What was the focus of those innovations in the early phase of the pandemic?
2. What conditions enabled the emergence of these innovations?

The premise of this analysis is that the pandemic represented a significant disruption, of unprecedented scale, which tested the organisational resiliency of education and upended many of the bureaucratic norms that govern education systems. Such disruption of education systems created a rare event in which the normal boundaries, constraints and roles that regulate the behaviour of individuals in education organisations were suspended, in this way freeing the practices and interactions among educational actors and institutions allowing new forms of collaboration leading to novel ways to teach and learn. Even as the pandemic created other, new, constraints and challenges – resulting for example from the social distancing norms instituted by public health authorities to contain the velocity of the spread of the virus, or from inadequate resources or infrastructure to rapidly shift to digital platforms -- it was precisely the existence of those new challenges and constraints, together with the temporary freedoms, which created the occasion for educational innovation.

## The case studies of educational innovation

In March 2020, as the World Health Organization declared COVID-19 a Global Pandemic, I reached out to colleagues working in several international education organisations to explore ways in which we might contribute to mitigating the potential educational fallout of the crisis. Andreas Schleicher, OECD Director for Education and Skills, responded right away to that outreach and within days we had begun a collaboration to generate evidence that would help education leaders navigate the crisis.

Our first effort was a cross-national survey examining the anticipated education effects of the pandemic, the strategies in place to mitigate the crisis, and the areas where education authorities felt they needed more support. The main finding of that survey was that few education authorities had, at that moment, at the end of March of 2020, a coherent education strategy for how to educate during the pandemic. Our report presented the results of that study, along with a series of recommendations for the development of an education strategy, which benefited from input from experienced senior education leaders in various countries, a 24-item check list to guide the development of a strategy of educational continuity and a process of change management that would assist education leaders in navigating the crisis. The checklist is presented in Box 2.1.

### Box 3.1. Check list to guide the development of a strategy of educational continuity during the first waves of school closure

1. Establish a task force or steering committee that will have responsibility to develop and implement the education response to the COVID-19 pandemic. To the extent possible ensure those in the task force represent different constituents in the education system or school network and bring important and diverse perspectives to inform their work, for example various departments curriculum, teacher education, information technology, teacher representatives, parent representatives, students, representatives of industry when relevant.
2. Develop a schedule and means of frequent and regular communication among task force members, during the period when social distancing will be in effect.
3. Define the principles which will guide the strategy. For example: protecting the health of students and staff, ensuring academic learning and providing emotional support to students and faculty. These principles will provide focus for the initiatives to be undertaken and will help prioritise time and other limited resources.
4. Establish mechanisms of coordination with public health authorities so that education actions are in synch and help advance public health goals and strategies, for example, educating students, parents, teachers and staff on the necessity for social distancing.
5. Reprioritise curriculum goals given the reality that the mechanisms of delivery are disruptive. Define what should be learned during the period of social distancing.
6. Identify the feasibility of pursing options to recover learning time once the social distancing period is over, for example, an intensive review period during the break prior to the start of the new academic year.
7. Identify means of education delivery. When feasible, those should include online learning, as it provides the greatest versatility and opportunity for interaction. If not all students have devices and connectivity, look for ways to provide them to those students. Explore partnerships with the private sector and the community in securing the resources to provide those devices and connectivity.
8. Clearly define roles and expectations for teachers to effectively steer and support students' learning in the new situation, through direct instruction where possible or guidance for self-directed learning.
9. Create a website to communicate with teachers, students and parents about curriculum goals, strategies and suggested activities and additional resources.
10. If an online education strategy is not feasible, develop alternative means of delivery, they could include TV programmes, if a partnership with television stations is feasible, podcasts, radio broadcasts, and learning packets either in digital form or on paper. Explore partnerships with community organisations and the private sector to deliver those.
11. Ensure adequate support for the most vulnerable students and families during the implementation of the alternative education plan.
12. Enhance the communication and collaboration among students to foster mutual learning and well-being.
13. Create a mechanism of just in time professional development for teachers and for parents to be able to support learners in the new modality of instruction. Create modalities that foster teacher collaboration and professional communities and that increase teacher autonomy.
14. Define appropriate mechanisms of student assessment during the exigency.

15. Define appropriate mechanisms for promotion and graduation.
16. As needed, revise regulatory framework in ways that make online education and other modalities feasible, and in ways that support teacher autonomy and collaboration. This includes providing school day credit for days taught in alternative education plans.
17. Each school should develop a plan for continuity of operations. As a way to support them, education authorities can provide curated examples of plans in other schools.
18. When the school provides meals to students, develop alternative means of distribution of food to students and their families. 19. When the school provides other social services, such as mental health supports, develop alternative forms of provision.
19. Schools should develop a system of communication with each student, and a form of checking-in daily with each student. Perhaps in the form of texts from teachers if parents have access to mobile phones.
20. Schools should develop mechanisms of daily check-in with teachers and school staff.
21. Schools should provide guidance to students and families about the safe use of screen time and online tools to preserve student well-being and mental health as well as provide protection from online threats to minors.
22. Identify other school networks or systems and create forms of regular communications with them to share information about your needs and approaches to solve them, and to learn from them as a way to foster rapid improvement in delivering education in the new modalities.
23. Ensure that school leaders get the financial, logistical and moral support they need to succeed.
24. Develop a communications plan. Map key constituencies, and key messages to support the execution of the education strategy during the exigency, and ensure those are effectively communicated through various channels.

Source: (Reimers and Schleicher, 2020, pp. 5-6[3])

The report generated considerable interest. It was discussed at virtual global convenings, as well as at fora involving a variety of education stakeholders from the same country. In a context of great need and absence of a playbook on how to face the crisis, the report served as a provocation for essential conversations between governments and teachers, and other members of civil society, in making sense of the crisis and discerning how to proceed. It was a way to generate collective intelligence in trying to discern how to educate students amidst great educational and social disruption.

Participating in these conversations impressed upon us the urgency to advance knowledge that would guide more effective actions to sustain education during the emergency. It was not enough to know what challenges governments anticipated, what needs they faced, or to provide guidance on how to develop a strategy, or to have conversations in real time in large virtual convenings, it was necessary to offer specific guidance on what kind of programmes and interventions could sustain educational opportunity during the crisis.

To meet that need, it was important to extend the circle of collaborators and we invited other colleagues at the OECD, the World Bank and the organisation HundrED. Together, we set out to document, rapidly, emerging education responses as a way to facilitate rapid exchange of that knowledge, and in this way support educational innovation globally which would contribute to sustaining educational opportunity.

Our approach was inspired in some of the basic tenets of appreciative inquiry, an approach to action research and organisational change that consists of identifying and leveraging areas of strengths in organisations, as a way to support further improvement (Cooperrider, Whitney and Stavros, 2004[4]). Our premise was that in every society, amidst the crisis created by the pandemic, there would be individuals

and organisations, in government and in civil society, that against the odds were creating ways to sustain educational opportunity. These efforts represented “goodness” in a moment of crisis, and we thought that by finding and spotlighting such goodness, by focusing on those positive deviants, this would animate further innovation and improvement in those jurisdictions, and inspire similar efforts in others.

We further anchored our approach on two premises which had guided previous work of the Global Education Innovation Initiative at Harvard University. The first, that when practitioners solve problems they gain knowledge that can be valuable to solve future problems if it can be made visible and communicated to others. The second, that there are insights and nuances about how programmes and policies are implemented which are best understood by those who participated in their design and implementation. For this reason, we decided to identify innovations and work alongside with those who had led them in documenting these innovations. These would be case studies of innovations relying heavily on the perspectives and insights of the participants.

It was an audacious proposition, for sure, at a time when we were all in lock down and relying on digital technologies to communicate, to design and execute a global study of innovation when it was obviously too soon to know what was working, for whom and with what results, and to do this remotely. Our goal was simply to try to offer hope and inspiration to those who, like us, were determined to prevent the complete interruption of education, in a context in which we were learning, from our virtual conversations with colleagues in many jurisdictions discussing the results of our first survey, that many education leaders were on the edge of giving up, and governments were ready to focus all their energies on the public health emergency, declaring education something that would have to wait until the public health crisis could be controlled. To be sure, our effort was guided by the ethical imperative that education should continue against all odds, and to support this goal we sought to identify and disseminate examples of how this was being done, however imperfectly, as schools were shut down.

At that time, in April of 2020, we did not know how long it would take to come up with vaccines that could help address the crisis, much less how those could be delivered to the majority of the world population. Adding to the confusion and the crisis, some political leaders denied the gravity of the public health crisis and ignored the advice of public health authorities, contributing to a wide range of responses from the public, some of which, such as not using masks and refusing to be vaccinated, worsened the crisis.

It was in that context that we set out to identify and document the case studies of educational innovation which are presented in this book. We wanted to know who had found ways to sustain some form of education while schools were closed, and how they were doing it. We used a process of convenience to identify the cases, essentially drawing on our collective networks to identify bright spots. We relied on the same networks to engage collaborators who could work with us documenting those efforts, attempting to include as authors people with first-hand knowledge of the innovations we were documenting and always basing our studies on interviews with those who designed them. We developed a common protocol to write the cases, and began in earnest to write these cases and to disseminate them in a website created specifically for that purpose. While we did not use a formal process of peer review, the drafts of the cases went through the OECD editorial and clearance process, with an editor raising valuable questions, criticism and suggestions, challenging the teams writing the cases – often a combination of an ”insider” to the organisation documented alongside one of the different organisations’ representatives. The objective was to write an account supported by the best available evidence. The focus of the cases was to describe the initiatives, to identify key points for successful adaptation to different contexts and lessons learned.

We developed this mechanism of documentation of educational innovations in the spirit of rapid prototyping, adjusting and improving as we went along. We started with a basic framework of the information that should be contained in each case study, and refined it as we began to work on the first case studies. Each case would identify the challenge the innovation was addressing, would describe the innovation, with attention to the operational detail of how to implement it, would discuss implementation challenges, describe monitoring and evaluation, and provide existing evidence on use of the innovation

and impact, if available, to then discuss adaptability to new contexts, and highlight key points to support transfer and adaptation of this innovation to varied contexts.

Over the following six months, we published 45 case studies, covering a range of education responses to the crisis in 34 countries, efforts from municipal, state and national governments, from school networks, from private and public institutions. The only requirement for the cases we included in the project was that the efforts needed to have demonstrated the ability to reach children at some scale (a city, a state, a nation), and that they were providing more opportunities to learn than the alternative, which for most children at that time was to stay home and wait out the pandemic. We also attempted to include a diversity of countries. The countries we covered varied in terms of resource level, infrastructure, size, and other characteristics. They included: Belgium, Brazil, Chile, Colombia, Egypt, Finland, France, India, Japan, Jordan, Kenya, Latvia, Lebanon, Liberia, Mexico, the Netherlands, New Zealand, Nigeria, Pakistan, Peru, Russia, Samoa, Sierra Leone, Spain, Taipei, Turkey, Uganda, Ukraine, the United Kingdom, the United States of America, Uruguay, Vietnam and Zambia. As of December of 2021, the case studies had been accessed, collectively, by 35 000 unique viewers.

As we wrote these case studies, it became apparent that, in the midst of the very challenging conditions created by the pandemic, considerable innovation had been unleashed to find novel ways to sustain student engagement with learning while in person instruction was interrupted for all or most children. The case studies included initiatives such as using radio, printed materials, educational television, and a variety of digital platforms, with and without Internet, to sustain educational opportunity. They also included initiatives to develop the capacities of teachers to teach remotely, and to support parents as they supported the education of children at home. Some of them focused on novel ways to assess student knowledge remotely. This realisation that innovation was taking place was also the conclusion of a second cross-national survey which we conducted in May of 2020 among education authorities. Our report based on that survey concluded that the pandemic had generated an innovation dividend and that perhaps such innovation could help education systems address some pre-existing deficiencies and challenges (Reimers and Schleicher, 2020[5]).

As the months continued, countries began to diverge in their response. From the initial closures which had affected the majority of schools and schoolchildren, some countries began various efforts to reopen schools, while in other schools remained closed.

Sixteen months after we began to write these case studies, we thought it would be valuable to look back and try to take stock of what these early innovative responses to the onset of the pandemic say about how we faced the crisis.

## What competencies were the focus of those innovations in the early phase of the pandemic?

The 45 innovations studied focused on a range of educational outcomes, from maintaining students' engagement with learning – in activities of review of previously covered material – to covering new content in academic subjects, to supporting the well-being and socio-emotional development of students. This heterogeneity in early-stage innovations reflects the absence of consistent standards for education continuity strategies, and the predictable variability in attempted approaches and intended results.

In spite of this variability, most of these cases address, at least to some extent, competencies beyond cognition, recognising perhaps the salience of socio-emotional well-being during the crisis, and the foundational nature of attending to such well-being before any other form of learning could be productive. For example, Fundacion Sumate in Chile, a network of second chance schools for school dropouts, prioritised the emotional well-being of students, as the foundation to meet their needs during the pandemic, and to maintain engagement with learning.

In Colombia, the Alianza Educativa rapidly developed printed materials to support distance education during the school closures. Their initial focus was on the emotional well-being of the students, to then add an academic component to the materials.

In India, Reality Gives, a community based organisation which supports low income youth in developing English language skills, pivoted to delivering the second language curriculum online, adding a component to support the emotional well-being of students.

The Rising Academy Network on Air in Liberia and Sierra Leone, focused on delivering academic lessons via radio, embedded with health messages related to the pandemic, and to the risks students would be exposed to out of school.

## What conditions enabled the emergence of these innovations?

These case studies illustrate that innovation was made possible by the entrepreneurial use of existing resources, which created new value as a result of repurposing existing assets, or combining existing resources, for instance existing digital assets, or creating novel collaborations among diverse institutions. Many of these innovations were created as rapid prototypes, to be improved as a result of feedback and experience.

For instance, Ensena por Colombia created a rapid prototype of radio education, drawing on existing education materials from various organisations with which Ensena por Colombia had pre-existing partnerships; based on those resources the team of Ensena por Colombia created 10-minute episodes. The same organisation was able to produce at fast pace one new episode per day by engaging students, usually an under-utilised resource, along with teachers, in the development of new programmes. Ensena por Colombia learned from the experience of other organisations in the Teach for All network, which had used radio education to deliver content, adding the use of a WhatsApp feedback loop in which teachers discussed the radio lessons with their students, in effect building a flipped classroom with low cost technologies as the platform. In India, the Government of Madhya Pradesh created a rich multimedia platform to support remote learning, which repurposed and remixed existing digital assets. For instance, to create a radio programme, they relied on pre-existing radio school content developed by the state as well as on assets curated by UNICEF. The platform included also a library of high-quality digital resources from existing providers such as Khan Academy, Pratham Open School, the Teacher App and others.

Among the conditions which enabled the innovations examined in these cases were pre-existing networks across schools, and in some cases across schools in different countries. For instance, the network Teach for All, a federation of national organisations aligned in goals with pre-existing experience and structures to support the exchange of information, learning across the various national organisations in the federation, and collaboration, catalysed innovation by rapidly sharing emerging innovative practices designed to teach during the pandemic. A newsletter which reaches all teachers in that network was the vehicle through which teachers in Chile learned that their peers in Nigeria had used podcasts to deliver content remotely, inspiring them to do the same. The rapid creation of a radio education curriculum by the Ensena for Chile organisation, spread throughout the network inspiring similar programmes in Colombia and Peru. Teach for Colombia, for example, used existing social networks of educators to help spread the programme within the network and beyond.

The cases illustrate also the power of collaboration, as the innovations involved, in many cases, the collaboration among teachers, and other stakeholders: members of the community, civil society organisations, and the private sector. To some extent the case studies illustrate the possibility of true collective leadership, in which various stakeholders come together to collaborate for the purpose of improving the performance of the education system. The challenges of achieving effective leadership are well known, one of the reasons the “system” aspect of the education system is broken, and it is somewhat

counterintuitive that the context of the pandemic, in which each of the stakeholders who came together in service of the greater good was in turn more challenged, would create the occasion for out of the ordinary collaboration.

The State of Sao Paulo in Brazil, for instance, developed in a matter of weeks a multimedia centre, which delivered education content via TV, radio, an app and printed materials, to sustain educational continuity during the period of school closures as a result of establishing partnerships with private providers and organisations of civil society. Of particular interest is the fact that this invitation to share leadership and responsibility extended by the State Ministry of Education to some of the most influential business leaders in the state, was followed by donations of services from telecommunication and education companies, which allowed the creation of the centre, amounting to 0.6% of the annual education budget of the State. A number of different organisations collaborated in providing access to various elements of the education platform to students, for example, police officers visited the homes of the most marginalised students to deliver printed materials, and donated cloud-computing time to host the technology platform.

For example, in the State of Maranhao, Brazil, a public-private partnership enabled the development of content to support remote education of children from 0 to 6 during the period when centres were closed. This partnership focused on supporting caregivers, rather than students directly as did most of the other components of the remote education strategy of the state. The focus of the programming was to use structured opportunities that enabled caregivers to transform everyday interactions with their children into opportunities for learning and development.

In Chile, the delayed response from the national government in the early phase of the pandemic caused other levels of government, business and civil society organisations to step up, as illustrated by the partnership between Ensena Chile, a network of mayors of cities and of local radio stations, in developing a distributing radio education.

Also in Chile, the work of the Fundacion Sumate maintaining socio-emotional support to vulnerable youth during the pandemic built on support they had received from UNESCO in developing a curriculum to support the development of socio-emotional skills.

In India, the State of Madhya Pradesh developed a multimedia strategy of remote learning which involved the curation and repurposing of a variety of content, and collaboration among a range of national and international organisations, such as the Central Square Foundation, the Boston Consulting Group, Pratham, Khan Academy and others. In a relatively short period, this collaborative had created a rich repository of lessons and learning materials, aligned to competencies in the curriculum.

Similarly, in Vietnam, the creation of a TV based education delivery strategy relied on collaboration across a variety of stakeholders, including the national and provincial departments of education, schools and teachers, TV stations, private education companies who donated lessons and learning materials, the alignment among these many stakeholders was facilitated by the existence of national education guidelines and curriculum.

Many of the cases illustrate the power of digital platforms to support teacher collaboration among teachers and administrators, within and across schools, and of education resource digital networks, in sharing practices they had found effective in teaching remotely, and in problem solving together. While there is nothing novel in the creation of professional learning communities or in shared repositories of education resources, with the forced immersion in digital instruction the pandemic also led teachers to use digital platforms to support such professional learning communities. Out of necessity, many more teachers than might have otherwise been the case learned to communicate with colleagues on line, and relied on these online forums for the purposes of professional collaboration. For example, in Liberia and Sierra Leone Rising Academies created a radio education curriculum and lesson scripts which they shared with other organisations, using collaborative platforms such as Slack to facilitate communication among those organisations using the curriculum to exchange lessons learned and ideas for improvements. In Colombia,

the Alianza Educativa used technology to support the collaboration of 500 teachers, who were able to rapidly develop printed instructional resources for students without access to the Internet.

## Ten lessons learned from these case studies of innovations in educational continuity during the pandemic

The first most obvious lesson we drew from this collaborative work to rapidly identify and document strategies for education continuity during the early phase of the pandemic was that modern communication technologies allow networks of individuals and organisations to very rapidly identify, document and disseminate emerging educational innovations, and that this can support education decision making in a context of high uncertainty. In effect we built a global education radar that helped us identify positive deviants in defying the odds the pandemic was creating in real time. This has potential significant implications for educational policy and planning.

The fact that teachers and others in the frontline of education are capable of generating innovative solutions to address the challenges they face is certainly not novel, though it is perhaps significant to realise that these local actors can also do this in the considerably more challenging context created by the pandemic, when their own health was at risk. Ordinarily, many of these local innovations, however, take a long time to spread and diffuse; some never do. At the same time, education policies are often handicapped by insufficient grounding on the conditions on the frontlines, a problem aggravated when those conditions are shifting. The ability to systematically capture and disseminate information about educational innovations in a matter of weeks, through the deployment of digital technologies and the articulation of networks of educators, has important consequences for the future of education decision making. It brings new meaning to the idea of the world as a "global education laboratory" from which we can rapidly learn, generating collective intelligence which can be rapidly shared to solve education challenges at a global scale.

The generation and dissemination of these case studies provided a proof of concept of a mechanism for rapid dissemination of educational innovation, relying on a rapidly organised partnership among four institutions, a rapid prototype in international cooperation, on the volunteer efforts of many collaborators in the countries who worked on writing (or supporting the writing of) the case studies, and on the technology which made communication and coordination feasible. For the most part, those we invited to collaborate as part of this effort accepted, even as they were facing the challenge of leading organisations and programmes with all the uncertainty which the situation presented. It is significant that education leaders facing the daunting challenge of continuing to educate during the disruption caused by a global pandemic, would see enough value in knowledge about the way in which others around the world were sustaining educational opportunity, to commit time and effort to share their own efforts in order to build a global commons of knowledge to face a crisis for which no playbook existed. In effect, technology allowed us to create a digital strategy for rapid documentation and research, and this in turn invited partners to not just be recipients of the knowledge such strategy was generating, but to be contributors and participants.

It should be noted that the stories of education continuity we documented with the case studies referred, principally, to initial responses to the crisis, those taking place during the months of April through June of 2020. As such, these innovations represent rapidly developed approaches to sustaining educational continuity. It is likely that, as the pandemic continued, and education systems had time to assimilate what they had learned from them, that some of these innovations might have evolved in various ways, or become perfunctory as schools reopened. It was not part of this effort to follow up that evolution, or to capture innovations which were generated at later stages of the pandemic. Emerging studies of innovations that took place over a longer period during the pandemic, including beyond the initial stages of the crisis, illustrate that some of them anticipated changes in educational practice aligned with UNESCO's recent report on the Futures of Education (Reimers and Opertti, 2021[6]).

A second obvious lesson illustrated by these studies is the importance that societies the world over afforded to education. It is remarkable that in the midst of a global pandemic governments and civil society organisations would go to such lengths to look for ways to continue to educate students when they deemed teaching in school unsafe. This speaks to the normalisation of the idea that education matters. An alternative response, indeed one a number of countries opted for, would have been to put education on the back burner while governments and society addressed the most pressing aspects of the public health crisis and wait out the most acute initial stage of the crisis. The fact that societies afforded education sufficient attention to create alternative strategies to educate should not be underestimated, for it signals how much education is valued as a societal activity.

A third lesson these innovations underscore is the importance of educating the whole child. No one learns much when they are in fear, when they experience violence or when they are hungry. As a number of the case studies focused on organisations serving marginalised populations, the innovations they generated sought to provide such holistic support to students. In the United States, for instance, the Phalen Leadership Academies, a network of charter schools serving low income, ethnic minority children, sought to create a strategy to support students which included food and nutrition, emotional support, and academic learning. Similarly, in Brazil, Sao Paulo's strategy for education continuity, focused on the alternative delivery of school meals to children, in addition to the academic engagement and support.

A fourth lesson emerging with the benefit of hindsight, particularly as evidence begins to surface on "learning loss" during the pandemic, is that none of these innovations, or the collective result of all innovations which may have taken place during the crisis, of which these 45 case studies are just a small sample, were sufficient to compensate for the lost opportunities to learn caused by school closures. In Madhya Pradesh, India, for example, a massive effort at building a multimedia platform for remote education reached only 7% to 10% of the learners in the state. A key issue in this consideration is which counterfactual one is using to assess the contribution of these innovations. Relative to keeping schools open, operating in the conditions in which they normally operate, these innovations and all efforts expended during the pandemic appear to have netted less opportunity to learn than students would have had, had they been able to attend school instead. A key consideration here is how necessary were the school closures, in particular the longer closures. There is wide variation across countries in the duration of the closures, suggesting that to a great extent such duration was itself a policy choice. It is also the case that the public health crisis differed across countries, as a function of a range of contextual factors, including poverty, health infrastructure and public health choices of governments and individuals. It is likely that some period of school interruption was necessitated by the pandemic, and relative to that period it appears that these innovations might have been better, at least for the students who were able to partake in the platforms which were used, than the alternative of not engaging with school curriculum at all.

A fifth lesson emerging from these studies was the great many ways in which technology could be deployed to provide opportunities to learn and to collaborate, and also the significant gaps in knowledge and skill among teachers and students to use technology effectively. While in many ways the pandemic represented the greatest global experiment in immersion in online learning, and teachers should be commended for their willingness to learn and adapt in short order, this immersion was, for many, sink or swim, making evident how little preparation teachers had previously received for the use of digital instruction. Many teachers and administrators discovered – on the job and by force of circumstances – how much could be accomplished, for instance creating professional communities to collaborate in solving emerging challenges, using online platforms. It is remarkable how quickly prototypes of digital delivery platforms were developed, for example by the Department of Education of the City of Bogota, or by the State Department of Education of Sao Paulo, in just a matter of weeks. This approach of rapid prototyping and continuous improvement of these platforms, made possible by an entrepreneurial approach of leaders in government and civil society and by the low cost of technology is a stark contrast to the slower pace at which most education bureaucracies develop and implement programmes. In part, this faster pace was made possible by involvement of high-level authorities who worked to find exceptions to the regulations,

in procurement for instance, that shape the pace of implementation of government initiatives. In Liberia and Sierra Leone, Rising Academies, a network of low fee private schools, developed a twenty-week radio version of their structured curriculum which was shared and distributed widely by Rising and partner organisations throughout the world. In part, also, the collaboration among various stakeholders in the creation of responses, helped overcome some of the barriers that slow down programme design and implementation.

A sixth lesson illustrated by these studies concerns the power of collaboration among teachers to rapidly develop instructional materials. In surprisingly little time, teams of teachers divided the task of producing digital resources and, collectively, produced entire curricula that would have taken much longer for individual teachers to develop. In Chile, for instance, a team of 20 specialists from Ensena Chile was able to develop a rich curriculum of resources for radio education in a matter of weeks. In Vietnam, the Ministry of Education was able to develop a TV-based strategy of education continuity crowdsourcing the development of lessons to local Department of Education aligned to a simplified curriculum framework. Schools within the district each took responsibility for producing one high-quality lesson, this process engaged thousands of teachers throughout Vietnam in creating and reviewing lesson plans.

A seventh lesson illustrated by the case studies concerns the power of global collaboration. As teachers immersed themselves in an online environment to discuss with others the challenges they were experiencing, and to collaborate with colleagues in finding solutions to those, the constraint of place was removed, bringing teachers into contact with colleagues in a variety of schools, including in different countries. For example, the idea that a group of teachers could collaborate and develop radio education lessons, first developed by Teach for Nigeria, travelled very rapidly through the Teach for All network and inspired similar efforts in Chile, those two efforts subsequently inspired similar efforts in Colombia and Peru.

An eighth lesson emerging from the cases is the value of a coalition or organisations focused on the educational needs of marginalised children so that they are addressed. A number of the case studies resulting from this effort were of this sort, the result of organisations whose focus was on educating the poorest and the most marginalised. This focus, and their experience educating those students, drove efforts to maintain educational opportunities for them. For instance, in Chile, Teach for Chile, an organisation that works in high poverty schools, quickly realised that Internet-based options would not reach many of their children in the schools where they worked. They developed a rapid prototype of radio education lessons, which were more accessible for this population of students, and then scaled its distribution building a partnership with mayors and radio stations. Similarly, also in Chile, the Fundacion Sumate, a network of second chance schools that works with vulnerable youth who have dropped out of school, understood immediately how the social distancing requirements would affect the youth they served, creating as a result a programme of socio-emotional well-being delivered via WhatsApp, which they knew would be an accessible platform to reach their students.

A ninth lesson illustrated by the cases was the need to reprioritise the curriculum, focus on competencies, and the value of interdisciplinary learning. The constraints in the capacity of the education delivery caused educators who sought to create alternative education platforms to be intentional in thinking through the competencies they hoped students would gain. It also required reprioritising and simplifying the curriculum, giving greater attention to socio-emotional skills, and rediscovering the power of interdisciplinary learning. For example, the Fundacion Sumate in Chile, working with former school dropouts, realised it would need to create interdisciplinary units as a way to support the education of students in the alternative platforms for education continuity which they build based on WhatsApp. In Colombia, the Alianza Educativa reduced the time devoted to academic subjects in the distance learning curriculum they developed, in order to increase the time to support the socio-emotional development of students.

A tenth lesson the cases illustrate is the role of information and monitoring to allow continuous improvement of the rapid prototypes developed. The novelty of the situation created by the pandemic, of trying to teach

without schools, caused those who created alternative forms of education continuity to seek continuous feedback on what was working well and what needed to improve. This, along with the rapid prototyping approach followed by most innovations, allowed a rapid response to sustain education during the emergency. In Colombia, for example, the Alianza Educativa created a centralised decision making unit, involving the management team of the 11 schools in the network, who met daily to exchange information on what was working well, and emerging needs. This exchange of information, supported by systematic surveys to students, families and teachers, produced unprecedented coordination and evidence-based decision making. In Madhya Pradesh, the State government relied on continuous communication to encourage implementation of the remote strategy and to learn, for instance conducting frequent large-scale videoconferences with district education officers, webinars for teachers, mass media. As part of these multiple feedback loops which were part of the strategy, teachers had to call five students daily, to check on their engagement and well-being. The State also conducted frequent phone surveys, via call centres, to obtain feedback from teachers, parents and administrators on the implementation of the strategy and its effectiveness. In Liberia and Sierra Leone, Rising Academies built feedback loops surveying students, parents and teachers on the effectiveness of the radio education programme they developed; they also provided a hotline number and an SMS number after each lesson, inviting feedback.

To conclude, the COVID-19 pandemic caused a massive shock for schools and education systems. Much of what resulted was negative, but there were positive aspects as well. There is much we can learn about human ingenuity, society's commitment to education, teacher professionalism, the power of collaboration, and the role of educational innovation in overcoming great odds if we take the time to look for what was good during the crisis. Perhaps, as we look there, we will find the clues of how to rebuild more resilient and inclusive education systems that prepare students to invent a better future.

## References


Cooperrider, D., D. Whitney and J. Stavros (2004), *Appreciative Inquiry Handbook for Leaders of Change*, Brunswick, OH: Crown Custom Publishing, Inc. [4]

National Intelligence Council (2021), *Global Trends 2040. A More Contested World*, National Intelligence Council, Washington, DC., https://www.dni.gov/files/ODNI/documents/assessments/GlobalTrends_2040.pdf (accessed on 30 September 2021). [2]

Reimers, F. (ed.) (2021), *Primary and Secondary Education during COVID-19.*, Cham, Switzerland: Springer. [1]

Reimers, F. and R. Opertti (eds.) (2021), *Learning to Build Back Better Futures for Education. Lessons from educational innovations during the COVID-19 Pandemic*, UNESCO. International Bureau of Education. Geneva: International Bureau of Education. [6]

Reimers, F. and A. Schleicher (2020), *A framework to guide an education response to the COVID-19 Pandemic of 2020.*, OECD, https://globaled.gse.harvard.edu/files/geii/files/framework_guide_v2.pdf (accessed on 30 September 2021). [3]

Reimers, F. and A. Schleicher (2020), *Schooling disrupted, schooling rethought: How the COVID-19 Pandemic is changing education.*, OECD, https://globaled.gse.harvard.edu/files/geii/files/education_continuity_v3.pdf (accessed on 30 September 2021). [5]

# 4 Every child to flourish in a post-COVID-19 world: Eight lessons and visions for the future

Christopher Petrie, HundrED[7]

This chapter highlights some of the lessons from the pandemic to inform a vision for the transformation of education and learning. It focuses mainly on innovations from non-governmental organisations and draws on the education continuity as well as HundrED's 2021 Global Collection documenting about 100 innovative practices and solutions. After a review and analysis of some of the trends, the chapter highlights eight lessons from the health crisis and proposes eight vision statements for the future of education.

## Introduction

What is the purpose of education? With all that has changed in our daily lives since COVID-19 began, many have been re-evaluating this simple but challenging question. One idealist answer could be, "to help every child flourish, no matter what happens in life" (HundrED, n.d.[1]). Flourishing can mean many things, for example, empowering students to discover their strengths and interests and then supporting them to orient these towards a contribution to the world (Zhao, 2020[2]). This answer, and most others, have pointed

[7] Christopher Petrie, Head of Global Research at HundrED

to the idea that the value of education is so much more than getting good grades or simply a place to keep children supervised when adults go to work (Sahlberg and Doyle, 2019[3]). Young people today are our future, not only as the future creators of a modern workforce quite different from today, but as active shapers of the society of tomorrow. They will participate in the way communities care and help those less fortunate, resolve local and global conflicts, and demonstrate compassion and understanding towards people different from them. The profound shock to educational systems as a result of the pandemic has re-focused attention on the role of education and how learning in schools today is equipping young people to become responsible adults. Two important questions need to be asked:

1. What can we learn from efforts to ensure young people could continue learning during the COVID-19 pandemic?
2. How can we use these lessons to inform a vision for the transformation of education and learning for a more equitable future?

This chapter proposes eight lessons and eight vision statements for education systems globally from the considerable efforts to keep children learning during COVID-19. These lessons draw from the 45 education continuity stories collected in this report, which describe how a range of stakeholders in different contexts pulled together in extraordinary circumstances to develop innovative solutions and enable learning during lockdown measures and school closures. This chapter presents a critical analysis of the changes made to achieve education continuity and also draws lessons from leading educational innovative practices and solutions that feature in HundrED's *2021 Global Collection* (Petrie and Aladin, 2020[4]) which was also a source for some of the education continuity stories contained in this volume.

## HundrED's 2021 global collection

HundrED.org is a Finland-based non-governmental organisation aiming to improve education through researching, identifying, and sharing impactful innovations that are created in all corners of the world. A plethora of new practices and solutions are introduced each year in education, but it is challenging to identify which will lead in their impact and be transferable to multiple contexts. When COVID-19 hit, education had a sudden need to understand which non-governmental innovations were most effective under the new constraints of school closures and social distancing. HundrED's Research Team responded by studying how leading innovations addressed these challenges (Petrie and Aladin, 2020[4]).

One hundred leading education innovative practices and solutions from 38 countries feature in HundrED's 2021 Global Collection. To be selected, innovation organisations underwent a rigorous review process, including a review and voting procedure by 150 selected education experts from 50 countries in the Global South and North, making over 3 400 evaluations from an innovation shortlist. HundrED's annual Global Collections aim to address the wide span of current education needs (e.g., teacher development, learning environments, and more) across all continents (HundrED, n.d.[5]). The majority of the selected innovations in the 2021 Global Collection were established in the last 8 years and many have shown remarkable growth and impact within this short timeframe. Over 90% have been implemented in at-least 2 countries with a wide range of users from 350 to 150 million; 41% require digital devices to augment learning and 34% require the Internet to be implemented (Petrie and Aladin, 2020[4]). Several of these innovative practices also feature in the current volume.

The learnings yielded from the challenges in 2020 by these innovation leaders are highly valuable to discussions about how we might move forward in the future. The remainder of this chapter is divided into three main sections: (1) a critical analysis of overall trends on what happened during the pandemic, drawing from the continuity stories in this volume and the experiences of non-governmental innovations in HundrED's 2021 Global Collection; (2) a synthesis of the reported long-term lessons from these experiences and what they might mean for education; and (3) a conclusion which sets out several ambitious vision statements for reimagining the future of education after the crisis. It is our hope that the

learnings and visions presented here will support education system leaders to (a) see potential ways to create thriving educational systems which learn from diversity across stakeholders, countries, and both bottom-up and top-down initiatives; (b) embrace more innovation and flexibility to enable the exploration of more ideas in education ecosystems that can translate into concrete actions for improvement.

## Overall trends of what happened: Analysis of innovator challenges and successes

The vast range of contextual challenges and modes of learning around the world required significantly different responses to the pandemic by non-governmental innovations. For example, Chinese-Taipei and New Zealand closed schools only for a few months in 2020, while for India and many other countries, schools closed for most of the year (Our World in Data, n.d.[6]). However, eight common trends emerged on how normal operations were disrupted regardless of context challenges and type of innovation:

1. Teacher and student technology capability and access to digital technologies with a reliable Internet connection was particularly challenging in low- and middle-income countries but was also reported in high-income countries.
2. Innovations that operate out of school programmes had greater flexibility to adapt their operations without needing to adhere to school restrictions and requirements. Many in-person out of school programmes were able to rapidly develop, prototype, test, and scale hybrid learning solutions so they could achieve education continuity within a short period after the pandemic forced home learning.
3. The initial frenzy of activity in response to the school closures was overwhelming and confusing for everyone in education, but communicating and managing parent and student expectations during this period was particularly stressful for innovation leaders.
4. Most educational stakeholders were unprepared for the dramatic change to implement the pedagogy needed to engage students and sustain their attention. There was also a need to identify the best way to support educators to respond to these challenges.
5. The more heavily non-governmental learning providers needed in-person contact and purpose-built environments for their learning models to work, the greater the disruption. Innovations that involved minimal physical infrastructure were the most agile in responding to the crisis.
6. Especially at the primary level, it was more challenging to achieve education continuity for younger age groups during the pandemic. Educators had to rely heavily on their students having access to stable home learning environments with modern digital devices and engaged parental support.
7. School closures illuminated the widely mixed degree to which students can be self-managing and disciplined with the increased freedom of distance learning, where many educators found it more difficult to sustain their engagement and interest.
8. Parental engagement increased overall, which helped to strengthen connections on learning between educator, student, and parent.

It is important to acknowledge the differentiated impact that these trends had across different kinds of contexts and for varying sorts of innovations addressed to different groups of students. This becomes particularly visible in relation to the role of technology and what it could and could not provide during school closures. Notably, purely online Edtech innovations that already had an established reputation and user base, like Kahn Academy and Scratch, experienced a boom in their number of users by 2-4 times in 2020 (Kosarchyn, 2020[7]; Scratch, n.d.[8]). This sudden user surge caused an urgent challenge for their software development staff to provide dramatic increases to their network bandwidth (Patel and Erickson, 2020[9]). This demand was encouraged by many Edtech providers by offering free or heavy discounts for paid services to students and educators (Teräs et al., 2020[10]). Consequently, educators were flooded with

emails from Edtech providers offering their services with extended school trials at no cost during school lockdowns. Some educators reacted negatively to these offerings (particularly from for-profit organisations), arguing it was opportunistic and unethical to try and profit from a crisis (Teräs et al., 2020[10]). However, for many non-profit Edtech organisations like Kahn Academy, the sharp increase caused unanticipated financial strain to provide increased bandwidth for their services, which resulted in needing to publicly ask for donations (Scratch Foundation, n.d.[11]).

All innovators, even those already working online, provided more support through the pandemic in the form of targeted webinars, resources, and programmes with teachers, parents, and leaders. Additional guidance through learning pathways for different grade levels was provided with suggested timetables, lesson plans, and COVID-19 related education resources. However, the adoption of these resources was mostly limited only to those who already had access to digital devices and an Internet connection. As the crisis highlighted, the extent of the digital divide globally was a surprise for many, even for high-income countries in the Global North (Fox, n.d.[12]). However, China was reported as particularly successful at rolling out country wide cloud-based education and low technology solutions – like a dedicated education television channel for example (Xue et al., 2020[13]).

Lower- and middle-income countries, however, often could not rely on access to digital devices and a connection to the Internet (UNESDOC Digital Library, 2020[14]). There are many multi-dimensional and contextual issues on this point; for example, the majority of the world is still poor with the average global income being well below the poverty line when adjusted for price level in each country (The World Bank, n.d.[15]). Average income is predicted to be reduced further with the economic downturn resulting from the pandemic in the coming years. For example, BRAC Remote Play Labs based in Bangladesh found the best use of their resources was not more technology, but to support families with non-educational basic needs like food, health services, psychological support, and even cash transfers (HundrED, 2020[16]). If we consider these basic needs from the bottom two tiers of Maslow's Hierarchy of Needs (Mcleod, 2020[17]) as vital for education to take place at all, then innovations across sectors (not only in education) need to collaborate to ensure these are in place first. While low-income countries have greater basic needs not being met resulting from systemic issues, the pandemic highlighted and exacerbated pre-pandemic inequality in high-income countries as well (United Nations, 2020[18]). Additionally, an often-overlooked area is providing quality education for young people with the vast array of special needs who have been especially affected by widespread school closures (Cerna, Rutigliano and Mezzanotte, 2020[19]). If we are to take the United Nations 2030 Sustainable Development Goal 4 "quality education for all" seriously, we need highly effective innovations for disadvantaged children the most.

Low tech solutions like television, SMS, radio, and low data smart phone applications were commonly used to achieve education continuity by innovators in lower income contexts, and the use of television was also commonly seen in higher-income countries (see Finland story in this volume, for example). However, many rural settings are still severely limited in their access to television and other technologies, which meant mixed results when rolling out scalable solutions for equitable access to education where only in-person communication channels were possible (Cerna, Rutigliano and Mezzanotte, 2020[19]). Teacher professional development for using and teaching with technology is a major bottleneck globally, where even in the European Union, less than half (49.1%) of teachers report any kind of formal ICT education or training (European Commission, 2020[20]). In many cases, home deliveries of physical resources and learning kits were developed to provide the resources normally only stored in workshops or classrooms for contexts where access to digital devices was not possible. In other cases, innovative technical solutions were developed that allowed access to banks of Internet resources – even in contexts with little or no connectivity (see Kolibri story in this volume for example). It is clear that more equitable technology access is needed globally to achieve scalable education continuity during school closures. However, technology access alone does not improve education; consideration of how it is integrated into the larger education eco-system is critical (Yanguas, 2020[21]).

### *What technology could not provide*

Most agree the learning that occurs in school and in person is much more holistic than the learning outcomes set by curricula in traditional subjects, which are often the focus of learning solutions that use only technology (Reimers, 2021[22]; Sahlberg and Doyle, 2019[3]). One of the greatest concerns for innovators in education during COVID-19 was the reduced learning related to social and emotional learning (SEL). SEL is commonly developed through spontaneous interactions at school and in person, as well as by play and collaboration (CASEL, 2020[23]). Because SEL is undervalued in traditional school systems, learning loss and development in this area from the pandemic is not understood very well at large. However, it may be difficult for students to form close friendships and maintain old ones when so much of their interaction is online.

SEL is vital to ensure students develop a healthy sense of their holistic wellbeing. The emotional shift from well-oiled routines for teachers, parents, and students was massive, which eroded the wellbeing of many. Innovators reported a wide range of distressing issues that they felt they had to respond to, including (but not limited to): parents feeling overwhelmed and unsure about what was happening, student loneliness, concerns about the increase of screen-time, anxious staff concerned about cutbacks and potential job losses, and a vast array of new technology related issues for everyone. One innovation leader aptly said that dealing with this shift felt like a "rollercoaster ride" of emotional stress requiring him to respond swiftly and provide answers to problems even when he simply did not have those answers (Liou and Petrie, 2022[24]). The efforts of educational stakeholders and innovation leaders learning to cope with this unusual onslaught has gone mostly unrecognised—yet their resilience deserves special praise.

### *What technology does better*

While it is difficult for online learning to offer the full range and experience of human interaction, there are many significant pedagogical advantages to online learning that have been developed and researched for decades that are yet to be adopted by educators at large (Starkey et al., 2021[25]). During 2020, innovators found that great scalable solutions exist, especially when less responsibility for time-intensive repetitive tasks is left to individual teachers. For example, online instruction makes it much easier for teachers to collaborate and provide support by easily "dropping into" scheduled classes. We also know software is changing fast to automate more and more repetitive tasks – thereby freeing up teachers to spend more time helping students. In particular, the emergence of Artificial Intelligent learning systems that provide dynamic content which adapts to the student is becoming more possible (Bryant et al., 2020[26]). Still, innovators recognise a clear need in this space for a range of teacher development and support solutions to bring pedagogically sound instruction into the way they can effectively deliver online learning. To help address this need, HundrED collaborated with The World Bank and conducted a research project called "Teachers for a Changing World" (HundrED, 2020[27]).

### *Analysis of evidence gathered on these changes*

Changes made by innovators to achieve education continuity were initially emergency reactive solutions designed to bridge the learning gap in the short-term as best they could. However, the uncertainty of how long the pandemic was going to continue with more waves lasting the foreseeable future meant that the impact and efficacy of these solutions was not necessarily measured in a robust and consistent way. Larger more established organisations generally had standard impact systems in place to measure changes and compare findings. In particular, some Edtech innovations had a clear advantage on being able to automate the gathering of quantitative data. However, many publicly available reports only indicate increases in student engagement with shallow details on the nature of that engagement. Innovations catering for lower resource and remote contexts naturally found it much more difficult to measure changes with the need to record this data manually.

Overall, innovation leaders who had the resources conducted "light" internal reports that largely yielded positive findings, which often did not rigorously analyse comparisons to their pre-pandemic operations. In-depth external and independent evaluation reports were rare during 2020 because the extensive resources they require were out of scope for many non-governmental organisations. Thus, while it is encouraging to see positive findings from the changes made to achieve education continuity, comparisons between pre and post pandemic efficacy are not clear in most cases to confirm learning improvement or that potential gaps have been addressed or acknowledged.

While research on different modifications to learning models during the pandemic is now emerging, the longitudinal effects for the vast array of different contexts and sub-groups of students and teachers in K12 education largely still needs to be investigated for non-governmental innovations. Nevertheless, the majority of innovation leaders reported that many of the changes made during the pandemic are likely to continue even when all COVID-19 restrictions are lifted. For example, they recognised the need to have effective ready-to-go hybrid models of learning in place and continued professional development of educators, not only to provide education continuity during a crisis, but to take better advantage of all types of learning modes (including in-person, hybrid, and online environments).

## Eight lessons from the pandemic

Drawing from these trends, the following pages highlight eight major lessons from the experiences of non-governmental innovation leaders.

### *Lesson 1: Uncertainty is here to stay and equitable continuity plans are needed*

A complete eradication of the virus is not possible – making progress in the future non-linear and difficult to predict (Phillips, 2021[28]). Moreover, throughout 2020, COVID-19 greatly exacerbated existing inequities in education systems and emergency response measures, which often only provided partial and temporary solutions (e.g. television, radio, SMS); many do not provide deep and holistic learning experiences necessary for a quality education (Starkey et al., 2021[25]). There is an obvious need to create better continuity plans, and in many contexts, a more developed digital infrastructure. Any development efforts should ensure they take on board what we have learned from the pandemic about the extensive and highly differentiated nature of the digital divide to ensure quality education continues to be provided for *all* students and that systems are ready for future crises.

### *Lesson 2: More system-wide clarity of communication and co-ordination of leadership is needed*

When the pandemic disrupted the normal operation of schools, there was much confusion and disarray across all education stakeholders. For example Béché (2020[29]) found that efforts to achieve education continuity in Cameroon were seriously hampered by disorganisation across education stakeholders. Leaders and educators need to be applauded for navigating many nuanced and challenging issues without clear official guidance on how to manage such sudden changes. Unfortunately, the accumulated stress from these efforts has caused many experienced educational stakeholders and leaders to strongly consider leaving the profession or retiring early (Sokal, Trudel and Babb, 2020[30]; Yle, 2020[31]). Far clearer communication and protocols of co-ordination for system-wide management strategies are needed for the effective implementation of innovative practices and solutions. It is essential that student, parent, and teacher voices are heard, understood, and responded to in the formulation and continuous development of these strategies to improve their efficacy.

### *Lesson 3: There is a need to invest most in innovations that provide quality education to disadvantaged children*

Unfortunately, there is no silver bullet or sure linear path to solving inequities and ensuring quality education is provided for disadvantaged children in every context. In part, this is because such inequity can often be the result of dysfunction in other sectors and failures to provide consistent access to basic needs like nutrition and shelter (Cerna, Rutigliano and Mezzanotte, 2020[19]). But if effective action is not taken soon, then the high degree of social unrest seen in 2020 is only likely to increase with more people in desperate need for answers and solutions (Reimers, 2021[22]). Counter to popular belief, more investment is not an automatic solution for high-income countries with long tails of under achievement in education: for example, like in many OECD countries, New Zealand spending has increased substantially per pupil in the last two decades, yet across multiple international assessments [Progress in International Reading Literacy Study (PIRLS), the Trends in Mathematics and Science Study (TIMSS), and the Programme for International Student Assessment (PISA)], its performance has declined over this time (Law and Hernandez, 2021[32]). In other contexts, Luxembourg spends more than three times per student than Hungary, yet both have similar assessment results (OECD, 2020[33]). We need to identify innovations in and outside of the education system that strive to do much more with similar or fewer resources. Basic needs should be met as the first priority, and then it is essential investment in education is targeted at the sweet spot that combines the highest need and most impact for sustained improvement tailored for each context.

### *Lesson 4: Scalable teacher development solutions fostering sound digital pedagogical skills are needed*

COVID-19 has made it clear that schools need robust hybrid models of learning that utilise the advantages of both online and in-person education. The right balance still needs to be widely agreed upon for different ages and contexts. For those with consistent online access, the pandemic has brought teacher professional development especially into the foreground with dramatically increased technology use for online learning. It has also shone a spotlight on the urgent need for sound digital pedagogical skills to be used. One of the key challenges here is how to scale the unlearning of teaching habits that may have worked well in person but are impractical online (Ko, 2021[34]). Some schools simply tried to replicate an in-person learning experience by having the same classes and pedagogical approach online (Starkey et al., 2021[25]), resulting in excessive mandatory time in front of a screen (Skates and Chan, 2020[35]).

### *Lesson 5: Social and emotional learning is vital to student development and often relies on meeting in person with diverse groups of people*

Future generations will need to interact in person with other young people whose opinions, backgrounds, and personalities vary widely. This interaction is essential to cultivate a future society in which people are curious, compassionate to needs other than their own, and able to listen deeply in order to understand one another. Developmental efforts to cultivate SEL in schools should not be solely focused on providing access (e.g. to technology, physical resources, MOOCs etc.), but rather by growing a community that thrives on diversity, positive support, and enabling young people to collaborate, critically evaluate ideas, and engage in creativity. Studies such as the OECD's Study of Social and Emotional Skills and the Collaborative for Academic, Social, and Emotional Learning (CASEL) framework identify the essential dimensions of SEL development as including self-awareness, self-management, social-awareness, relationship skills, and responsible decision making (CASEL, 2020[23]). Some interventions, such as Slam Out Loud's Art for All programme in India (see story in this volume) have used art to support students to express themselves, develop their creativity, and SEL skills online during the pandemic. However, SEL has remained a challenge for many and more attention needs to be given to how best to develop such skills in a range of learning environments.

### *Lesson 6: Leadership wellbeing should not be ignored*

Leaders of organisations are responsible for ensuring the wellbeing of everyone in the organisation, which is not only critical for meaningful learning to happen, but also for the healthy operation of the whole organisation. Innovators had to quickly develop new compatible learning models for distance learning and co-ordination, which shifted constantly in each context. What became clear from interviewing innovators across HundrED's 2021 Global Collection was that they were looking after their own wellbeing *last*. While it is essential for a leader to support everyone's wellbeing in their organisation, this crisis highlighted that leaders themselves also need support to cope with extreme situations like this in the future. Connecting to other like-minded innovators through organisations such as HundrED.org can be especially helpful because it enables leaders to share experiences and learnings on a global scale.

### *Lesson 7: Self-directed learning abilities are vitally important*

In the United Kingdom alone, it has been reported that only around 60% of teachers had regular engagement with students and only 42% returned work during school closures (Lucas, Nelson and Sims, 2020[36]). Distance learning requires more grit and self-discipline from students; for example, the ability to independently decompose tasks into manageable chunks, tolerate ambiguity, evaluate the quality and validity of resources, and ask the right questions that will lead to solutions (as well as knowing when the question being asked is the wrong one). In some cases, students who had already developed these attributes relished the chance to take charge of their learning and experiment with different areas of learning that interested them (Mintz, 2020[37]). However, without educators and peers there to provide spontaneous and interactive help, many students' motivation and engagement levels simply switched off (Domina et al., 2021[38]; Ko, 2021[34]).

If students had previously been heavily relying on highly guided "recipes" of learning from teachers and resources to work through curricula, then the increased responsibility and need for self-discipline caused much confusion on how to navigate themselves through new problems. Suddenly jumping from old pedagogical approaches of highly scripted learning paths to more student led learning is likely to leave many feeling lost and overwhelmed without adequate scaffolding. Therefore, curricula, schools, pedagogy, and teachers need to be intentional about how they are developing self-reliance and self-directed learning skills appropriate to each age level, which are personalised to each student.

### *Lesson 8: Motivational focused learning loops across stakeholders need to be implemented*

To cope with the major challenges in 2020, innovation leaders found that having strong iterative learning loops firmly in place was one of the key strategies for rapidly moving forward. They often used existing methodologies and frameworks, like agile and design thinking, to formulate strategies to integrate these loops into organisational processes. Smaller independent organisations can easily integrate flexible feedback loops from users into their development and prototyping processes given their agility and lack of bureaucracy. In this way, non-governmental innovators were rapidly able to experiment with different distance learning prototypes and create lean production supply chains. However, the rapid nature of changes during the early stages of the COVID-19 pandemic meant that many did not have time to put in place robust impact evaluation and monitoring systems.

Despite the difficulties of rapid adaptation, innovators recognised that innovations ideally should be driven first by a verified needs assessment and by both qualitative and quantitative (mixed-method) data where possible (Maheshwari-Kanoria, Zahir and Petrie, 2022[39]). Trust was reported as a critical pillar to the success of innovations, and is easier to establish when data and analysis are transparent and open to scrutiny for multiple stakeholders. Innovators also found that updating processes involved "unlearning" old ones and the necessity of making advantages clear so stakeholders could see that new processes were

theoretically “worth it”. Behaviour changes on an individual level are challenging by themselves, let alone at an organisational level. So, with schools commonly reporting being time poor and overwhelmed especially in this crisis, learning loops are unlikely to be well implemented without increased support. Nevertheless, innovators from non-governmental organisations have a lot to teach and be inspired from in terms of how learning loops can be implemented effectively in education at an organisational level.

## Eight vision statements for the future of education

The eight lessons synthesised from the education continuity stories in this volume and from experiences of the 100 innovation leaders featured in HundrED’s Global Collection highlighted that, similar to the advantages that start-ups have over large established companies, non-governmental innovations in education often have a higher degree of flexibility to prototype and deploy solutions to a crisis like COVID-19. For example, some innovators developed, prototyped, and iterated various physical learning kits, which were delivered to the student’s home so they could create and equip “maker space” areas to use in their distance learning. In the increasingly unpredictable world we face today, it would be beneficial to create formal pathways for non-governmental innovations in education to thoughtfully learn from and utilise the insights and lessons outlined here. Drawing from the eight lessons outlined above, eight visions that could help every child to flourish in a post-COVID-19 world follow:

### *Vision 1: Engagement with leading innovative practices and solutions outside of the local area*

The structural boundaries of education systems mean many of the most effective practices and solutions never make it outside of the classroom, school, city, or country. While there are no silver bullets to solve the major educational challenges that can work for every context, all education stakeholders can learn from and be inspired by learning practices and solutions from other countries, which can be adapted in their context. HundrED have been researching and celebrating leading innovations on a global scale for over five years now, but much more could be done to learn, engage in meaningful dialogue that results in concrete action, and strategies for piloting for those innovations assessed as appropriate for multiple contexts. If COVID-19 has taught us anything, we need to be more open to the lessons outside of local education silos, and there are more similarities in our educational challenges to learn from one another than there are differences (as the education continuity stories contained in this volume showcase).

### *Vision 2: Time and resources to support the wellbeing of educators are provided before anything else is added*

One of the negative side effects of the pandemic is the high potential for a mass exodus of leaders and educators from the stress and exhaustion in responding to the crisis (Sokal, Trudel and Babb, 2020[30]; Weale, 2020[40]; Yle, 2020[31]). These issues have been also well documented in education prior to the pandemic. Effective strategies in this area are likely to require investment, however, little progress on any initiative for change will be sustained without allocating resources for educators to have adequate time and support.

### *Vision 3: Two-way dialogue and cooperation across education stakeholders and non-governmental innovations are open*

Through a collaborative process where multiple stakeholders engage in intentional dialogue about contextualising and adapting innovations for low-resource contexts, non-governmental innovations can play a role in helping make the United Nation Sustainability Development #4 a reality by 2030. This dialogue should be centred around developing new and better processes as opposed to simply providing

tools and resources only. One promising example of cross-stakeholder cooperation is how, in Pittsburgh (United States), school leaders, department heads, and non-governmental organisations work together on new innovative learning models (Behr, 2020[41]). Every region in the world should have open and transparent forums to cultivate an innovation-friendly culture in education.

### *Vision 4: Hybrid models of learning that are appropriate for each level of education are developed*

There are clear advantages and disadvantages to both learning online and in person. However, how schools and teachers co-ordinate these modes across different ages and needs is much less understood. Thus, we need robust, clear, and flexible guidelines and protocols backed by trustworthy research for all educators and systems. These hybrid models and guidelines should have education continuity plans for long and short-term school closures that keep student and teacher wellbeing and holistic development core to their design.

### *Vision 5: Thriving communities are the answer, not more technology*

Initiatives to provide reliable Internet and quality digital devices are important, but providing access alone does not improve learning outcomes and solve inequities. For example, we need to be more critical of "technology worship" type of thinking like the One Laptop per Child initiative, which has fallen short of its hype and expectations in Paraguay (Yanguas, 2020[21]). While urgently addressing the digital divide is still important, supporting local and global communities to thrive inside and outside of schools while celebrating diversity may do more to improve education. In this way, collaboration and cooperation between schools and the community needs to be embedded meaningfully into the regular operation of educational systems.

### *Vision 6: A culture of risk tolerance is fostered which allows experimental innovative ideas to fail*

To truly innovate, educational stakeholders need to be able to implement bold ideas that may not yield the expected results. Educational systems need to tolerate failure as a part of the learning process if we are to discover ways to improve outcomes and scale quality education. It is often claimed today that failure is vital to student development and we need more ways to destigmatise it across the education system (Reimers, 2021[22]; Sahlberg and Doyle, 2019[3]). The same could be said for experimenting with new processes and ways of learning at an educator and organisational level. More than ever, the disruption of COVID-19 has demanded impactful and scalable solutions to address the erosion of quality education in all parts of the world. At the same time, there is an opportunity to reform many of the old processes that, as we already know, do not prepare young people well for the future.

There are valid fears and concerns that carelessly experimenting with learning models as if young people were animals in a science lab can be potentially damaging (Zhao, 2020[2]). However, innovators have developed many strategies to prototype and test new ideas thoughtfully in ways that can also benefit students and help them to develop 21st century skills. For example, the innovation of new learning models often necessitates the involvement of student voices and encourages their engagement in meta-cognitive reflection on their learning process (with questions like "How did that go?", "What could we do better next time?" and the like). If we safely and openly involve students in these discussions about careful learning experiments in education, we can not only learn about how to improve innovative learning ideas, but also provide an environment where students increase their self-awareness about their own learning, which is often lacking in traditional school curricula.

### *Vision 7: Teachers are well supported to maintain their passion for learning and development*

In many school systems around the world, students and staff are overworked and may have to compromise on a healthy work-life balance to develop new skills and knowledge (Sokal, Trudel and Babb, 2020[30]; Weale, 2020[40]; Yle, 2020[31]). Educators need flexibility and time to pursue learning and development. Such development should be acknowledged, rewarded, and integrated into job descriptions, alongside access to supportive professional learning environments and outside expertise. A passion for learning is especially important if teachers are to increase their digital pedagogical skills for hybrid learning. Thus, it is vital to enable and motivate educators to engage in continuous professional development and foster a growth mindset.

### *Vision 8: Students are listened to and given more agency to direct their learning*

Current teaching and learning practices are often dominated by predefined outcomes that involve highly scripted linear learning paths, which are often not relevant to students' lives outside of the school (Sahlberg et al., 2017[42]; Zhao, 2020[2]). Education in school should explore learning models that emphasise students *doing* things in the real world with uncertain outcomes. Engaging with practical issues often involves pedagogy that promotes question-driven rather than answer-driven tasks, which avoids concentrating solely on problems with predefined answers. Such learning models, often drawn from pedagogical approaches such as constructionism, and design thinking inquiry processes, which can be more flexible, agile, and relevant to student interests and current societal needs (Reich, 2020[43]). This change involves listening to students and giving them more agency, which is key to help them to take more ownership of their learning and become self-directed. Co-creating learning experiences and environments aligned with student interests can help to foster a growth and entrepreneurial mindset, which enables students to engage in learning much more creatively. These more open and diverse educational experiences will help to illuminate to students that there can be a plethora of possible paths to build success in life.

## Concluding remarks

The COVID-19 pandemic has debunked assumptions that change has to be slow in education, making ripe the possibility for great strides of progress in educational systems. Never before has an event like this brought together people in search of solutions on a global level all at the same time, and we know that every country and region in the world has undertaken innovations we can all learn from – as the education continuity stories presented in this volume showcase. While there is still much uncertainty, the lessons and visions here can help to energise and inspire two-way collaboration between governmental and non-governmental organisations in education globally. We all have a responsibility to advance towards the UN SDG4. In this spirit, it is our hope the global educational community can be fearless in learning from bold innovative education solutions and practices together, so that every child can flourish in a Post COVID-19 world.

## References

Béché, E. (2020), "Cameroonian responses to COVID-19 in the education sector: Exposing an inadequate education system", *International Review of Education*, Vol. 66/5-6, pp. 755-775, http://dx.doi.org/10.1007/s11159-020-09870-x. [29]

Behr, G. (2020), *Pennsylvania needs a statewide panel on learning innovation for life after COVID-19 | Opinion*, Pennlive, https://www.pennlive.com/opinion/2020/12/pennsylvania-needs-a-statewide-panel-on-learning-innovation-for-life-after-covid-19-opinion.html (accessed on 24 September 2021). [41]

Bryant, J. et al. (2020), *Artificial intelligence in education: How will it impact K-12 teachers*, McKinsey, https://www.mckinsey.com/industries/public-and-social-sector/our-insights/how-artificial-intelligence-will-impact-k-12-teachers# (accessed on 24 September 2021). [26]

CASEL (2020), *Reunite Renew Thrive: Social and Emotional Learning (SEL) Roadmap for Reopening School*, https://casel.org/wp-content/uploads/2020/07/SEL-ROADMAP.pdf. [23]

Cerna, L., A. Rutigliano and C. Mezzanotte (2020), *The impact of COVID-19 on student equity and inclusion: Supporting vulnerable students during school closures and school re-openings*, OECD, http://www.oecd.org/coronavirus/policy-responses/the-impact-of-covid-19-on-student-equity-and-inclusion-supporting-vulnerable-students-during-school-closures-and-school-re-openings-d593b5c8/. [19]

Domina, T. et al. (2021), "Remote or Removed: Predicting Successful Engagement with Online Learning during COVID-19", *Socius: Sociological Research for a Dynamic World*, Vol. 7, p. 237802312098820, http://dx.doi.org/10.1177/2378023120988200. [38]

European Commission (2020), *Education and Training Monitor 2020*, https://op.europa.eu/webpub/eac/education-and-training-monitor-2020/en/ (accessed on 24 September 2021). [20]

Fox, P. (n.d.), *The global digital divide*, Khan Academy, https://www.khanacademy.org/computing/computers-and-internet/xcae6f4a7ff015e7d:the-internet/xcae6f4a7ff015e7d:the-digital-divide/a/the-global-digital-divide (accessed on 9 March 2021). [12]

HundrED (2020), *Creativity Spotlight: Five Innovation Responses to COVID-19*, https://cdn.hundred.org/uploads/report/file/34/hundred_spotlight_innovation_responses_covid-19_digital.pdf (accessed on 24 September 2021). [16]

HundrED (2020), *Teachers for a Changing World*, https://hundred.org/en/collections/teachers-for-a-changing-world (accessed on 24 September 2021). [27]

HundrED (n.d.), *HundrED Manifesto*, HundrED, https://hundred.org/en/manifesto (accessed on 22 September 2021). [1]

HundrED (n.d.), *Reports. HundrED.*, https://hundred.org/en/reports (accessed on 22 September 2021). [5]

Ko, A. (2021), *Zoom is a vile teaching tool*, Medium, https://medium.com/bits-and-behavior/zoom-is-a-vile-teaching-tool-cd19851a4cf9 (accessed on 24 September 2021). [34]

Kosarchyn, M. (2020), *How Khan Academy Successfully Handled 2.5x Traffic in a Week*, Khan Academy, https://blog.khanacademy.org/how-khan-academy-successfully-handled-2-5x-traffic-in-a-week/ (accessed on 23 September 2021). [7]

Law, D. and J. Hernandez (2021), *Research Note - Educational Performance and Funding in New Zealand: Are our children getting the education they deserve?*, New Zealand Initiative, https://www.nzinitiative.org.nz//reports-and-media/reports/research-note-educational-performance-and-funding-in-new-zealand-are-our-children-getting-the-education-they-deserve/?1 (accessed on 24 September 2021). [32]

Liou, Y. and C. Petrie (2022), "Chinese Taipei: Contingency plans for hybrid models of learning", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [24]

Lucas, M., J. Nelson and D. Sims (2020), *Schools' responses to Covid-19: Pupil engagement in remote learning*, NFER, https://www.nfer.ac.uk/schools-responses-to-covid-19-pupil-engagement-in-remote-learning/ (accessed on 24 September 2021). [36]

Maheshwari-Kanoria, J., L. Zahir and C. Petrie (2022), "India, Pakistan, Zambia, Kenya and Lebanon: Education Above All's Internet Free Education Resource Bank (IFERB)", in OECD/The World Bank (ed.), *How Learning Continued during the COVID-19 Pandemic: Global Lessons from Initiatives to Support Learners and Teachers*, OECD Publishing/The World Bank, Paris/Washington DC. [39]

Mcleod, S. (2020), *Maslow's Hierarchy of Needs*, Simply Psychology, https://www.simplypsychology.org/maslow.html (accessed on 24 September 2021). [17]

Mintz, V. (2020), *Why I'm Learning More With Distance Learning Than I Do in School*, The New York Times, https://www.nytimes.com/2020/05/05/opinion/coronavirus-pandemic-distance-learning.html (accessed on 24 September 2021). [37]

OECD (2020), *How much is spent per student on educational institutions? | Education at a Glance 2020 : OECD Indicators*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/sites/5e4ecc25-en/index.html?itemId=/content/component/5e4ecc25-en. [33]

Our World in Data (n.d.), *School closures during the COVID-19 pandemic*, https://ourworldindata.org/grapher/school-closures-covid (accessed on 9 March 2021). [6]

Patel, N. and S. Erickson (2020), *Remote learning is here to stay—Can we make it better?*, The Verge, https://www.theverge.com/21570482/remote-learning-khan-academy-interview-decoder-podcast (accessed on 23 September 2021). [9]

Petrie, C. and K. Aladin (2020), *HundrED 2021 Global Collection*, Harvard University Press, https://cdn.hundred.org/uploads/report/file/33/hundred_global_collection_2021_digital_b.pdf. [4]

Phillips, N. (2021), "The coronavirus is here to stay — here's what that means", *Nature*, Vol. 590/7846, pp. 382-384, http://dx.doi.org/10.1038/d41586-021-00396-2. [28]

Reich, J. (2020), *Failure to disrupt: Why technology alone can't transform education*, Harvard University Press. [43]

Reimers, F. (2021), *Leading Educational Change During a Pandemic: Reflections of Hope and Possibility*, Independently published. [22]

Sahlberg, P. and W. Doyle (2019), *Let the children play: How more play will save our schools and help children thrive*, Oxford University Press. [3]

Sahlberg, P. et al. (2017), *Hard questions on global educational change: Policies, practices, and the future of education.*, Teachers College Press. [42]

Scratch (n.d.), *Scratch—Imagine, Program*, https://scratch.mit.edu/statistics/ (accessed on 9 March 2021). [8]

Scratch Foundation (n.d.), *Scratch Foundation Donations*, http://from https://secure.donationpay.org/scratchfoundation/ (accessed on 9 March 2021). [11]

Skates, A. and C. Chan (2020), *Edtech's Answer to Remote Learning Burnout*, Andreessen Horowitz, https://a16z.com/2020/10/16/next-gen-edtech/ (accessed on 24 September 2021). [35]

Sokal, L., L. Trudel and J. Babb (2020), "Canadian teachers' attitudes toward change, efficacy, and burnout during the COVID-19 pandemic", *International Journal of Educational Research Open*, Vol. 1, p. 100016, http://dx.doi.org/10.1016/j.ijedro.2020.100016. [30]

Starkey, L. et al. (2021), "Special issue: Covid-19 and the role of technology and pedagogy on school education during a pandemic", *Technology, Pedagogy and Education*, Vol. 30/1, pp. 1-5, http://dx.doi.org/10.1080/1475939x.2021.1866838. [25]

Teräs, M. et al. (2020), "Post-Covid-19 Education and Education Technology 'Solutionism': a Seller's Market", *Postdigital Science and Education*, Vol. 2/3, pp. 863-878, http://dx.doi.org/10.1007/s42438-020-00164-x. [10]

The World Bank (n.d.), *PovcalNet*, http://iresearch.worldbank.org/PovcalNet/povDuplicateWB.aspx# (accessed on 9 March 2021). [15]

UNESDOC Digital Library (2020), *COVID-19: A global crisis for teaching and learning*, UNESCO Digital Library, https://unesdoc.unesco.org/ark:/48223/pf0000373233. [14]

United Nations (2020), *Policy Brief: Education during COVID-19 and beyond*, https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf (accessed on 24 September 2021). [18]

Weale, S. (2020), *Exodus of exhausted headteachers predicted in England after pandemic*, The Guardian, http://www.theguardian.com/education/2020/nov/18/exodus-of-exhausted-headteachers-predicted-in-england-after-pandemic (accessed on 24 September 2021). [40]

Xue, E. et al. (2020), "China's education response to COVID-19: A perspective of policy analysis", *Educational Philosophy and Theory*, pp. 1-13, http://dx.doi.org/10.1080/00131857.2020.1793653. [13]

Yanguas, M. (2020), "Technology and educational choices: Evidence from a one-laptop-per-child program", *Economics of Education Review*, Vol. 76, p. 101984, http://dx.doi.org/10.1016/j.econedurev.2020.101984. [21]

Yle (2020), *School principals stressed and exhausted during corona spring*, Yle Uutiset, https://yle.fi/uutiset/osasto/news/school_principals_stressed_and_exhausted_during_corona_spring/11666851 (accessed on 24 September 2021). [31]

Zhao, Y. (2020), *Game Changers: Series 1 Episode 2: The Whole of Learning - Yong Zhao on Apple Podcasts.*, https://podcasts.apple.com/au/podcast/series-1-episode-2-the-whole-of-learning-yong-zhao/id1503430745?i=1000469472083 (accessed on 22 September 2021). [2]

# Part II
# Education continuity stories

# Introduction

Stéphan Vincent-Lancrin, Senior Analyst, OECD

Part II compiles the “education continuity stories” that were published on the OECD and World Bank websites, alongside other support materials for educators, between 18 May 2020 and end of March 2021. These country case studies document initiatives supporting the continuation of teaching and learning during the first wave of school/university closures, which took place at different times and for a different duration depending on countries.

The case studies cover governmental and non-governmental initiatives. Some of them are relatively comprehensive while others focus on specific initiatives carried out by governments or non-governmental organisations. The objective was to document a variety of initiatives in different regions of the world, covering different objectives, modus operandi, and target audiences. Those case studies were documented in real time so they could help stakeholders facing similar problems in other contexts. Their publication in a volume fulfils an additional objective: providing evidence of the range of initiatives that were undertaken to support teachers and learners globally.

The timeline and context of the drafting and publication of the “education continuity stories” should be kept in mind when reading them. All case studies describe educational innovations that took place during the first wave of school closures in the country of reference. However, the school closures were not simultaneous in all countries, and the stories were written (or finalised) at different stages of the pandemic.

While the case studies were copy-edited for harmonisation compared to their initial web publication, they were not revised or substantively edited retrospectively. The information and perspective they present reflects the knowledge and information that their authors had at the time of writing.

This implies that the case studies do not take into account studies or information that became available after their initial publication. Telling the final story of the contingency plans presented in the case studies was beyond the scope of this publication, although this would be an interesting contribution to the understanding of educational innovation in an emergency context.

# 5 Belgium (Flemish Community): KlasCement

Andreea Minea-Pic, Policy Analyst, OECD

Type of intervention: governmental (ministerial)
Website: https://www.klascement.net

## General description

In the context of the COVID-19 pandemic, KlasCement, the educational resources network managed by the Flemish Department of Education and Training, has unfolded a number of initiatives to support teachers in their online teaching activities and professional learning. The network, created in 1998 and designed as a "community for and by teachers", targets teachers at all levels of education, including those in adult education and student teachers. On KlasCement, teachers can share and use existing educational resources, including training ones, shared by other teachers or organisations and exchange with other teachers using the teacher forum.

Following the decision to close schools in March 2020 in the Flemish Community of Belgium, KlasCement started creating specific sections on its website devoted to distance teaching and learning, curated existing resources, and asked commercial and non-commercial partners (e.g. school and student management system platforms, platforms with educational videos made by and for teachers, start-up companies providing tools to create online exercises, game-based learning platforms) to upload new content on relevant topics to support teachers (e.g. use of digital tools, video learning). KlasCement also proceeded with the redesign of an online teacher forum that was rarely used before COVID-19 but that appeared as an effective way of enabling teachers to exchange and help each other relative to more traditional methods of communication (e.g. emails). A third initiative has revolved around the organisation of webinars for

teachers where they could learn and ask questions on a variety of topics related to distance teaching, the organisation of virtual classes with their students, student online evaluations, etc.

Between mid-March and the end of April 2020, there were more than 3 000 new contributions on the network and more than 22 000 new members had joined KlasCement (Figure 5.1), a substantial rise relative to similar periods in previous years. Following first investments in a better server to provide higher capacity for the organisation of webinars, KlasCement also plans on further developing its networking features and enhancing its adaptability to each teacher's needs and profile, using technologies such as artificial intelligence.

## Main problems addressed

The COVID-19 crisis led to school closures in the Flemish Community of Belgium in March 2020. Between the time the announcement for school closures was made on Thursday 12 March and schools were closed on Monday 16 March, the educational community only had three days to prepare teachers for the transition to remote teaching and learning. In this context, KlasCement emerged as an effective option to support teachers in delivering digital education and ensuring the continuity of learning.

*Lack of educational digital content*. While KlasCement existed prior to the COVID-19 pandemic, many more teachers started working digitally and created and shared digital content. KlasCement proved to be a useful alternative for accessing appropriate learning materials for teachers, as peer teachers created and shared their educational content, providing a variety of teaching methods.

*Teacher community or practice.* The network equally provided teachers with an easy option to discuss and share material. The moment teachers had to teach on line, they needed more information and to share experiences on how to best implement distance learning. KlasCement also aimed to provide support in this respect.

*Supporting parents to help their children*. While KlasCement mainly targeted teachers, parents also relied on the network during the health crisis. As schools were closed for several weeks, parents had to step in to support their children in their learning activities. KlasCement provided teaching and learning resources for parents to download. Unlike teachers, parents mostly heard about KlasCement through informal channels.

## Mobilising and developing resources

KlasCement is an educational resources network started in 1998 on a teacher-led initiative. In 2013, it was incorporated in the Flemish Agency for Educational Communication. Currently, KlasCement is part of the Communication Division in the Flemish Department of Education and Training. The network targets teachers at all education levels, including teachers in adult education and students in teacher education. More than 200 000 members were using KlasCement[8] before the COVID-19 pandemic, including teachers from the Netherlands (around 14% of users).

The existing resources and infrastructure could thus be quickly mobilised when schools closed.

*Learning resources*. On KlasCement, teachers can share resources t or search for inspiration as well as resources from other teachers, while educational organisations can upload content or advertise their educational initiatives. Around half of the shared materials are downloadable educational resources (e.g. lesson sheets, text documents with quizzes, mathematics or self-evaluation worksheets), while the rest includes interactive exercises, articles, apps, software, videos as well as a number of training activities

8 If an account remains inactive for a year, it is deleted from the network.

for teachers. The vast majority of resources are developed and shared by teachers, with a relatively small number being shared by other organisations or students. Resources are generally provided free of charge, shared under a Creative Commons license, although training activities can incur a fee when organised by external organisations (and possibly include other physical material, etc., not hosted by KlasCement).

*Human resources*. The network is managed by a team comprised of moderators who monitor and publish educational resources submitted by users, web developers and co-ordinators in charge of user experience, public relations and collaboration with external organisations. The moderators are about 12 part-time teachers, each responsible for a certain educational level or range of subjects. They continue to work as teachers as well in order to stay connected with what is happening in schools.

Their role is to check the language of the resources (spelling, etc.) or for easily identifiable mistakes. They also control the copyright of materials and add metadata before publishing the resources to make them easily findable via an advanced educational search engine. Given the decentralised structure of the education system in the Flemish Community of Belgium and the design of the network as a "community for and by teachers", the network team does not perform quality checks or provide suggestions on the pedagogical use of content. However, teachers can receive feedback from the community through ratings or replies to their material.

During the COVID-19 disruption, KlasCement rolled out three types of initiatives relying on the existing network:

1. Curation of teaching and learning materials

The team in charge of the network identified teaching and learning materials related to distance learning, video learning, digital tools, educational technologies, etc. that were already available on the network. This material was then put forward in specific sections, extra pages or videos on the network's website dedicated to the COVID-19 disruption. More than 38 pages were created on themes related to distance learning, creating video lessons, etc., targeted at teachers of all levels of education.

To identify and promote additional teaching and learning materials relevant for teachers during the COVID-19 disruption, collaborations were established both with other sections of the Ministry of Education and with external providers, including three main commercial partners. While the team behind KlasCement does not create content itself, staff of the Ministry of Education can contribute with material that is then shared on the network. For instance, during the COVID-19 disruption, members of the ministry created manuals, guidelines for parents on how to organise their home to create an environment for children to learn, etc.

In addition, KlasCement also identified educational companies or publishers with interesting materials to help teachers during the disruption and invited these organisations to share their content. By creating their own KlasCement account (rather than having the KlasCement team share the material), external providers can change the content they share, monitor the reactions to the content and thereby become more aware of and involved in the use of their materials. Beyond the three main commercial partners of KlasCement, a number of other smaller companies, Flemish or international, started offering their tools for free through the end of the summer (e.g. an online platform for teachers to share exercises, game-based learning platforms). KlasCement collected these resources in a new section of the website and indicated to teachers that they could use the tools freely for a given period. In addition, KlasCement also started collecting and promoting manuals to guide and inform teachers on how to use these tools.

2. Online teacher forum redesign

While KlasCement already had an online forum where teachers could help each other, it was not used extensively before the COVID-19 disruption. During the Easter holidays, KlasCement's three developers redesigned the existing forum to make it easier for teachers to support each other and discuss, as well as to exchange with experts, through a simpler question and answer format. Questions in the forum also

revolved around how teachers could communicate with and engage children from socio-economically disadvantaged backgrounds facing additional difficulties during the school closure (e.g. lack of sufficient or high-quality ICT infrastructure at home).

The questions raised by teachers in the forum were then promoted in the next weekly newsletter of the network. KlasCement asked teachers if they knew the answers to the questions and if so, whether they could provide these answers in the teachers' forum.

3. Webinar organisation

KlasCement started organising webinars to answer teachers' need for support with respect to the implementation of distance learning. The network team chose general topics related to distance education (e.g. tools for distance education). When subscribing as well as during webinars, teachers could ask specific questions regarding the chosen topic and thereby orient the discussion to their own areas of interest. To organise the webinars, KlasCement could rely on the extensive knowledge and skills of a colleague who had previously guided schools in implementing their digital education strategies.

Webinars were organised three to four times a week. While at the beginning of the school closure questions focused on the use of educational tools, later questions touched on a broader variety of areas (e.g. creating online learning paths, student evaluations, the organisation of webinars by teachers). Seminar presenters were either part of the KlasCement team (as some IT co-ordinators in schools are partly working for KlasCement) or from the Ministry of Education. In addition, KlasCement also invited pedagogical advisors to intervene in some webinars, usually building on earlier co-operation with them in other projects.

Following the development of the webinars during the school closure, the Ministry of Education invested in a new server for KlasCement webinars. Since then, KlasCement has also been providing training to colleagues in the Ministry of Education. The webinar has become an extra component of KlasCement for teacher professional learning.

## Fostering effective use and learning

KlasCement seeks to act both as a source of inspiration for teachers and as a tool for professional learning, as teachers can learn from the materials shared by their peers and the network includes a number of training activities for teachers. A majority of teachers report that they download the content available on KlasCement to get ideas for their own teaching then adapt it to their pedagogical needs. In this respect, the KlasCement team motivates teachers to download the content and share it again if they remix, make changes or add additional content in the meantime.

Moreover, the network team also examines the most popular teacher profiles on the network and tries to stimulate teachers to share materials, not only by asking them, but also by giving symbolic incentives (e.g. tickets for cultural events). While the quality of the content itself is not checked, the team managing the network checks whether the content is popular among teachers or fills a gap. If this is the case or teachers engage very actively and effectively in the teacher forum, the platform grants again symbolic rewards to contributing teachers.

KlasCement also allows external providers to share content and add teacher-training opportunities on the network, and a promotional newsletter allows such organisations to advertise their offers (in exchange for a fee).

The information collected by KlasCement on teachers' navigation supports KlasCement in adapting to teachers' needs by promoting materials that teachers will likely need for their lessons in subsequent periods, etc. This makes the platform more attractive. A teacher who visits KlasCement today still has to search for inspiration for his lessons next week. In the future, the platform will recommend content tailored to teachers' needs at a specific point in time.

## Implementation challenges

Implementation challenges during the COVID-19 disruption mostly lay in ICT infrastructure tools as well as the need for the team to co-ordinate the work on the platform remotely.

On the one hand, the teacher forum had to be redesigned to allow for more effective and easier exchanges between teachers. On the other, due to privacy-related issues, KlasCement had to stop using the video and audio platform chosen initially for the organisation of the teacher webinars. The transition to a new video and audio platform had to be done rapidly, triggering additional challenges (e.g. server availability, search for an open source solution). In the light of this experience, the government subsequently decided to invest in new tools and the acquisition of a server to facilitate the organisation of webinars and other similar activities.

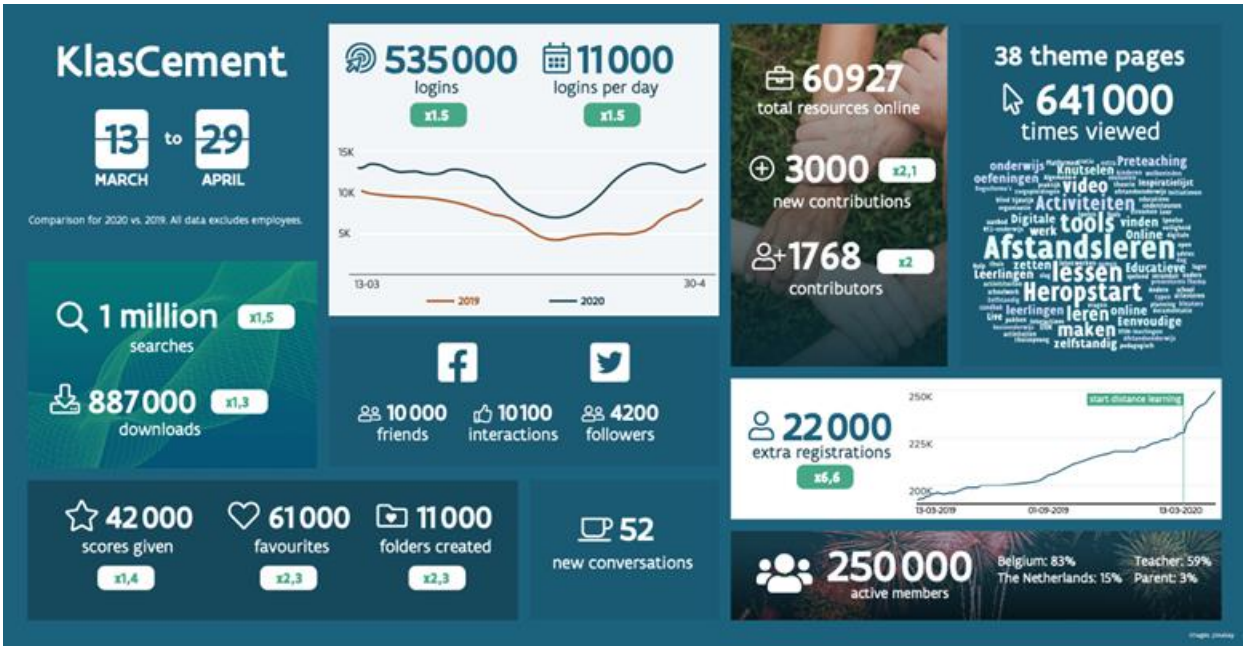
One additional challenge related to the co-ordination of the network in a remote way. Due to restrictions associated with in-person work, the team had to change the way in which the team members exchanged, fine-tuned network features or simply communicated with each other to solve network-related issues. Co-ordinating work on KlasCement remotely, with limited social contact between team members, was another challenge associated with the COVID-19 pandemic.

## Monitoring success

A number of indicators have been collected during the COVID-19 crisis regarding teachers' use of the network. Between mid-March and the end of April 2020, there were more than 3 000 new contributions on the platform, shared by almost 2 000 members, with an average of 500 new learning resources every week. More than 22 000 new members joined KlasCement throughout this period, a substantial rise relative to similar periods in previous years. In addition, more than 50 discussions were initiated in the teacher forum.

In addition, KlasCement relies on data analytics to investigate and identify which pages are more the most popular, track keywords and predict what teachers would be searching for in the following periods. These analyses allow preparing and adapting the content of the KlasCement newsletter to topics that are of interest to teachers.

### Figure 5.1. The use of KlasCement during the COVID-19 pandemic




Source: KlasCement.

## Adaptability to new contexts

While more than 80% of the resources on KlasCement are in Dutch, there are also resources available in English, French and German and a relatively smaller number in other languages. The network uses the Flemish educational system's curriculum and terminology, but when teachers from the Netherlands register on KlasCement, the list of subjects, educational levels, terminology, etc. from KlasCement are automatically adapted to the Dutch educational system. In addition, KlasCement has already participated in a number of initiatives to support the development of similar networks in other countries and is also involved in a network to exchange with and learn from networks in different countries (European Schoolnet – Educational Repository Network).

The network existed well before the COVID-19 pandemic, and its initiatives will continue in the aftermath of the crisis. KlasCement is likely to benefit from a number of changes to enhance its use. The COVID-19 crisis has emphasised the importance of connecting teachers and providing them with a network where they can discuss, support and learn from one another. KlasCement will therefore focus on improving its networking features by enhancing the teacher forum and relying even more on the expertise of teachers, for example by making it possible for teachers to follow each other. To further refine its networking features and to increase the adaptability of the platform to each teacher users' needs and profile, KlasCement is currently collaborating with external organisations that bring expertise in the area of artificial intelligence and user experience.

The main idea of KlasCement is easily adaptable to contexts other than Flanders. It assumes some access to a good ICT infrastructure. However, one of the key features for the implementation of KlasCement lies in the trust placed in teachers and in the quality of the content they share. KlasCement has functioned as a bottom-up initiative by and for teachers, and it became part of the Ministry of Education after being voluntarily run and co-ordinated by a non-profit organisation for more than a decade. The trust put in teachers is reflected, for instance, in how materials are shared on the network, with the team managing the network only checking copyright and spelling mistakes before publishing the material. Trusting

teachers, the materials they publish, their reviews and questions shared on the website is at the core of the network's implementation. While this trust already existed in the case of KlasCement, it is key for any adaptation in other countries.

### Box 5.1. Key points to keep in mind for a successful adaptation

1. Involve teachers from the onset to develop a sense of teacher agency in using, contributing to and learning from the network.
2. Invest in high-quality IT infrastructure (e.g. server capacity, website and search engine design) to support the network.
3. Rely on a network support team of teachers who are responsible for curating resources, making content easily available and identifiable, communicating with and identifying external partners, etc.
4. Join educational repository networks to share good practices and learn from what similar network developers are doing in other countries.

## Acknowledgements

Many thanks to Hans De Four, Founder and Head of PR at KlasCement.

# 6 Brazil (Maranhão): Early learning in Maranhão

Nicole Paulet Piedra, Director of Content, Laboratório de Educação

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: governmental/public-private partnership
Website: https://www.educacao.ma.gov.br

## General description

The Brazilian state of Maranhão ranks tenth in the country by population size and is home to more than 1.8 million public school students. The decentralisation of the country's educational system is reflected by the fact that 90% of Maranhão schools are under municipal jurisdiction, including the 7 484 early childhood education centres that serve 283 108 children (INEP, 2018).

In accordance with public health guidelines to limit the spread of COVID-19, the State Secretariat of Education suspended in-person school activities on 17 March 2020, and mobilised teachers' unions and local participatory councils in the development of alternative solutions to provide educational continuity for all students, whether they attend municipal or state-managed schools.

The secretariat's response began promptly two weeks after the initial decree mandating school closures, and involved distributing educational content through state-owned radio and 40 regional subsidiaries. The state legislature provided the secretariat with access to its TV studios, equipment to record digital lessons and podcasts, and airtime on its channel. By mid-April, educational content for elementary and high school students was broadcast twice a day over three open-access television channels and once a day on public

radio. The programming gradually came to incorporate content for students aged 0-6. The development and distribution of resources for early learning are the focus of this note.

On 28 April 2020, the National Education Council ratified guidelines that emphasised the specific challenges involved in devising remote learning methods appropriate for early childhood education. Its recommendation to prioritise interaction-based activities in the home represented a new challenge for state authorities: namely, how to best assist parents and guardians in caring for young children and enriching their day-to-day environments. This would entail revising the strategy for digital content production, to make caregivers the primary target audience, rather than the children alone.

These new requirements prompted the secretariat to build on an existing partnership with Laboratório de Educação, a non-profit organisation that aims to sensitise adults about their important role in the learning process of the children with whom they live. Based on insights from qualitative research conducted in five rural Maranhão municipalities in 2019, Laboratório de Educação had developed a family engagement curriculum that offered concrete suggestions on ways for parents and caregivers to encourage child learning by interacting with them during daily routines and household tasks. These ready-made educational resources enabled the Secretariat of Education to reach over 10 000 people through social media channels within two weeks of the National Education Council's recommendation to make families the direct audience of early childhood educational content (as opposed to young children). Every weekday, the secretariat broadcasts or distributes a three- to five-minute video clip through state-owned television, radio and social media channels.

## Main problems addressed

The Maranhão Secretariat of Education faced multiple hurdles with the inclusion of children under six in its response to the COVID-19 pandemic.

First, the decentralised structure of the Brazilian education system made it difficult to design a rapid and effective strategy that would ensure continued learning opportunities for children of all ages. The 1 094 institutions under the direct supervision of the state government encompass 96% of adolescents enrolled in secondary education, compared to only 3% of students in elementary and middle school (INEP, 2018). Early childhood learning centres, in turn, are run by 217 municipal administrators with varying levels of operational, technical and financial capacity. In this context, the secretariat played a crucial leadership role in mobilising local district leaders and civil society organisations in order to draw upon the experiences of individual municipalities and devise a unified response that incorporated children aged 0-6.

Second, only 61% of Maranhão residents have access to the Internet, whether through computers or mobile phones. As a result, proposed solutions had to centre around tools that could impact children without access to such technology. The secretariat therefore quickly established partnerships with open-access television channels as a means of delivering content to the 93% of Maranhão families that own a television (IBGE, 2020[1]).

Finally, compliance with National Education Board's guidelines for remote learning in early childhood education required that the secretariat address a multi-faceted challenge. In order for educational programming to effectively promote constructive interactions between children and caregivers, materials had to be created with parents as a key target audience. In a state where 55% of adults have not completed elementary school and 16% are unable to read or write, resources needed to feature accessible and applicable knowledge, models and suggestions that not only enrich children's learning environments, but also build the confidence of parents and guardians as they carry out these recommendations (IBGE, 2017[2]; 2019[3]).

## Mobilising and developing resources

With the aim of fostering co-operation across municipalities, the secretariat's first action was to mobilise state and local education boards, teachers' and municipal administrators' unions, and other civil society actors. Members of these deliberative bodies participated actively in drafting the guidelines and response strategies as early as 19 March.

From a pedagogical standpoint, Maranhão's approval in 2019 of a unified state curriculum for early childhood and elementary education laid the groundwork for the streamlined creation of materials and content that met the needs of all municipalities. To operationalise production, the secretariat activated various governmental resources, such as the state legislature's TV channel and the public radio station Rádio Timbira. The secretariat's internal communications team also co-ordinated the communication about and distribution of educational content through as many state social media channels as possible.

Following the publication of the National Education Board's guidelines for early childhood educational strategies during the pandemic, the secretariat connected with Laboratório de Educação to implement across the state the structured methodology to support parents of young children in transforming everyday situations into learning opportunities.

With funding from Eneva, an energy company with operations in several Maranhão municipalities, Laboratório de Educação adapted its existing family engagement strategies and resources to the secretariat's technical requirements for multimedia content. The state's decision to make Laboratório de Educação solely responsible for content production allowed municipal administrators to focus on ensuring that all local families learn about this content, and to provide alternatives to families who would need other forms of contact.

## Fostering effective use and learning

Digital tools and devices have played a role in most governments' educational responses to the COVID-19 pandemic. However, while most older students have the skills to engage autonomously with online curricular content, younger children rely heavily on in-person interactions for learning.

The Maranhão Secretariat of Education decided to use technology to enhance, rather than substitute, adult-child interactions in everyday life and promote high-quality learning contexts, especially among low-income families.

The video, photo and audio content created by Laboratório de Educação offers research-based suggestions and models for transforming daily tasks such as cooking and cleaning into opportunities for children to learn about their surroundings, without the need for additional resources. For example, when sorting laundry, parents can ask their children to point out which clothes belong to different family members; describe the size and colour of a given item; or count the number of socks, shirts, pants, etc. An older child may even be able to organise the clothes with a degree of autonomy. These interactions spark children's curiosity and interest, while developing their comprehension of mathematical concepts. The resources thus aim to help adults be proactive and attentive to their child's development, by providing accessible examples of simple, intentional actions that can be easily incorporated into daily routines, rather than creating separate contexts for learning. In sharing these resources with families across Maranhão, the secretariat is simultaneously promoting educational continuity for children and empowering parents in their dual roles as caregivers and informal educators.

In addition to the aforementioned materials, the secretariat also distributed a collection of free digital children's books and read-aloud videos produced by Laboratório de Educação specialists to promote language development among children in families with low educational attainment and few books at home.

## Implementation challenges

The main challenge to distributing this content was how to leverage new and pre-existing channels of communication in order to reach as many families as possible. Successful implementation therefore required close collaboration with the Maranhão branch of the National Union of Municipal Education Officers, whose members have roots in local school communities and could mobilise them to make families aware of the resources available on public TV networks and radio stations. These outreach efforts have been particularly relevant as the Secretariat of Education did not have a direct connection with families of young children, given that early learning mainly happens at home or in centres run by municipalities.

For example, educators that participated in Laboratório de Educação's family engagement programme carried out in five municipalities in 2019 receive learning resources from the organisation through automated WhatsApp transmission lists. Those municipalities have requested that principals, co-ordinators and teachers disseminate this content to existing school WhatsApp groups (WhatsApp is one of the most popular messaging apps in areas with limited Internet connectivity. Cell phone plans in Brazil often include unlimited WhatsApp usage, and over 80% of Maranhão residents own a smartphone). They also have involved their social assistance departments to help reach families that benefit from their programmes and might not be part of school communication channels. Going forward, the Maranhão Secretariat of Education will guide other municipalities through the process of obtaining contact information for local families and organising them into WhatsApp groups, following this pilot phase.

Despite these efforts to communicate through school and other channels, it will also be crucial to identify and reach out to families in rural areas that require similar solutions tailored to their extremely vulnerable situation. This is particularly pressing in regions where families' lives could be further disrupted by displacement due to heavy rains and flooding.

## Monitoring success

In light of Brazil's decentralised educational system, the fact that Maranhão families with children aged 0-6 now receive daily guidelines on how to promote age-appropriate learning activities at home is already an achievement. State authorities could have responded to the national public health emergency by using technology to reinforce more traditional or mechanical practices that largely eliminate interaction. Instead, the secretariat invested in high-quality content that is not only scalable, but also respects the learning or curricular needs of children this age.

The secretariat has already distributed content to tens of thousands of families through its social media channels, but monitoring the precise reach of TV and radio audiences remains a challenge. In order to ensure that the strategy benefits a larger proportion of families with young children in the state, in early May 2020, the secretariat convened nearly 200 municipal administrators to devise targeted plans for outreach to additional families over the following weeks.

## Adaptability to new contexts

The measures adopted by the Maranhão Secretariat of Education can be replicated in other middle-income countries with decentralised decision-making structures, but also with a solid network of civil society individuals and organisations that are willing to work together to leverage existing knowledge for an agile response. In this sense, the tradition of public-private partnerships in the Brazilian educational sector facilitated the creation of a collaborative solution, at no cost to state authorities.

The choice to develop content that can be watched on mobile devices as well as TV and radio also played a role in the initiative's success. By taking responsibility of the production of and ensuring large-scale broadcast and dissemination of the educational content across the state, the secretariat enabled individual municipalities to pursue other intentional strategies to reach the most vulnerable and isolated families.

The communication channels built for the pandemic response could be transformative even after the crisis as a possible mechanism to strengthen school-family relations and give visibility to informal learning experiences and interaction in early childhood education. Given the social and economic conditions in a poor state such as Maranhão, this solution could help empower families to see themselves as educational agents, regardless of their own schooling trajectories. It could also foster a sense of responsibility among teachers and principals for providing support to parents in their role as educators, to strengthen children's learning opportunities.

### Box 6.1. Key points to keep in mind for a successful adaptation

1. Mobilise local stakeholders in defining the problem and sharing responsibilities for different aspects of implementing the solution.
2. Build on existing curricular guidelines to devise age- and context-appropriate responses to the needs of children at all educational levels.
3. Identify internal and external partners in order to fast-track pedagogical and operational dimensions of the educational response.
4. Target parents and caregivers as key interlocutors in early childhood education, and provide ideas and simple routines to help them promote learning at home without the need for additional learning materials.
5. Prioritise channels of communication that reach a large number of families while also exploring specific solutions that target those in particularly isolated regions.

## Acknowledgements

Thanks to Joao Paulo Mendes de Lima, Superintendent of Planning and Network Collaboration, Maranhão Secretariat of Education.

## References

IBGE (2020), , https://www.ibge.gov.br/. [1]

IBGE (2019), , https://www.ibge.gov.br/. [3]

IBGE (2017), , https://www.ibge.gov.br/. [2]

# 7 Brazil (São Paulo): São Paulo State Department of Education

Lucia Dellagnelo, President and CEO, Centre of Innovation for Brazilian Education (CIEB)

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: governmental (with partnerships with private and non-profit organisations)
Website: https://centrodemidiasp.educacao.sp.gov.br

## General description

The state of São Paulo has one of the largest school systems in Latin America, with 3.5 million students, 5 100 schools and 190 000 teachers. Despite the complexity related to its size and diversity, it was the first state in Brazil to implement consistent measures to respond to school closures due to the COVID-19 pandemic. Three features stand out in the measures taken by the State Department of Education (DE/SP): 1) agile planning; 2) mobilisation of key actors and funders; and 3) rapid implementation. In a period of 41 days (16 March to 27 April 2020), the DE/SP was able to put together effective measures to provide learning and social support to students and their families. What made this possible was the combination of strong leadership and the collaborative work of a dedicated executive team and a network of influential donors.

On 13 March, the State Governor announced general measures to flatten the contamination curve. For the DE/SP, this meant suspending school activities a few weeks after the beginning of the school year, which runs from February to December in Brazil. The Secretary of Education assembled a small group of advisors to design a strategic plan for education continuity.

There was a transition period until complete closure on 23 March, during which teachers, students and families received information about preventative healthcare and social support. After that date, and until 27 April, they were on early school vacation. To gain time in the planning process, the secretary negotiated two new decrees, approved by the State Education Council, which anticipated all students' and teachers' coming holidays for the year and thereby granted the DE/SP 30 days to plan for educational activities and education continuity.

Partnerships with companies and non-profit organisations were key to launching the strategic plan for education continuity, which included several activities, from the distribution of printed materials to free access to online platforms:

- ***Nutrition and social support.*** Public schools in São Paulo usually offer one free meal to all students on a daily basis. But during school closures, the DE/SP had to rethink its strategy and decided to target students living in extreme poverty. On 25 March, the DE/SP launched a social support programme called "Merenda em Casa" aimed at providing food to students from families in the lowest quintile of income distribution by transferring a cash allowance using a platform called PicPay. As of early May 2020, 732 000 students whose families are registered in the Cad Unico (national welfare database) receive the allowance. For students whose families do not receive Bolsa Família, a national cash transfer programme, the allowance is doubled by donations from Comunitas, a national non-profit organisation that promotes public-private partnerships.
- ***Printed materials.*** The DE/SP mobilised its team of K-12 curriculum experts to create educational kits that could be distributed to students, particularly early grade students. The kits contain textbooks, literature and guidelines for parents and caregivers on health and education. The DE/SP also enlisted the local police to help distribute the educational kits to students at home.
- ***Online pedagogical resources.*** On 3 April, the DE/SP announced the creation of the Education Media Centre (Centro de Mídias da Educação de São Paulo) to produce and broadcast educational content to all students in São Paulo. The media centre first produced an app which offers free access to several private online platforms for six months. The app is data-sponsored, meaning that students do not need to use their mobile data when using it. The DE/SP negotiated discounts and tax incentives with Internet providers to sponsor data packages for students.
- ***TV content.*** The Education Media Centre also produces and broadcasts educational content on open TV in partnership with TV Cultura, offering video classes exclusively on four channels. The aim of the partnership with TV Cultura was to ensure that the video classes were produced and broadcasted professionally. The DE/SP identified teachers with experience teaching on line, and invited them to produce and record the video classes. On 27 April, TV Cultura began broadcasting video classes to all students.

The Education Media Centre is now producing training programmes for teachers, and around 200 video classes per week covering all K-12 curriculum. Classes can be viewed on open TV and the Internet simultaneously, which allows for interactions between teachers and students. They are recorded and can be accessed at any time. The Education Media Centre will continue to operate throughout the school year to create new blended learning experiences for students and teachers.

One factor that allowed the São Paulo Education Media Centre to be set up quickly was the Secretary of Education's experience in leading an initiative in 2007 that broadcasted live classes on TV to small villages along the Amazon River, the Centro de Mídias de Amazonas.

## Main problems addressed

The plan addressed the following main problems:

- Vulnerability of low-income families regarding nutrition, health and housing conditions.

- Teachers' and students' lack of access to the Internet and to digital devices. In São Paulo, only 40% of students reported having computers at home, but 94% had access to a smartphone.
- Teachers', administrators' and students' lack of experience using technology for teaching and learning.

## Mobilising and developing resources

The DE/SP relied on pre-existing partnerships with civil society organisations to implement the education continuity strategy. Partnerships have been a tradition for the DE/SP since 2011, when the Pact Compromisso por São Paulo was established, bringing together different civil society sectors around a common agenda for improving public education in the state. Prior to the pandemic, foundations were already funding projects, such as the design of a proposal for a new teachers' career and professional evaluation, the use of technology for learning, and the transformation of selected schools into full-time schools (*escolas de tempo integral*). Non-profit partners continue to help fund the production of online educational content, free access to paid learning platforms and the hiring of education experts in learning assessments.

In addition, the state renegotiated pre-existing contracts with commercial suppliers, such as for school meals and transportation, in order to redirect financial resources towards sponsoring students' access to the Internet and the contract with the TV station in order to broadcast the media centre's video classes.

The DE/SP issued a public request for proposals asking for educational content, devices for teachers and students, and software, or any other product or service that contributed to education continuity from potential partners and donors. The public request is necessary according to federal law which regulates partnerships between companies and non-profit organisations with the government.

The DE/SP estimates that the value of all the donations received to implement its strategy for education continuity was approximately USD 40 million in services and products from foundations and companies, which corresponds to 0.6% of the total annual budget for public education in the state.

## Fostering effective use and learning

The initiative is carrying out a very proactive communication campaign on TV and social media to keep teachers, families and students engaged in learning activities.

The Secretary of Education holds daily online meetings with as many as 128 000 people, explaining the overall strategy and answering questions. The general message is "we cannot leave any student behind" and need to overcome obstacles as they arise.

Teachers are now creating virtual spaces for all of their classes in order to keep close contact with their students, answer questions about the content of the video classes and propose assignments.

## Implementation challenges

- The DE/SP did not have a robust technology infrastructure to host the Education Media Centre. It established a partnership with Amazon Web Service for free service for six months.
- Teachers were not prepared to teach on line: the Education Media Centre offers training courses on remote learning to all teachers.

- Some students were out of reach. The DE/SP established a task force to reach parents by phone or any other possible way, including home visits. The task force involved regional directors (the department has 91 across the state), school principals and teachers. Each teacher was trained to create a virtual classroom (using Google Classroom) and was requested to report if they could not communicate with a student via email. The school principals would then call the student's family to see how they could engage the student in learning activities and schedule the distribution of printed materials.

In 2019, the DE conducted a new registration process requiring updated contact information of every student and family. It also created Google email accounts for every student and teacher. That proved to be key in reaching out to members of such a large school system. However, some new teachers and students were not yet in the official database and completing the database was one of the logistical challenges.

## Monitoring success

In the first week of the Education Media Centre, more than 1.3 million students used the app or reported watching the classes on TV. During this time, teachers were expected to send questions and exercises to their students and check on their engagement.

Although the initiative uses multimodal strategies to provide learning (TV, app with free Internet, distribution of printed textbooks), the DE/SP expected to reach, two weeks after the start of the TV broadcast, around 80% of students.

Another marker of success is the number of partnerships established by the DE/SP, which mobilised more than USD 40 million in services and products, representing 0.6% of the annual budget.

## Adaptability to new contexts

- This solution could be implemented in large and diverse school systems, located in regions with high levels of economic activity.
- The DE/SP method is already being replicated in other states in Brazil, such as Paraná. The Council of Secretaries of Education created a webpage to disseminate information about what different states are doing.
- Smaller states find it hard to negotiate partnerships with donors because they do not have the same scale and visibility as the state of São Paulo.
- The DE/SP is planning to continue to use the Media Centre after schools reopen to provide blended learning and broaden learning opportunities (in school and on line), and offer new courses to high school students. According to the Secretary of Education, the pandemic accelerated innovations that the DE/SP was already planning to implement.

### Box 7.1. Key points to keep in mind for a successful adaptation

1. Strong political will and leadership is key to mobilise resources and achieve rapid implementation.
2. Developing partnerships with companies and non-profit organisations is strategic to avoid delays due to bureaucratic procedures.
3. To reach the maximum number of students and their families, school districts need to offer multimodal learning activities.
4. Establishing honest and frequent communication with all stakeholders (i.e. teachers, principals, administrators, students and families) is vital to support the technical and emotional demands of the rapid changes imposed by the pandemic.

## Acknowledgements

The authors would like to thank the DE/SP for providing documents with information about the initiative and to Secretary Rossieli Soares for giving an online interview on 30 April 2020.

# 8 Chile: Súmate Foundation – Second chance schools network

Cristóbal Madero, Assistant Professor, Universidad Alberto Hurtado

Enid Vargas, Operations Director, Súmate Foundation

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: non-governmental
Website: www.sumate.clhttp://www.fundacionsumate.cl/

## General description

Established in 1993, the Súmate Foundation supports out-of-school children and youth between the ages of 12 and 21 in resuming their schooling. In 2019, the organisation served 1 882 students. An average student who participates in one of the five schools or six programmes sponsored by the foundation throughout Chile has a learning lag equivalent to more than two years below grade level and has been out of school for at least two years. Súmate sponsors students whose family members have also experienced interrupted schooling. A considerable number of students live in juvenile protection institutions, are exposed to social risks such as drug abuse, early parenthood and run-ins with the law. In addition, they are more vulnerable to unemployment working in the informal sector, living in overcrowded homes, without adequate spaces to study or Internet connectivity.

By joining a second chance school, the students participate in an adaptation process designed to help them rebuild trust in adults. In the context of Chile – but also as documented internationally – children and youth attending such schools are generally considered dropouts rather than excluded from the school system. The challenge of keeping these students in school is amplified because they are stigmatised for

being outcasts from the system and blamed for their academic failure. Thus, renewing an emotional connection with this type of student is essential to support their academic achievement. Through the programme, teachers and tutors focus on establishing emotional bonds through intense and constant social and emotional support.

From 16 March onwards, just two weeks after the start of the school year in Chile, the Ministry of Education suspended school classes throughout the country. Initially, schools continued food service and delivering printed educational material. However, after a few days, those services were also suspended with the aim of protecting the health of both students and school staff. Then the winter break, initially scheduled for July, was moved forward to 13-24 April. In this context of multiple interruptions in schooling in less than two months, Súmate developed strategies to continue connecting with students and providing them with emotional support virtually, for the first time in its history.

During the COVID-19 pandemic, Súmate relied on free social networks, such as WhatsApp, Instagram and Facebook, and on students' smartphones as communication channels through which to continue providing emotional support to students and families and for educational continuity. The organisation's leadership has also provided continuous emotional support to teachers and support staff. In 2018, Súmate collaborated with United Nations Educational, Scientific and Cultural Organization (UNESCO) to receive technical assistance to build and implement curriculum adjustments with a focus on socio-emotional skills. UNESCO continues to support the work Súmate is doing today, and has proved to be essential in the process of supporting the students.

## Main problems addressed

In the context of the public health emergency caused by COVID-19 and all the adversities experienced by the students participating in Súmate's programmes, the organisation faced three challenges.

First, students had no access to computers and poor Internet connectivity at home. They could not take advantage of the wide range of online educational platforms offered by the Ministry of Education, which requires access to a computer and an Internet connection. In addition, most students in the programme have minimal digital literacy, as they were born and raised without a computer at home. Súmate responded to this situation by using free social media platforms and by connecting with students on their smartphones (more than 95% of students have a smartphone). Teams of teachers and other educators were mobilised to deliver support and content to students through suitable networks.

The second challenge was to provide social and emotional support to students remotely. Since bonding and emotional support are part of Súmate's strategies and have proved essential in keeping students on track, teams of teachers have had to imagine new ways to engage with students. An example of these strategies has been offering 24/7 contact with students through WhatsApp groups. Social workers monitor who responds to the group and follow up with those students who do not respond.

The third problem was reprioritising the curriculum and adjusting expectations to take into consideration how much academic instruction could be offered. Súmate prioritised social and emotional support over academic support. With few networks in place and little experience in providing emotional support virtually, Súmate has attempted to deliver academic content – a challenging task. Teachers specialised in different subjects worked together to switch from delivering subject-specific study workbooks to each student to interdisciplinary study workbooks that integrated different subjects.

## Mobilising and developing resources

Súmate's leadership team has given schools enough autonomy to develop their own solutions to these three challenges. The solutions that the staff thought worked the best are discussed below.

The foundation's operations division provided social and emotional support to school teams. These teams, in turn, have created a plan to support their students emotionally. The classroom teacher, a special education teacher, a psychologist or counsellor, a social worker, and the technical-pedagogical unit co-ordinator meet a week in advance to prepare for meetings with students through WhatsApp groups.

At the same time, educators worked together to create interdisciplinary academic work study guides because they realised that these were more engaging for students than creating separate subject study workbooks. Pictures of these guides were sent to students in the WhatsApp group and posted on Facebook and Instagram. Then using the same social networks, students submit their answers individually by taking a picture of the copybook where they solved the tasks assigned by the teachers. Students then submit their answers individually by taking a picture of the filled in study guide, using the same social networks.

The educational continuity strategy has focused on reading comprehension and skills, such as research and exploration. As students do not have computers or Internet access outside of social networks, they maintain ongoing communication with their teachers. Students ask their teachers to look up information on the Internet about the topics they are studying so they can complete the study guides. Similarly, teachers that have either the morning or afternoon shifts have video calls with eight students at a time on WhatsApp where students can report their progress.

During this process, teachers use an asset-based approach to teach, identifying what skills students have and engaging them through those. For instance, if a student cannot complete a study guide, but is skilled in creating PowerPoint presentations, they are invited to present a PowerPoint to the entire class, demonstrating their understanding of the subject they have studied.

## Fostering effective use and learning

Beyond the solution described above, the strategy also put the effective learning of students at its core through:

- Creating daily routines that include a morning greeting session with the entire student group. One of the educators starts the day by sending a message to greet the students and each student must reply. A social worker verifies which students respond and which do not.
- Being available for students at different times during the day. For teachers, this is good practice, as they can have different shifts during the day and must balance the tasks within the group.
- Ensuring that students bond with a community and not with a particular adult. Such a strategy promotes autonomy rather than dependence.
- Valuing the different ways in which students can demonstrate understanding: videos and audio recordings, photographs.

Within two weeks of the school closures and working remotely, the Ministry of Education moved up the winter break. In spite of this, teachers decided to continue working with students as a way to keep them engaged, initiating logic-based challenges. As a result, students took the lead and sent challenges to their peers and teachers in their WhatsApp groups. This exercise, during winter break, allowed students to demonstrate skills their teachers had not previously witnessed, such as:

- taking risks and demonstrating initiative in front of their peers
- being more available to provide feedback to their peers
- engaging with a learning community in an uninhibited and respectful way
- trusting their classmates.

As students took more responsibility for their learning, the teachers became guides and coaches, something which was new in the programme.

### Box 8.1. Engagement rubric (supporting students in their learning engagement)

- Students learn in different ways, and teachers are learning to value those differences ("We see that each student advances at their own pace and that requires that we, the teachers, learn too" said the pedagogical co-ordinator at one of the schools).
- Bonding and social and emotional development are integral to students' development.
- Young people can lead and do.
- Teachers are able to continue to support students in learning through remote models, something these teachers did not know.
- Teachers can collaborate virtually. (The school has experienced it.)
- Teachers have become more open to knowing more about other teachers in this virtual setting. There is a new sense of community among the adults in the school.

## Implementation challenges

Implementation challenges involved the entire school community. The main challenge for Súmate's leadership was to support educators virtually. A well-supported educator who can engage with their students is core to Súmate's educational approach, as teachers in these contexts feel powerless and distressed when confronted by their students' problems. In particular, during this time, there is concern for students who enrolled in Súmate this past March (more than 50% of the student body), as the first few weeks of face-to-face classes were insufficient to establish trust. Likewise, students' economic situation in the wake of the pandemic is distressing to teachers.

Teachers not only teach from their homes, but they also take care of children, sick relatives and household chores. They begin to get to know families personally who lost their jobs and fear for their job security. Teachers did not have the skills to provide lessons remotely and were suspicious of distance learning, although they were reassured about how much they could do remotely.

Students, on the other hand, are not receiving the protection generally provided by the school. For these students, school is a safe space. They appreciate and value the physical space and the structure that the community provides them. Many of them miss school and have increasing economic needs. In addition, there is a lack of Internet connection, which for the time being has been covered by free social networks provided by a public-private agreement.

Given Súmates' hierarchy of values, balancing social and emotional bonding with educational continuity has not been easy.

## Monitoring success

Súmate's leadership team asked the teachers at the beginning of the process to respond to a survey about communicating with students (e.g. students' devices, data plans, the type of communication and whether the students had received academic study guides/workbooks). With this information, both the leadership team and the school staff – understanding the main challenges – can focus on those students who require more attention.

The leadership team also surveyed the students asking about their satisfaction with the process. Most students responded that they value the process and the customisation it allows. They feel that they can continue their education and that their teachers are engaged and committed.

The most significant indicator of success will be that students return to school at the end of the pandemic – simply come back. So far, the educational continuity strategy has shown positive signs, as most students remain connected to their WhatsApp groups, a minimum standard of success. The hope is that students can participate much more actively and systematically in distance learning activities.

Súmate has continued supporting teachers directly by providing computers, Internet connection data plans and the Microsoft Education platform.

Another indicator of success is that no teacher refused to communicate with students during the mandatory winter break period. That is a reflection of the strong culture of teacher engagement in the school.

## Adaptability to new contexts

Nationally, this strategy can be useful for second chance schools as well as for schools working with highly vulnerable students. Countries that lack paid connectivity, online platforms and computers, and where the state does not have the resources or mandate to supply students with these kinds of resources can also benefit from it.

While the social and emotional component of education is essential to any real academic process, it is even more so in the case of those who work with students who suffer from the stigma and frustration at the levels of those who are cared for by Súmate. This strategy can serve foundations, schools and teachers who need to redouble efforts on the social and emotional aspect while continuing to teach traditional academic subjects.

### Box 8.2. Key points to keep in mind for a successful adaptation

1. Involve everyone in the process according to their skill set by creating a sense of urgency and explaining how these innovative actions allow us to deepen the foundation's mission, therefore contributing to the lives of young people.
2. Provide emotional support to school staff to support them in continuing to engage with the students.
3. Encourage collaboration among professionals, timely planning and peer support to balance the educators' personal lives with the demands of the young people they serve.
4. Identify the options for communication available to the youth the programme serves and support the adults in adjusting to those so that no student is left behind.
5. Encourage the team of educators to continue asking questions and showing interest on the details of this new way of educating and encourage exchanges with other colleagues.
6. Evaluate the process with students to decide what to keep and what to change.

# 9 Chile: Learning from radio

Tomas Recart, Founder and CEO, Enseña Chile

Francisca Chadwick, Teacher, Enseña Chile

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: non-governmental initiative and public-private partnership
Website: https://www.ensenachile.cl/lo-que-hacemos/laradioensena

## General description

Established in 2009, Enseña Chile (Teach for Chile) is a non-profit organisation with the mission of catalysing the hearts, minds and energy of prominent future leaders, as well as their communities, into a movement that will reimagine education and contribute to educational equity across the country. To achieve those goals, Enseña Chile develops a pipeline of people who work, for at least two years, as teachers in low-income communities. Enseña Chile is one of the 53 organisations that formed the Teach For All Network as of May 2020, and one of the 11 independent social enterprises that advance similar programmes in Latin America.

This case study exemplifies how Enseña Chile designed and rapidly scaled educational innovations that are responsive to emerging education needs, particularly among disadvantaged students. The solution described mainly focused on radio education.

Facing the COVID-19 crisis, the immediate response of the government and of most educational institutions, whether public or private, was to transition to online teaching, supplemented with printed materials in cases where connectivity and devices were not available.

Out of the approximately 12 000 schools and 3.6 million students in Chile, 3 000 schools and 200 000 students are in rural areas and face similar conditions to those where teachers of Enseña Chile educate 35 000 students. These students have limited access to the Internet and to digital devices.

In this context, when classes were suspended in Chile on 16 March 2020, Enseña Chile teachers were concerned about their students not being able to access educational content and about maintaining the relationships with them. Incoming teachers had only been in school a couple of weeks with their students, as the school year starts in the beginning of March in the southern hemisphere, yet it had been long enough to understand how essential relationships are for any learning process. Teachers in the second year of the programme had developed deeper relationships with their students, but the continuity of those relationships was a major concern. Enseña Chile teachers felt the responsibility of quickly developing a solution to address at least one of the many needs of their students.

A group of Enseña Chile teachers began "*La Radio Enseña"*, a 30-minute radio programme which delivers quality and entertaining educational content for students in secondary education. The programmes include lessons in history, maths, art, science and language (Spanish). The educational content is relevant for all students in the targeted age group, and, beyond the targeted students, any programme can be listened to by the rest of the family as they cook, work or engage in other activities.

All content was developed by Enseña Chile teachers, reviewed by staff members and adapted to podcast structures so lessons could fit in radio/audio channels.

What started with a group of 30 people, after about a month, evolved into more than 90 teachers, mentors and members of the foundation's staff joining efforts, in addition to the work they were already doing, to make every second of the programme something of value not only for their own students, but for every single student and family in Chile. Staff resources were equivalent to 20 full-time equivalent specialists: 12 in maths, 14 in science, 10 in language, 11 in art, 7 in history and 8 that would work with other programme staff. Editors, producers and directors joined after a couple of weeks to co-ordinate the work and ensure that technical standards were met.

With no formal structure, extra compensation or incentives, but mainly intrinsic motivation and purpose, this group of teachers, mentors and staff members started *La Radio Enseña* so that it could be broadcast on more than 240 frequencies across the country in the first 4 weeks of operation. The first programmes were made in three days, but as experience was gained, each programme's quality improves and takes 27 hours to produce.

## Main problems addressed

*La Radio Enseña* mainly tries to address three problems related to education continuity:

- Although it wasn't in the "radar" of Enseña Chile teachers, a significant amount of people willing to learn have no access to any platform under an "online learning" model, as they do not have access to the Internet or devices.
- The lack of capacity to absorb "online" education goes beyond connectivity and equipment. The level of autonomy and other competencies that students need to learn by themselves, let alone the amount of motivation to do so, is well above that of many students.
- The 4.9 million adults who have not finished secondary education, people with some disability and people in prison could also benefit from this solution, as there was no other easy alternative in a "social distancing" context.

## Mobilising and developing resources

The seed for this innovation came from the most unexpected resource. Teach For Nigeria, one of the 53 countries in the Teach For All network, had implemented some classes by radio, and this innovation was highlighted in the monthly bulletin of the international network.

One second-year teacher in Chile thought this was the most simple and straightforward way to address the Enseña Chile teachers' challenge and brought the idea to some of his friends in the programme.

In a couple of days, without any knowledge on how to develop a radio programme, or the technical assistance needed to produce a radio programme, a group of teachers and staff members of Enseña Chile started to write scripts to make students live out their best 30 minutes of the day.

The existing assets of *La Radio Enseña* were its people, its purpose-driven philosophy and its networks. What needed to be developed from scratch were the content of the educational programme and the technical skills relating to radio broadcasts.

The main resource that *La Radio Enseña* could mobilise was the team "behind the scenes" that started working on this project. This group had no knowledge of how to make a radio programme (dialogues, sounds, silences and interaction), but they had a clear and common vision of what the experience of a "dream class" would be for those students listening to the programme.

This common purpose in the team results from a combination of Enseña Chile's recruitment criteria, its training processes and its members' teaching experience. Enseña Chile selects around 6% of the applicants to the programme based on a blend of nine competencies and mindsets. It then provides its members training that develops different kinds of leadership skills centred on a vision for students' learning in class. The development of character, academic achievement and a commitment to the community are the three dimensions to be developed in each class. Enseña Chile calls this the "dream class". Every student should be able to explain the purpose of the lesson (i.e. how it connects with their future), to demonstrate what they are learning, where they take responsibility and agency for their learning and class work, and where they experience joy in their learning.

So when the idea of developing radio lessons was proposed by a member, the organisation to support this work evolved organically, but was driven by Enseña Chile's philosophy. The team included teachers, coaches (or reviewers), three people from the Communication Department, and people from several networks connected to the foundation. One of them, perhaps the most productive in terms of increasing the reach of the programme, was the Association of Radio Broadcasters (Asociación de Radiodifusores de Chile), which disseminated the programme almost immediately to 1 200 radios across the country. Around 95 radio stations subscribed and transmitted the programme as a response to this first call for diffusion. This collaboration is an example of how productive partnerships can be. With the goal of being of the greatest possible service to students, all organisations did what they could to increase the impact and reach of *La Radio Enseña*.

Making traditional radios include *La Radio Enseña* in their broadcast was a key step in increasing the reach to students. A key area of success was that in addition to asking the Association of Radio Broadcasters to "spread out the word" with the 1 200 radios where they had potential outreach, teachers from Enseña Chile reached out to local radios where they were teaching and contacted local broadcasters to benefit their own communities. As a result, after the second week, *La Radio Enseña* was being broadcast over 150 frequencies all throughout Chile.

The positive reception of the first programmes made the *La Radio Enseña* team understand the potential of the project and in no time they were learning to develop better scripts and about podcasts, broadcasting and editing techniques, and customer relationship management, etc.

The success of the programme was much greater than initially expected, which increased the need for more technical skills for producing radio programmes that met the quality requirements of some of the radio stations interested in the broadcasts. Resources were gathered to hire a sound editor and a producer to co-ordinate the production team, the radio broadcasts and the schools that were potential candidates to use this new tool.

## Fostering effective use and learning

The student experience with the programme involves listening to a broadcast, engaging with questions asked by the broadcasters, writing down some key concepts of the topic, and following the suggestions of learning interactions with their family members.

The process is quite straightforward because the broadcasters ask direct questions, provide time to answer them, suggest when to write down relevant information and how to interact with the people around them. Then, if they want to exchange ideas or interact with *La Radio Enseña*, the only way is through an Instagram account, an alternative only available to some students.

The programme is designed differently from a regular class, but has the same expected learning goals of a "dream class". To achieve these goals, Enseña Chile teachers working at *La Radio Enseña* are monitored by the Enseña Chile coaches who normally support them. Feedback is given at every step of the process (writing and recording), which creates a culture of continuous improvement. Every programme is "certified" as a "dream class".

## Implementation challenges

Since programmes were being broadcast every weekday, from Monday to Friday, the production pace was a significant initial challenge in itself. To address this need, additional members of Enseña Chile were asked to join *La Radio Enseña*. After 4 weeks, more than 80 teachers were working together and many members of the foundation's staff willingly work providing support.

The student-teacher interaction was another challenge. Programmes were recorded prior to the date of broadcast, so real-time interaction with students was limited or even null. To tackle this issue, social networks were used to foster live interaction between teachers and students. Questions were asked during the programmes and students could share their answers using Instagram (if they had access), and different materials were shared on *La Radio Enseña's* Instagram profile to allow for interactions with students. Some programmes included experiments that students could develop at home then share the outcome through their social network. Since a lot of students do not have an Internet connection and no access to online social networks, maintaining contact with them remained extremely difficult and one of the biggest challenges.

## Monitoring success

While *La Radio Enseña's* strategy team was keen to know how many students were listening to the radio podcasts, there are no rating data for radio in Chile. The only information that could be collected was how many radios were broadcasting the programme and the potential amount of people that could listen to it. Only an expensive market study would have allowed these data to be obtained.

- One very important indicator for the team was the geographical outreach of the programme: after four weeks of broadcasting, every large geopolitical dependency in Chile, and around 70% of small ones, had at least one radio station broadcasting the podcasts.

- The number of different frequencies transmitting was also relevant: *La Radio Enseña* was broadcast by over 240 frequencies 4 weeks after its launch. The number of weeks every frequency transmitted the programme was also monitored.

*La Radio Enseña* also established an Instagram account to stimulate interactions with students before and after each programme. It tracked the number of followers, users per day and engagement (rate of interactions per publication). In addition, *La Radio Enseña* started to track the reproductions of its resources on Anchor and Spotify, where the podcasts were also present from the second week of airing.

The biggest challenge was to estimate the number of students listening to the programme, their satisfaction with it and what they are learning. The plan is to collect information through surveys and/or focus groups (when possible).

## Adaptability to new contexts

The approach followed by *La Radio Enseña* is transferable to other contexts with radio networks or even other digital channels (TV, Internet or other social media). Since its aim was to deliver high-quality education to all students in Chile, using broadcast media such as the radio appeared to be the best opportunity, especially for people without Internet access. But this was considered a starting point only. The team's view is that "the sky is the limit".

During the COVID-19 confinement (or other restrictions), broadcast media can provide a valuable community service for countries at similar or lower levels of development as Chile. *La Radio Enseña* served as an opportunity for private radio stations to serve the country in the context of a pandemic, but the project had such an impact that after three weeks, the idea that *La Radio Enseña* should be sustained and even grow after the COVID-19 pandemic was unanimous.

Since the format consists of a pre-recorded podcast sent to radio stations, it allows for quick and easy scalability. *La Radio Enseña* began broadcasting on 4 radio stations the first week, and a month later it was being broadcast on 240 radio frequencies, all transmitting the same podcasts. As of June 2020, the Ministry of Education was considering expanding the programme to the whole country.

Another path to scalability was achieved by sharing the scripts and/or the programme with other members of the Teach For All network. Panama was the first to adopt it and a sharing process of the podcast contents and productions started from the very beginning.

### Box 9.1. Key points to keep in mind for a successful adaptation

1. Have a clear purpose. This should build on the sense of urgency created by the crisis, a sense of responsibility but also a sense of feasibility.
2. Engage with people from the community. All members of the different communities play an important role in reaching every student with radio programmes.
3. Do quality checks. This includes quality controls of the podcasts by coaches regarding the script writing, and, after recording and editing, checks on the audio quality.
4. Encourage continuous learning. When most teachers and coaches work with a radio format for the first time, learning the techniques and script writing for the radio are key elements for delivering effective podcasts. There should be a continuous reflection about this.
5. Have an agile and collective leadership. Some quick decisions are needed to ensure education continuity and reach as many students as possible. A collective, distributed leadership can be very beneficial.
6. Externalise areas where experience and/or knowledge are lacking.
7. Have a “Minimum Viable Product Approach”, establishing a strategy for one to three phases during the COVID crisis then a post-COVID phase.

# 10 Colombia: Educational Alliance

Pablo Jaramillo, CEO, Alianza Educativa

Tatiana Forero, Innovation Advisor, Alianza Educativa

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: non-governmental, public-private partnership
Website: https://www.alianzaeducativa.edu.co

## General description

Alianza Educativa (AE) is a non-profit organisation established in 2000 by four leading private educational ² institutions in Colombia to contribute to the transformation of education in the country, and in particular to close equity gaps in education. AE currently manages 11 charter schools in some of Bogota's most vulnerable communities. Its 11 000 students face social and emotional risks such as poverty, violence, micro-trafficking and teenage pregnancy.

On 16 March 2020, the Colombian government announced that all schools would be closed as part of the efforts to contain the COVID-19 pandemic. In response, AE organised a comprehensive strategy for education continuity: "Learning from Home" (Aprender en Casa), a strategy to provide distance education services to its students within the guidelines of curricular flexibility set out by the Ministry of National Education.

With this strategy, AE not only responded to the technical challenges involved in ensuring educational continuity, but also focused on the adaptive challenges brought about by the new reality of teaching with physical distancing requirements, through capacity building and shifting mindsets and beliefs.

## Main problems addressed

AE has faced several challenges of a technical nature, widely documented and shared by most public educational institutions, including:

- printing and distributing guides for academic work at home
- reaching students who do not have Internet
- technological and digital challenges for teachers
- difficulty in talking to students and families who are isolated.

Those challenges are hard to tackle, but since the solutions are technical, they simply require logistical organisation and financial resources to provide solutions that are known to address them.

In addition to working on those challenges, AE has addressed several adaptive challenges, for which there are no easy solutions, as they require changes in behaviour and mindset. They involve focusing on the development of capacities and skills beyond technical expertise: for example, setting up a new co-ordination mechanism for fast and effective decision making, finding new ways to organise work, rethinking the pedagogical model to learning from home, or transforming one's vision of the classroom.

## Mobilising and developing resources

In a short period of time, AE set up the Learning at Home strategy, designed to respond flexibly to the context of each student. Using various resources, AE quickly addressed the technical challenges by deploying this strategy in three phases:

1. Phase 1. During the first four weeks, all students received printed academic workbooks and materials. They were also made available on the organisation's website. More than 500 teachers were mobilised to design and develop them. During this phase, a key objective was to contact all students and follow up on their emotional well-being.
2. Phase 2. From the fifth week onwards, the learning objectives became the main focus. Instruction advanced with a combination of individual student work activities and synchronous online sessions. Mechanisms for contacting and following up with students were improved, and evidence of academic work began to be collected to provide students with feedback (and to create a feedback loop for the programme). A team of AE psychologists also improved its support for students with high psychosocial and emotional risks.
3. Phase 3. From the seventh week on, additional adjustments were made. All schools benefited from the same learning management system to host the synchronous sessions and content, the multimedia material for asynchronous sessions, and the links for surveys and student reports. The study schedule included more time for socio-emotional learning, and new sessions were created with activities for students and families. The institutional evaluation system was also adjusted, reorganising academic periods and defining guidelines with different options to help students get back on track if, due to problems of access during quarantine, they could not study for some time.

## Fostering effective use and learning

AE established an adaptive capacity to foster effective learning.

First, working groups of teachers, co-ordinators and principals were set up to encourage collaboration and ensure the quality of the academic materials.

Second, another group reviewed the pedagogical model so it could be adjusted to learning from home. For example, the role of interactions in the learning process, as well as the models for formative assessment and feedback to students were reviewed to make them more effective.

Third, a special group worked on adjusting the weekly schedules and time allocation for each subject. This was one of the biggest challenges, because it meant giving up significant academic time in basic areas such as mathematics, Spanish and science and opening up more space to support socio-emotional, family and well-being development.

Fourth, all teachers were given the freedom to try out different tools and strategies for creating content and for conducting synchronous and asynchronous sessions with students during the first few weeks. This was critical for encouraging large-scale innovation and for quickly finding the best ways to drive learning in these circumstances. Best practices were identified and mainstreamed to the other schools and teachers.

Fifth, the institutional evaluation system to assess student work was adjusted to take each student's specific situation into account. To this end, the evaluation criteria were made more flexible. Students who were unable to do their academic work or who did it unsatisfactorily have the possibility to make up for it when they return to in-person learning.

## Implementation challenges

AE had to work on adaptive capabilities related to operation and management as well:

- ***Centralised decision making.*** A unified command post was created with all the management team and the principals of the 11 schools, who met initially daily, then twice a week, to follow up on indicators, review progress, identify problems and take decisions. This involved a new way of working in a co-ordinated manner. Albeit very time-consuming, this was key to ensuring a rapid and consistent response across all schools.
- ***Informed decision making.*** Information was collected on a weekly basis from students, families and teachers. Surveys were designed to understand the behaviour of the different interest groups week by week, validate hypotheses underlying the strategy and identify problems almost in real time. For example, the results of these surveys led to the adjustment of time schedules, to the change of student reporting thanks to parents' feedback, and to decisions about virtual activities based on the percentage of students and teachers with limited connectivity.
- ***Effective communication.*** In a community with 11 000 students, 700 employees and many partners, good communication is essential to ensure that decisions are well understood and correctly implemented. To this end, new communication channels were created to share the daily and weekly decisions of the unified command post.

## Monitoring success

In each phase, key performance indicators were monitored according to changing priorities. For example, during the first weeks, the emphasis was on indicators such as the number of students not contacted and the percentage of students without a computer or Internet access. The first stage of this strategy reduced the number of non-contacted students at high risk of dropping out of school from 400 to 8. This was achieved by activating networks of families, neighbours and community boards when teachers were unable to locate students.

In the second phase, each student's academic work was monitored, with weekly collection of data such as attendance of virtual sessions and delivery of academic work. Psychosocial follow-up was also strengthened to reinforce the accompaniment of students with emotional problems.

During the third phase, the focus on students with low academic performance and learning problems was strengthened, based on the assessments made by their teachers.

## Adaptability to new contexts

Alianza Educativa's Learn at Home strategy responds to the challenges of ensuring education continuity for students in vulnerable contexts and with limited Internet access. The challenges are similar to those faced by many educational institutions in other parts of the world.

Technical solutions to these challenges include the development and printing of physical guides for students without Internet, access to synchronous and asynchronous sessions, and flexible and tailored assessment giving students the opportunity to progress at their own pace and according to their specific situation. This has been supported by teacher training and the activation of technological tools for online learning.

Nonetheless, the most complex part of the work related to the development of capacities to respond to the adaptive challenges, such as the fine-tuning of the pedagogical model in the new reality of remote and home learning, the way of working and communicating with the members of the community, and the redefinition of learning objectives given the new priorities and limitations.

This experience is scalable and replicable. Each institution needs to examine its own technical and adaptive challenges and design mechanisms to build capacities to overcome them.

### Box 10.1.Key points to keep in mind for a successful adaptation

1. Designate a central control station or steering committee that meets periodically (at least once a week) to define priorities and next steps and take action.
2. Prioritise the learning objectives that students will be expected to achieve given the disruptions caused by the health crisis and the available resources and capabilities.
3. Provide guidelines for teachers to design the new learning materials and study worksheets that will help students achieve those objectives.
4. Organise schedules for both students and teachers, taking into consideration the necessary time to check in with every student, whether on line or by phone.
5. Select the virtual platforms to be used for online learning. It is important to take account of the opinions of students and teachers, as they will be the end users.
6. Create a mechanism of daily monitoring to keep track of students' attendance, academic progress, health and psychosocial risks, and emotional well-being.
7. Analyse data compiled by each school every week to identify challenges that need to be addressed by specific support teams (psychology, technology, etc.).
8. Develop a communications plan to provide families with tips and information on how to best support their children. Use different channels like the institutional web page, social media, email and text messages to ensure greater coverage.

# 11 Colombia: To turn on the wave

Margarita Saenz, CEO, Enseña por Colombia

Ana Medina, Head of Programme, Enseña por Colombia

Barbara Uribe Holguin, teacher, Enseña por Colombia

Type of intervention: non-governmental organisation
Website: Instagram: @aprenderlaonda | Facebook: @aprender la onda | Spotify: A prender la Onda

## General description

A prender la Onda (ALO) is an initiative led by a group of Enseña por Colombia's (Teach for Colombia) fellows, alumni and other teachers with the aim of continuing to support students' learning during the COVID-19 crisis. Enseña por Colombia is a non-profit organisation that is part of the Teach For All global network. Its purpose is to develop leadership and learning in children and youth in Colombia to help them shape their future and the future of their communities. Enseña por Colombia currently has 98 fellows teaching in 48 schools in 5 main regions and cities of Colombia: Bogota, Medellin, Urabá Antioqueño, and the Caribbean and Pacific coasts. Fellows teach at both peri-urban and rural schools in these regions.

ALO designs, records and distributes learning audio podcasts through WhatsApp, local radio stations and other streaming platforms. It has produced 9 seasons and 72 episodes that are broadcast on 30 radio stations, covering more than 40 municipalities in the country. The episodes are designed and recorded by teachers for other teachers, students and their families. They reach students through a number of different channels: local radio stations, WhatsApp (through their parents' or their own smartphones), community loudspeakers and digital platforms. The episodes are ten minutes long on average and follow a basic structure: an introduction, the learning objective and core content, an activity that brings the learning

objective to life and connects the listener with the core content, and a conclusion. ALO is one among many initiatives that Enseña por Colombia is implementing to support communities during the COVID-19 crisis.

ALO began producing episodes three weeks after classes were suspended in Colombia and was inspired and motivated by three factors:

1. The lack of infrastructure and connectivity for continued education during the pandemic. The restrictions on movement caused by the COVID-19 crisis aggravated the academic achievement gap between low-income students, often from rural areas without an Internet connection, and those who can afford access to the Internet. In addition, many children faced mental health difficulties as a result of coping with isolation. In the quest to identify quick but effective solutions, Enseña por Colombia's teachers realised that many of their students have access to community radio stations and WhatsApp.
2. The history in Colombia of radio stations facilitating access to education in times of hardship over many generations. A notable example is Radio Sutatenza, a community radio station that broadcast programmes that aimed to tackle rural illiteracy through cultural and educational programmes between 1947 and 1994.
3. The opportunity to broadcast a high-quality audiobook that had already been recorded by Click Arte, an educational editorial agency and partner of Enseña por Colombia. This educational content gave the ALO team a starting point around which to build the radio programme.

ALO is innovative because of seven main features: 1) it is a grassroots solution 100% led by teachers; 2) students are involved directly in the production process; 3) it uses existing resources and skills; 4) it was rolled out and scaled quickly; 5) it operates beyond the geographical and institutional scope of the participating teachers; 6) it uses and combines different technologies; and 7) it uses both old and new content.

## Main problems addressed

***Lack of connectivity, in both peri-urban and rural areas.*** The reasons many students cannot access the Internet are: there are rural areas where there is no Internet connectivity, if family income decreased severely they no longer prioritise having a data plan; or some families do not have laptops, tablets or smartphones. Hence, ALO offers content through radio broadcasts, and connects with students and their families through WhatsApp to follow up on the radio shows and exchange and correct homework.

***Potential loss of student motivation and engagement.*** Some students felt they were not learning during the COVID-19 pandemic and might fail the academic year. They said they would prefer to repeat the year. ALO aimed to address this issue by increasing contact with teachers, who can provide the connection that students need to stay engaged with their schoolwork.

***Helping parents support their children's learning process.*** Many students that ALO caters to are the first in their immediate family to attend school, so their parents may be poorly equipped to support their children's learning, having not attended school themselves. In addition, many students have not yet developed the skills to be independent learners and organise their time, which can cause them to fall behind. The structure of the radio shows aids students with this issue, as it is easy to follow, with a single objective and an engagement activity that brings the lesson to life. Moreover, contact with teachers through WhatsApp allows them to support both the parents and the children in their learning journeys.

## Mobilising and developing resources

ALO relied on various resources to roll out and scale quickly:

- ***Human resources.*** One of the main features of ALO is that it is led 100% by teachers, and also that students are involved in the production process. Thirty-four Enseña por Colombia fellows and alumni expressed interest in joining the initiative in a matter of days and went through a rigorous recruitment and selection process that evaluated their academic and leadership skills. They received training on pedagogy, leadership and social justice. Most of them were between 22 and 30 years old and had no previous experience in radio or recording podcasts, but their digital skills allowed them to learn quickly. With no specific support from the organisation, they organised themselves and co-ordinated the work. They had a high sense of urgency and motivation, and thus dedicated many hours to the project. As they are teachers, they were able to test the episodes directly with their students and iterate. Some Enseña por Colombia alumni who joined the ALO team were also part of Cuenteach, an initiative of Teach For All alumni that had been recording podcasts for the past two years to support teachers in Latin America and Spain. They brought specific technical expertise that was fundamental for the project. As a grassroots initiative led by teachers, ALO has fostered a network to help each other reach students in difficult times. The group has 30 permanent members.
- ***Personal technology devices.*** ALO used the personal devices (computers and smartphones) and Wi-Fi access of the individual teachers.
- ***Existing educational materials.*** For the first seasons, ALO used existing educational materials from various organisations such as La Aldea, Secretos para Contar and Ápite Editorial, among others. Enseña por Colombia had previous partnerships with these organisations, so it was easy to ask for permission to use the materials. ALO used audiobooks and other methods published by these organisations to create ten-minute episodes. For example, the book *Historias y Lugares* of Secretos para Contar enabled ALO to adapt the written content to audio and create a season about the importance of taking care of Colombia's fauna and flora. From season 4, ALO started to create new content, building on existing projects that aim to develop skills that are relevant for students. For example, "Poderosas" is a sexual education project that provides a safe space where girls and women can talk about taboo subjects in their communities. ALO partnered with "Poderosas" to create a radio soap opera to talk about sexuality, sexual and reproductive rights, and menstrual health and care, in family-friendly terms.
- ***Existing social connections also helped to scale the programme.*** Once they had the first episodes produced, ALO teachers started to reach out to other teachers and organisations that work in municipalities where Enseña por Colombia is not currently working, for example in Nariño-Antioquia, Arauquita-Arauca and Cúcuta-Norte de Santander.

ALO did not need additional resources to roll out and grow. It was thus able to start producing episodes very quickly. The size of the team has allowed them to produce one episode per day since 20 April 2020. However, ALO also needed to develop some new features:

- ***Training teachers to design, produce and edit podcasts.*** Training was provided by Cuenteach and had two main components: the editing process and the script writing process. Cuenteach gave important tips to ALO and offered two two-hour online courses via Zoom.
- ***Training students and teachers as broadcasters.*** Once teachers had learnt how to broadcast and record, they had to train students and other teachers. So far, 6 students and 27 other teachers, that are not part of ALO, have participated as broadcasters. Additionally, 15 students from all over the country have applied to be new members of the team of broadcasters.

- ***Developing a flexible curriculum for each season and design plans for each episode.*** The ALO team develops a flexible curriculum for each season and plans every episode as they would plan a lesson. Once the lesson plan has been completed, the ALO team adapts the plan into a script.
- ***Building new partnerships, especially with local radio stations.*** The ALO team had to build partnerships with organisations that own some of the pedagogical material or that designed specific material for ALO. They also had to build partnerships with local radio stations.
- ***Collecting WhatsApp contact information of students and their family members.*** Before the COVID-19 outbreak, teachers had WhatsApp contact information of only some students and families. To be able to share ALO episodes through WhatsApp, teachers had to extend this to all students and families.
- ***Creating structure and flow for the ALO team.*** With a team of 30 members and a lot of work to complete, the ALO team had to create a work structure and workflow that would guarantee an episode could be broadcast every day from April onwards. The team was organised into three groups: 1) social media and brand; 2) curriculum and research; and 3) administration. In addition, four groups run the production and are in charge of: 1) script; 2) recording; 3) mock-ups; and 4) editing. These four groups are divided into five smaller teams, one for each day of the week.
- ***Creating ALO accounts on social media*** such as Facebook and Instagram to share information and content and to position the ALO brand with students, families, partners and the broader public.
- ***Using Spotify as a platform for sharing content on line.*** This streaming platform allows the team to share the episodes with members of the Teach For All network, possible donors and the broader public.

## Fostering effective use and learning

Teachers use ALO episodes as part of their distance learning strategy to support students and families during the COVID-19 pandemic. Carefully selected and trained teachers are directly involved in developing the materials to ensure they are usable by teachers and pedagogically appropriate. Involved teachers combine technologies to work with their students. For example, students listen to the programme on the radio and discuss the episode using WhatsApp with their teachers, and send their completed activity as a photo via WhatsApp to their teachers. The teachers evaluate the students' work and give feedback through WhatsApp. The ALO team also sends images to teachers and students daily through WhatsApp, Facebook and Instagram to motivate and enhance the learning experience. This combination of technologies and communication channels better allows teachers to support students.

Students participate in two ways. First, a group of six students are part of the ALO team as broadcasters. The ALO team is designing a broader plan to encourage their participation and ensure that the experience helps them develop relevant skills and mindsets, with the goal of engaging 20 students by December 2020. Second, students listen to the daily episodes and work on the learning challenges set. Each challenge takes one to two hours per day. The episodes are targeted to all ages. Some activities are more challenging than others, but the goal is to capture students' attention and promote learning for every member of the family, understanding that parents' educational background may be basic. Each episode is transmitted twice, in the morning and afternoon, enabling students to revisit the lesson or catch up if they could not listen to the morning programme.

As a result of feedback from students and other teachers, the ALO team realised the importance of planning a curriculum for each season of episodes, according to the Ministry of Education's guidelines and the need to organise each week of episodes as a graduated and flexible learning process. To achieve these goals, ALO created a team to focus on curriculum and research. Moreover, ALO discovered that it

was better to propose only one activity or challenge per episode to have more time to explain the instructions and improve understanding.

## Implementation challenges

- ***Technical expertise, time management and sustainability.*** The first challenge was to learn how to make podcasts with no previous technical knowledge in script writing, recording, editing, etc. A second challenge was to combine ALO responsibilities with a higher teaching workload during the COVID-19 crisis. Although school leaders support ALO, it was difficult to get them to allow teachers to work on ALO during regular work hours. Therefore, the production of each episode is finished just a day before it airs. A team of 7 teachers spends on average 12 hours to produce one episode. In recent weeks, teachers have expressed their concerns regarding the time pressure this involves. Some of them feel exhausted and do not think they will be able to continue participating fully in ALO once students go back to school. The ALO team has tried different solutions to deal with these challenges. For example, they divided the team by function (script writing, recording, editing) and this specialisation helped to train a smaller group of teachers in each task. Another solution was to get *pro bono* help from a professional editor so teachers in the editing team can support their peers in other tasks. Fundraising efforts will focus on hiring an editor in the near future.
- ***Clarity regarding copyright and intellectual property.*** The ALO team uses educational material from ten partners that authorise its use. However, after several episodes were produced, one partner expressed its concern regarding the limits of use in its authorisation. Due to this concern, Enseña por Colombia and the ALO team had to seek advice from a copyright and intellectual property lawyer and sign agreements with partners that more clearly specify the limits of use in terms of territory and time. Moreover, agreements with local radio stations and other organisations that are broadcasting the episodes also had to be drafted.
- ***Building trust and negotiating fees with local radio stations.*** After discussions with the first radio station, ALO realised that episodes needed to be short (ten minutes maximum) so that radio stations would agree to broadcast them for free. Additionally, during the second week that ALO was on air, one of the radio stations said that they would start charging a fee after seeing ALO on the national news. Community-based radio stations have very few funding mechanisms and the pandemic has affected them severely. With the help of school and community leaders, the ALO team talked with the radio station and managed to secure the broadcasting for free, arguing it is a non-profit activity.
- ***Engaging students as broadcasters.*** One of the innovative features of ALO is that it involves students as broadcasters. However, some of the students did not have a sufficient mobile signal or electricity to record the episodes. This has delayed the production process. To solve this problem, ALO is fundraising to buy data plans for the students.
- ***Access to radios, sound systems and speakers at home.*** Lastly, access to radio is higher in Colombia than access to Internet. In fact, 63% of middle school students do not have Internet access. However, many students do not have radios at home to listen to the programme. The fundraising efforts also focus on buying sound systems and speakers that can be used in open community spaces. The alternate solution so far has been to share episodes through WhatsApp.

## Monitoring success

- A first measure of success is the scope of production and broadcasting. ALO has already produced more than 50 episodes that air on a daily basis, several times a day.

- The reach of the broadcasts is a second measure of success. Each episode is broadcast on 28 community radio stations in 9 departments of Colombia (the signal of these stations reaches more than 100 municipalities), 6 online radio stations and on Spotify. The episodes are also shared with different community leaders, organisations and teachers through WhatsApp and are used as a distance learning strategy in 14 schools. ALO estimates that the episodes are reaching 500 or more students a day.
- In terms of monitoring, ALO is trying to calculate the reach of the radio broadcasts, which is difficult in Colombia since radio stations do not collect such metrics themselves. However, the ALO team is gathering information to enable them to estimate the geographical reach of the radio stations, for example by utilising information from schools and teachers from those regions.
- Another means of monitoring is through user feedback. Every episode has a contact phone number to receive feedback from students and teachers from outside the Enseña por Colombia network. This information has allowed ALO to identify that 14 schools are using the episodes as part of their distance learning strategy, 8 of which are schools that are not partners of Enseña por Colombia. Also, the teachers of the ALO team that use the episode as part of their distance education have received direct feedback and responses from their students.

## Adaptability to new contexts

ALO can be adapted and implemented to other contexts as a scalable initiative. In 11 weeks, it has scaled from 1 radio station to 30, 3 local foundations and allies that play episodes over community speakers, and 2 streaming channels. It expects to grow to a minimum of ten new radio stations and six local foundations and allies by the end of 2020.

ALO connects learning to students' homes. It intends to sustain this initiative after the COVID-19 pandemic subsides because the crisis has made evident the need to strengthen the relationship between school (learning) and home (families). Testimonies from several families suggest that ALO broadcasts engage the whole family in fun and effective learning activities.

### Box 11.1. Key points to keep in mind for a successful adaptation

1. Build a team of teachers who are motivated, committed and willing to learn to run the project.
2. Engage students and other teachers as broadcasters so the content is more relevant for families.
3. Provide basic technology to teachers and students involved in producing programmes (laptops and Wi-Fi).
4. Give teachers and student broadcasters basic training on script writing, recording and editing podcasts.
5. Search for and use existing materials that address topics that are relevant for students. Using existing materials in the first instance helps to roll out and scale quickly. Sign copyright and intellectual property agreements from day one. Producing tailored content can come at a later stage of the process.
6. Design a work structure and workflow that help reduce the workload for teachers.
7. Partner with local radio stations.
8. Obtain contact information from parents and students with smartphones to distribute through WhatsApp.

## Acknowledgements

The authors want to thank all individuals and organisations that make A prender la Onda possible:

- the ALO team
- its pedagogical partners so far: Secretos para Contar, Ápite Editorial, Radio Pirata, Poderosas, Fundación Cartograma, Las Reims, Liliana Giraldo, Fundación Tortugas, Paula Alvarez, German Izquierdo and Mary Grueso Romero
- radio stations
- Go to Producciones
- broadcasters (students and teachers)
- teachers that use ALO.

# 12 Colombia: Learning at home

Mariana Sanz de Santamaria, Consultant, Municipal Secretary of Education of Bogota

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: local government (Secretary of Education of Bogota, Colombia)
Website: https://www.redacademica.edu.co/estrategias/aprende-en-casa

## General description

Bogota has the largest school system in Colombia and its teachers' payroll is the second largest for public entities in the country. Bogota has a population of 7 743 955, and a total of 2 190 public and private schools. The Secretary of Education of Bogota is in charge of 399 schools, which represent 743 562 students and 34 764 teachers distributed in 20 districts, 2 of which are rural. Official enrolment records for 2020 indicate that 87.8% of students belong to the most vulnerable socio-economic groups and 50.2% of these students belong to the poorest families. In addition, a considerable number of students in Bogota belong to minority communities that are in even more vulnerable conditions, such as victims of the armed conflict (70 659 students, or 8.9% of all students enrolled), various ethnic groups (8 710 students, or 1.2% of all students enrolled), migrants from the Bolivarian Republic of Venezuela (36 107 students, or 5.2% of all students enrolled) and students with disabilities (20 112, or 2.5% of all students enrolled). Every public school student receives free transportation and at least one meal and is exempt from tuition fees. These characteristics of the student population made the continuity of education during the COVID-19 public health crisis a difficult challenge for the governmental entities in charge.

On 17 March 2020, the president of Colombia declared a national public health emergency. The mayor of Bogota, Claudia Lopez, was the first to mandate quarantine measures for the whole population, resulting in school closures. The Ministry of National Education's response to the public health emergency was to suspend all national school attendance, declaring early school vacation from 16 March to 19 April. In

contrast to the ministry's approach, the Municipal Secretary of Education of Bogota did not bring forward the school vacation, but instead, decided to implement a strategy of educational continuity "Aprende en Casa" (AeC) (Learn at Home).

The AeC strategy comprises five components:

1. The creation of a web portal with curated education resources to support learning at home. This site (Edusitio) includes over 600 resources, such as class videos for all subjects and grades, webinars, social media interactions and resources for reading aloud with "BlibioRed en Mi Casa," a project in association with the Ministry of Culture.
2. Educational television and radio programmes which are broadcast twice a day on national TV channels and radio stations with content for all ages and subjects.
3. Aprende en Casa Toca Tu Puerta, which distributes printed educational materials for homes with no Internet access, including books, worksheets, games, and brochures for games and activities and a "Kit en Casa", which includes science study guides, games and family activities for preschool and primary students.
4. Programa de Alimentación Escolar en Casa, which offers school meals distributed to each house through different strategies.
5. "Mesas de Apoyo Técnico y Pedagógico," support offices available from 7 a.m. to 4 p.m. for the entire education community looking for advice on technological or pedagogical issues.

These activities are designed to continue education and support homes in Bogota as they become spaces for learning, co-responsibility, autonomy, self-care and protection, reinforced by diverse pedagogical measures and guidelines established by the different educational institutions and the secretary's outlines. The AeC strategy was the first educational continuity initiative in the country. It was designed and implemented primarily by the Undersecretary of Quality and Relevance in the Municipal Ministry of Education (SED) with support from other units. They were able to respond in record time for the continuity of education in the city of Bogota and that response served as an example for the rest of the country.

Since then, the strategy has evolved in response to the different challenges and necessities for the continuation of education in the city.

As a first response, the SED quickly convened a series of meetings with representatives of public and private school principals and teachers, and with local education directors, to discuss the best possible measures that should be taken by the education sector as a response to the public health crisis. Those various meetings and discussions shaped Aprende en Casa as a strategy – not to adapt the educational system, but as a transformation that relies on the continuity of the learning process and students' development at home, with the guardians/parents as the main mediators with ongoing communication with their teachers. This strategy aims to support learning for every actor of the educational community, not only the students, but their families, teachers, principals and administrative school staff. Given the highly innovative nature of the strategy, it uses constant feedback for continuous adjustment. Various meetings with the key members of the education community have been taking place since its implementation on 15 March. These adjustments represent three main phases of the implementation of the strategy.

### *Phase 1: Emergency response (15-19 March)*

The Aprende en Casa strategy was officially launched on 15 March with Circular 005[9] (Care and Protection Guidelines for Students during the COVID-19 pandemic through the Aprende en Casa strategy). It mainly focused on the deployment of virtual tools to support online learning.

#### *Digital resources for online learning*

The existent website "Portal Educativo Red Académica" was underutilised. It was restructured – it already contained more than 600 resources – and was enriched with additional guidelines and flexible curriculum strategies mainly for the teachers to use. A group of pedagogical specialists along with teachers and the secretary's staff designed and created more resources and updated its content. An editorial committee was created in partnership with the Institute for Educational Research and Pedagogical Development, which met twice a week, organised the content by topic and used a common language for all resources on the site.

The Ministry of National Education then relaunched the webpage "Aprender Digital" that grouped together different partner entities, and the web portal "Colombia Aprende", already in use, and organised the resources into nine areas: 1) natural sciences and environmental education; 2) social studies, history, geography, political constitution and democracy; 3) 21st century skills; 4) physical education, recreation and sports; 5) ethics and life skills; 6) humanities, Spanish and foreign languages; 7) mathematics; 8) STEM+A; and 9) technology and informatics.

#### *School nutrition*

Simultaneously, the School Nutrition Programme (Programa de Alimentación Escolar) had to be modified and adapted to guarantee each student's meal. For most public school students, the school meal is an essential one in their day. Thanks to a significant redesign effort to align delivery and public health measures, and renegotiate contracts and conditions in record time to carry out a first distribution through the education institutions before the nationwide quarantine was imposed, 646 832 nutritional supplements were given to 187 000 students, 161 708 students received school meals and 25 383 food kits for preparation at home were handed out to each family directly by each educational institution.

### *Phase 2: A new education dynamic (19 March-3 April)*

After multiple meetings and discussions with teachers and principals, and an analysis of visits to the websites and comments by users, it was decided that the strategy had to become a flexible school strategy, not just a curriculum strategy, that brought the entire education community together to transform school practices, making the home the new learning space. This new learning space is a specific environment, but the aim was not to reproduce the school at home. The website offers tailored content for five groups of users: 1) teachers; 2) students; 3) guardians or parents; 4) principals; 5) counsellors.

#### *TV and radio education*

In response to the city's Internet access gap and the lack of technology in many students' homes, the SED rapidly designed and implemented a wider spectrum of education delivery channels which included TV programmes, radio and the use of social media. This last resource is accessible for those that do not have

9 "Orientaciones de cuidado y protección de los estudiantes frente al Covid-19 a través de la estrategia 'Aprende En Casa'". And two days later on 17 March, Circular 006 2020: Lineamientos para la continuidad en la prestación del servicio educativo en la modalidad no presencial, en el marco de las orientaciones del cuidado y protección de los estudiantes frente al Covid-19.

Internet access but who have mobile phone plans that include Facebook, TikTok, WhatsApp and Instagram.

In partnership with the national television channels, the SED negotiated two hours of education broadcasting in the morning and two hours in the afternoon on weekdays for “Aprende en Casa con Canal Capital”. Those programmes are also posted on the Portal Red Académica website, and available for download 24/7. The TV station had no prior experience with children and teenagers as an audience and lacked experience with educational programming. The partnership then expanded to include the Ministry of Education, the Ministry of Technology and Communications, and the Ministry of Culture, and the channels “Señal Colombia” and “RTVC Play”. A broad programme of educational television was launched, entitled “3, 2, 1 Edu-Acción contenidos para todos” (3, 2, 1 Edu-action, content for all) and offering content all day for all ages. At the same time, “Profe en tu casa”, a programme directed by teachers following the Ministry of Education’s pedagogical guidelines, was also broadcast. The broadcasting of both programmes was reinforced by a second signal that could be synchronised with regional TV reaching rural areas. The educational TV strategy was supplemented with guidelines and a communication strategy to instruct the education community on how best to use its content.

In addition, the SED developed a partnership with Colmundo Radio and DC Radio to broadcast a programme three times a week from 11:30 a.m. to 12:00 p.m. with educational content for the whole family. The objective of the programme, following the strategy to transform the home into a new learning space, is to encourage reading and writing. Well-known public figures (actors, musicians and artists) read books aloud, followed by conversations with experts and reading and writing challenges so students can continue learning on their own at home. The use of Facebook Live through the Secretary of Education’s Facebook group page has been also used to broadcast webinars, virtual classes and short educational videos.

#### *(Out-of-) school nutrition*

To continue the School Nutrition Programme on 25 March, the basic approach of the programme had to be modified, since the food distribution through schools ended up in crowd concentration and was inappropriate. First, families had to request the school meal by filling out an online form or by phone. This allowed one of two options: 1) delivery of a “basic food basket” to be cooked at home (for rural populations), equivalent to one meal a day for a month; 2) a food bonus of 50 000 Colombian pesos per home to be redeemed in 365 markets. In addition, the SED designed a guide for the families to consult on the web portal: How to maintain healthy nutrition at home.

### *Phase 3: Closing gaps (since 3 April)*

Both the TV and the radio strategy were focused on reaching homes without Internet access. It became evident that this was not enough. Complaints from homes without any Internet connection spurred the third phase of the strategy: Aprende en Casa Toca Tu Puerta (Learning at Home Knocks on Your Door), which aims to support education continuity for the approximately 50 000 homes without Internet access.

#### *Addressing the digital gap*

One of the components of this strategy was a partnership with Claro, the telecommunications company. This has now been signed and is currently being implemented, which will provide Internet data access and mobile data for those homes. Another component is the procurement and donation of devices for students as well as the design and implementation in each education institution of a protocol that will support lending computers to students who need them.

In addition, the strategy includes the distribution of physical supplies, books, and pedagogical toys and games, as well as activity adaptations, thanks to donations and active agreements from the programme’s partners. The education institutions’ guides, workshops and activities provided by the teachers were

printed by the SED and distributed to each house. Family welfare funds and Maloka Museum (a science museum in Bogota) distributed 2 000 scientific development kits.

To follow, evaluate and assess the Aprende en Casa strategy as a whole, there have been multiple meetings with principals, teachers, educators and experts to discuss and receive constant feedback. To complement that feedback, the Evaluation Office has produced two detailed reports along with the SED's Pedagogical Professional Fellowship strategy (Profesionales de Acompañamiento Pedagógico). Those professionals are in continual communication with teachers, directors and counsellors, which allows for permanent direct feedback from the educational institutions on their needs, challenges and successes. The mayor of Bogota's #Yomequedoencasa survey, completed on 23 April, also provided valuable insight to evaluate the city's perception or the AeC strategy.

## Main problems addressed

The main challenges faced by the strategy were:

- a wide inequality gap in terms of Internet access and devices
- a lack of skills in the use of ITC and virtual education among educational institutions and teachers
- the absence of self-learning capacities among many students
- a breakdown in communication between parents and teachers
- nutrition, health and housing challenges for a majority of low-income families.

The constant evaluation, feedback and collaborative assessment of the implementation of the strategy; its challenges; the unexpected necessities; and the degree of the education community's overall engagement led to a continual transformation of the strategy to meet those necessities. The combination of online (Portal Web Red Académica, social media interactions, virtual classes, videos) and offline resources (radio, TV programmes, printed guides and books, WhatsApp communications) offered a broad spectrum of educational content. It was a key factor in guaranteeing education continuity.

## Mobilising and developing resources

The strategy could rely on the Secretary of Education of Bogota's educational website "Portal Educativo RedAcadémica". Although it was restructured, it already had more than 600 educational resources. At the national level, the Ministry of Education's website "Colombia Aprende" was another available resource.

The AeC strategy had to develop new resources in accordance with the three different stages presented above:

1. First, it developed a flexible curriculum, mainly with digital resources, and made use of the already existing web portal "RedAcadémica", which was enhanced and restructured, primarily for teachers as an emergency response. The development of resources focused on continuing education and teacher-student communication. This phase also included the development of new ways to distribute school meals through the schools and by assigning bonus credits to be redeemed in local markets.
2. Second, as a new education dynamic that aimed to guide the entire education community and reorganise education in all of its management areas, the digital resources were designed or reorganised according to five groups of users: 1) teachers; 2) students; 3) guardians or parents; 4) principals; and 5) counsellors.
3. Third, to reach homes without Internet, new educational television and radio programmes for the family were designed and launched on national channels and radio stations.

4. Fourth, as an attempt to close gaps in Internet access by reaching all homes without an Internet connection or technological/computer devices, the distribution of physical education resources such as books, guides, games and activities, and the purchase, donation and lending of computer devices for students were organised.

## Fostering effective use and learning

Beyond the continued provision of nutrition and the multimodal provision of educational content, Aprende en Casa supported the use of the educational resources by providing teachers with curricular flexibility and by facilitating communication between teachers, students and families.

- ***Curricular flexibility*.** Some of the public teachers have embraced curricular flexibility as an obligation to innovate and think of new ways of teaching. The design of inter- and transdisciplinary activities for skills development has become a well-received alternative to traditional methods. The traditional way of evaluating has also been transformed, with the "grade assignment" being replaced by valuing students' desire to learn and effort to do so. Between the second and third phases of the strategy, there has been a significant improvement in the quality of teachers' planning and use of educational resources. Teachers' skills in using ICT in teaching (use of apps, of different virtual platforms) and in incorporating their students' home reality into their teaching content have developed. Some have even become YouTubers. The printed guides designed by teachers have also improved and have combined the use of videos, workshops and challenges, and drew on TV and radio programmes as well as newspapers. Yet, it is still necessary to reinforce teachers' training on ICT skills for a better and more effective use for teaching and learning.
- ***Communication*.** The strategy made the use of communication media and virtual platforms much easier. As a result, teachers significantly increased their use of such channels and communication with their students and their families is more intense than ever before. Public teachers have mainly used WhatsApp (64% against 45% for private teachers), email (62% vs. 60% for private teachers) and virtual classrooms (21% vs 46% for private teachers). In spite of the gap in the use of these different communication channels, this highlights a valuable effort to maintain student/family-teacher communication. WhatsApp has been the most used app, especially for students without Internet access or appropriate devices for other online platforms. Parents' WhatsApp groups, classroom groups and teachers' groups have allowed a constant flow of information. Despite the broad communication about Aprende en Casa, only 50% of the country's public schools were aware of it and 25% of the private schools. Forty per cent of the students in public schools actually watch the educational programmes broadcast on national TV.

## Implementation challenges

The implementation challenges encountered were:

- budget availability
- human resources for technological needs
- the connectivity gap
- logistics to distribute the resources and school meals
- taking into account the mandatory public health measures
- difficult dynamics in some homes (violence, abuse, lack of routines and healthy habits)
- communication challenges between students and teachers

- difficulties reaching vulnerable populations (migrants, victims, indigenous peoples, rural communities, people with disabilities).

The overall budget assigned to the SED had to be adjusted, since the Aprende en Casa strategy had to use resources that where destined to other projects, which meant a cut for the future execution of planned public policies. SED staff have been overworked for the past two months and the project surpassed their capacity (time- and skills-wise), so it has led the SED to partner with other public and private entities. Abusive and violent dynamics in some homes has made the SED re-evaluate what needs to be taught as a priority. This is a very valuable question that needs to be resolved, and implies that more focus is needed on instilling healthy habits and the development of social and emotional skills along with continuing to transform the traditional curriculum and teaching strategies.

The mobilisation to close the Internet access gap, bringing together public/private and civilian efforts, has been a great opportunity to prioritise with hopefully lasting positive effects.

## Monitoring success

To follow, evaluate and assess the Aprende en Casa strategy as a whole, there have been multiple meetings with principals, teachers, pedagogues and experts to discuss and receive constant feedback. In addition, the Evaluation Office has elaborated two detailed reports along with the SED's Strategy of Pedagogical Professional Fellowship, which are in constant communication with the teachers, principals and counsellors of each educational institution, the Mayor of Bogota's #Yomequedoencasa survey completed on 23 April, and the 24-hour Mesas de Apoyo Técnico y Pedagógico (Support Offices for Aprende en Casa on technological and educational matters).

Success is measured based mainly on: the number of visits for each profile on the web portal; the average number of viewers for each webinar or live video; the number of books, guides, texts and activities delivered; the number of school meals and food bonuses delivered and redeemed; the number of support requests made to the Mesas de Apoyo Técnico y Pedagógico (support offices for the AeC) and the topics of those requests; the reports issued by the local education directors from each school; and teachers', principals' and students' feedback.

The strategy has undergone a thorough evaluation, which shows the engagement of the entire education community (30 April-15 May):

- The Portal Red Académica has had 11 532 367 visits, compared to 3 914 680 in 2019. The section Aprende en Casa has had 4 641 163 visits. The breakdown of visits according to profile and content is as follows: 28% students, 24% families, 37% teachers, 13% principals, 9% counsellors and 7% diversity (blind population content, ethnic and disability differentiated content).
- Certain schools' own web portals had 1.2 million visits.
- WhatsApp was used for 18 teacher videos (#EntreProfes) with 9 100 reproductions.
- Through the "Canal Capital" national TV channel, there has been 20 000 downloads of pedagogical guides of the streaming programmes, 10 000 users of these streams and 4 000 daily TV viewers on average.
- There have been 7 different radio programmes, with 5 000 reproductions via Facebook.
- "Aprende en Casa Toca Tu Puerta": The physical distribution, mainly for rural localities, of 1 839 education supplies kits and 3 200 pedagogical guides from 5 schools were delivered to 20 000 preschool and primary students.
- The partnership with Claro Telemovil provided 50 000 families with an Internet connection.
- A hundred phablets, 80 computers, 20 tablets and 350 devices for teachers were distributed and a protocol for borrowing school computers was implemented for 164 914 devices.

Support requests to the Mesas de Apoyo Técnico y Pedagógico (support offices for the AeC) have decreased significantly, which suggests there have been fewer inquiries and difficulties in education continuity while using the different resources.

## Adaptability to new contexts

This solution is mainly appropriate for countries with Internet access gaps and deep socio-economic inequalities.

This strategy has been adapted and implemented in other Colombian cities. However, it is not scalable as a whole for rural areas. The television, radio and “Aprende en Casa Toca Tu Puerta” are the lines of work that can be replicated in even more complex contexts. (Enseña por Colombia has implemented a project for rural radio stations, based on a podcast called Aprende la Onda [available on Spotify], with satisfactory levels of engagement).

This initiative is meant to be sustained after the COVID crisis as it could be a transformative practice for education. On 9 May, the directors, experts and advisors of the SED had a one-day workshop on reinforcing the AeC strategy, projecting different possible scenarios. There is common agreement that the strategy provides new opportunities to finally engage families in their children’s learning process, to practice co-responsibility in education (relieving the burden that the school has carried), to teach the proper use of ICTs and to close the Internet access gaps in Bogota and Colombia.

### Box 12.1. Key points to keep in mind for a successful adaptation

1. Make a thorough diagnosis of the population's education community in order to determine:
   a. The percentage of students' homes with Internet access or a mobile hotspot.
   b. The percentage of students' homes with technological devices in good condition.
   c. The percentage of diverse students (disability/minorities) and their particular needs.
   d. The number of technological devices per home and per student.
   e. Teachers' training and skills in the effective use of ICTs for teaching, engaging and evaluating.
   f. Teachers' communication channels with the families.
   g. The socio-economic gap of the educational population.
   h. The governmental budget and capability for designing relevant resources for in-home education, and for developing, implementing and assessing action plans to mitigate health risks (including infrastructure adaptation, technological development, teacher training and student assessment).
2. Identify the existing resources and formulate a process that can be nurtured and materialised with what is available.
3. Gather all the key actors of the education community to collectively propose strategies and inspire them to assume the challenge as an opportunity to innovate and for creativity.
4. Avoid transferring the school experience to the student's home. Rather transform the home as a learning space in itself. This means a curricular flexibility that prioritises learning focused on the student's reality and context.
5. Identify all the communication channels used by the principals, teachers, counsellors, students and parents and reinforce them.
6. Secure the existing public and private alliances and negotiate new ones in order to cover the needs that overwhelm the local governments' resources.
7. Create a strategic team to monitor the strategy, its success and challenges.

## Acknowledgements

Edna Bonilla, Secretary of Education of Bogota

Mauricio Castillo, Subsecretary of Quality and Pertinence of the Secretary of Education of Bogota

Maribel Paez, Director of Evaluation

Ulia Nadezla Yamail, Director of Science, Technology and Education Media

Jose Maria Roldán, high school Director

Nisme Pineda, primary and middle school Director

## Further reading

Alvarazo, A., L. Karime (2020), “Hechos y recomendaciones para enfrentar los efectos negativos del Covid-19 en la educación colombiana”, Universidad Javeriana, https://www.redacademica.edu.co/catalogo/hechos-y-recomendaciones-para-enfrentar-los-efectos-negativos-del-covid-19.

Secretary of Education of Bogota (2020), Resumen Acciones Emprendidas por la Secretaría de Educación del Distrito Durante la Contingencia de la Covid-19 (Coronavirus), 11 April.

Secretary of Education of Bogota (2017), *Bogotá D.C.: Caracterización del Sector Educativo – Año 2017*, Secretary of Education of Bogota, Bogota, https://www.educacionbogota.edu.co/portal_institucional/sites/default/files/inline-files/PW_Caracterizacion_Sector_Educativo_De_Bogota_2017.pdf.

Sistema de Matricula Distrital, SIMAT, Matricula 2019-2024.

Undersecretary of Quality and Relevance, Secretary of Education of Bogota (2020), *Segundo informe de seguimiento y evaluación de la estrategia “Aprende en Casa”, Periodo comprendido entre 17 y el 30 de abril de 2020*, https://fr.scribd.com/document/468237263/Segundo-Informe-de-Seguimiento.

Undersecretary of Quality and Relevance, Secretary of Education of Bogota, “Antecedentes de la estrategia Aprende en Casa”, working paper.

# 13 Colombia: Colombia Learns Mobile

Iñaki Alejandro Sánchez Ciarrusta, Edtech team, World Bank

Type of intervention: governmental
Website: https://movil.colombiaaprende.edu.co

## General description

In response to the school closures and to support the continuity of learning during the COVID-19 pandemic, the Colombian government decided to support students, teachers and parents using a multi-channel approach. The Ministry of National Education provided a wide variety of free educational resources to the educational community through its platform Aprender Digital (Learning Digital). The resources are available in diverse formats, from articles and newspapers to 3D interactive games, e-books, digital libraries, video lessons, audiobooks, and videos and virtual learning objects, offering different options to continue with remote learning. The Ministry of Education also created the teacher platform “Contacto Maestro”, focused on supporting teachers and school leaders through the facilitation of webinars and asynchronous training.

However, the main objective was not only to make these resources available on line to learners, but to guarantee access to this educational content for children, adolescents and young people nationwide during the pandemic. Thus, through Decree 555 of 15 April 2020, a free mobile navigation tool was created for any mobile phone service user: movil.colombiaaprende. The Ministry of Information Technology and Communications published Decree 555 determining that mobile operators should provide zero-rating conditions for the education community. “Zero-rating” initiatives are one of the most effective ways to improve cost-free access to online educational materials. Through this practice, Internet and mobile service providers do not charge for data use on specific services and websites.

The main objective of this zero-rating portal developed by the Ministry of Information Technology and Communications in co-operation with the Ministry of National Education and in co-ordination with the mobile phone operators in the country is to ensure that all inhabitants have access to educational content and guidelines, with a special focus on lower income households. The mobile operators expressed their agreement to make the necessary adjustments from their technological platforms in order to provide the service as decreed.

Colombia Aprende Móvil, therefore, facilitates connectivity access to teachers, parents and students (from early childhood education to secondary education) in rural and urban areas through free navigation (without consuming data) in the mobile version of the Colombia Aprende platform. The service is enabled for mobile phone users (voice and data) in both the prepaid modality and post-paid modality up to 71 214 Colombian pesos or approximately USD 20 (two tax value units, or *unidad de valor tributario*). This agreement between the ministries and the mobile operators ensures that data related to this specific educational website will not be charged.

## Main problems addressed

The main problem was ensuring that students could access the resources made available to them to continue learning during the closure of schools and educational centres.

According to data about core indicators on access to and use of ICT by households and individuals from the International Telecommunication Union, in 2018, 44.9% of individuals used a computer in Colombia, 64.1% of individuals used the Internet and 85.2% of individuals used a mobile phone. To facilitate the population's access to educational content, a zero-rating portal was created, optimised for mobile devices. Colombia Aprende Móvil became a mirror portal of Colombia Aprende, the main portal with all the educational resources aggregated by the Ministry of National Education.

The government held discussions to articulate and synchronise the work between all the stakeholders, with the objective of assuring access to quality educational content for the majority of the Colombian population in the wake of the COVID-19 emergency. Thanks to this effort, Colombians now have free access to this portal. This free portal thus provides the opportunity to access educational material using a mobile phone.

This initiative ensures the citizens' right to access quality educational content during the crisis. This is especially relevant for the most vulnerable and for those living in remote areas, who will now be able to utilise the resources free of charge from their mobile phones to continue with the learning process from home (enabled by telecommunications services, which have been declared essential public services during the emergency).

It is important to note that Colombia Aprende Móvil is not an isolated government initiative to reach students with connectivity limitations. Both ministries worked closely as well to deliver more than 80 000 computers with preloaded educational content (that work with or without connectivity), distributed to teachers and students in rural areas. In parallel, the government has worked in a last mile programme (Digital Homes for Education or Hogares Digitales para la Educación), focused on bringing low-cost Internet access to low-income households. Finally, those who want free access to 1 GB of navigation and 100 phone minutes to any operator can download the CoronApp application from the Play Store or App Store, register and wait for data validation. In less than 48 hours, they receive a text message on their cell phone with the confirmation of the data plan, which is valid for 30 days.

These strategies have been combined with the broadcasting of educational content on both radio and television. With the support of RTVC (the national Radio Television of Colombia) and several of the regional public channels, educational and pedagogical content is broadcast, such as the "Profe en Tu Casa" programme ("Teacher at Home", which strengthens academic knowledge and skills), "3,2,1, Edu Acción"

("3,2,1, Edu Action", a programme for all ages with the aim of reinforcing educational skills in different subjects) or "Mi señal" ("My Signal", an alliance with local channels and community radio stations, with a complete programme to support the work at home of students and teachers, with a special emphasis on reaching rural areas). Additionally, through the National Radio of Colombia, the government has included pedagogical guides, seeking to strengthen basic and transversal skills through their content.

## Mobilising and developing resources

Most of the educational resources were already being collected, curated and made available to the educational community on the online portal (Colombia Aprende). However, the team from the Ministry of National Education had the challenge of quickly configuring the responsive mobile version of the site where the educational resources would be hosted and to adapt the relevant resources to the zero-rating mobile portal, Colombia Aprende Móvil. The Technology Office and the Innovation Office (both part of the Ministry of National Education) had been working on the development of a responsive version of the Aprender Digital portal. In one week, the necessary adaptations and developments for the mobile version had been implemented. The mobile operators managed to enable the zero-rating access the following week. The complete process took around ten days.

The publication of Decree 555 has also been an important and necessary step. This decree lays the foundations for the creation of the zero-rating portal, indicating that telecommunications become essential public services during the health emergency and remarking that it is imperative to guarantee the provision of those telecommunication services to all the inhabitants of the national territory during the emergency.

The available educational resources, in Spanish, range from preschool to secondary education (in addition to guidelines about the best use of digital educational resources and other materials for teachers). These resources are presented by level of education, and some of the topics are organised by grade.

It is important to note that Colombia does not have a unique national curriculum. Article 77 of the General Education Law (Law 115 of 1994) establishes that formal education institutions have the autonomy to organise the fundamental areas of knowledge defined for each level, within the guidelines established by the Ministry of National Education. In this context, the ministry has provided guidance to certified territorial entities (*entidades territoriales certificada*s) and to educational institutions (*instituciones educativas*) in order to integrate strategies that allow cross-sectional collaboration. The education secretariats have been working with the schools and the rest of the education institutions to develop plans to support remote learning at home during the pandemic, contextualising these plans to the characteristics of the territory, according to the needs identified within the framework of institutional autonomy, in close co-ordination and with support of the Ministry of National Education.

## Implementation challenges

- ***Infrastructure and time:*** One of the biggest challenges was to configure rapidly the responsive version of the site where the educational resources would be hosted. Additionally, it was crucial to assure the readiness of the technological infrastructure (testing, certification and production environments) to respond the potential demand.
- ***Crowdsourcing and curation of content:*** Another important challenge is related to content curation. The team working on the mobile site had to curate the content that the different education secretariats proposed and ensure that those resources could be adapted to the zero-rating site. It is necessary to continue reinforcing the technical team with the right knowledge and skills for the adequate selection of more content on demand, according to the needs identified in the territories.

- ***Co-ordination between multiple stakeholders:*** These challenges demand an intra- and inter-ministerial synchronisation exercise to generate content availability in a timely and rapid manner. Likewise, the availability of the content in the zero-rating mobile version requires articulated work with the country's education secretariats; the selection of educational resources has the purpose of enriching the planning management and design of strategies for academic work at home. This selection draws on material from the Ministry of National Education, but also from other resources received from public and private organisations that have authorised its use in the context of the pandemic. In this sense, the material constitutes an initial, purposeful and guiding list to learn at home, and complements the work of the Ministry of National Education with the secretariats of education to support the work carried out by teachers and school leaders as well as families at home.

## Monitoring success

Since it was launched, both the Ministry of National Education and the Ministry of Information Technology and Communications have been monitoring the mobile zero-rating site. The monitored metrics include the number of visits, the location of the visitors, the most visited pages and resources, and the types of devices used for accessing the site, among others.

From 21 April to 14 May, the site "movil.colombiaaprende" received almost 283 000 visits from around 66 000 users. Most of these users are located in Colombia, but Colombia Aprende Móvil also received visits also from Argentina, Mexico, Peru, the United States and the Bolivarian Republic of Venezuela (this tool is an online public site that can be accessed from anywhere in the world and with different devices, but not in zero-rating conditions).

As part of this joint inter-ministerial work, and based on the usage data of the site, both ministries are planning how they can refine and improve the strategy by including more content and defining other strategies that may complement the access to the content.

## Adaptability to new contexts

- The educational resources made available on the mobile zero-rating site can be expanded relatively easily, following the same process of content curation and adaptation from the main educational portal.
- Depending on the increase in demand, modifications to technology infrastructure capacities may be required. This is being monitored. Cloud technology can be used, if necessary.
- The large amount of resources in Spanish made accessible to the educational community can serve other Spanish-speaking countries in the region.
- In addition, this initiative could serve as a good example, at different levels, for other countries that are exploring the use of zero-rating initiatives as an alternative to facilitate free access to specific educational websites:
    - the lessons learnt from the process of co-ordination between multiple stakeholders: the Ministry of Information Technology and Communication, the Ministry of National Education, and mobile operators
    - the example of Decree 555 of April 15, 2020, created to make the mobile site available to users through free navigation.

### Box 13.1. Key points to keep in mind for a successful adaptation

1. Close collaboration between the Ministry of Information Technology and Communication, the Ministry of National Education, and the education secretariats is critical. The ministries have worked closely with the telecommunication operators and with the EdTech ecosystem as a result of the articulation promoted by the High Council for Economic Affairs and Digital Transformation.
2. It is essential to curate relevant content to make educational content available for all educational levels, as well as guidelines for teachers and for parents. It is important to ensure that these resources are adaptable to the mobile version of the portal to speed up the process and make the content available quickly.
3. The zero-rating portal is not a stand-alone initiative. To reach the largest number of students across the country, including those with limited access to connectivity or with no connectivity at all, it is crucial to combine different tools and technologies that are available. Hence, the government created a portal to share educational resources on line, the parallel zero-rating portal to facilitate access to the resources using mobile phones at no cost, but also included other initiatives, such as the distribution of devices with preloaded materials or the broadcast of educational programmes on TV and radio.

## Acknowledgements

Diana M. Silva Lizarazo, Chief Office of Educational Innovation and Roger Quirama, Head of the Technology Office, both from the Ministry of National Education of Colombia.

# 14 Colombia: My hands teach you

Marcela Gutierrez Bernal, Education Specialist, World Bank Group

Pedro Cerdán-Infantes, Senior Economist, World Bank Group

Laura Cristina Ochoa Foschini, Technical Deputy Director for Early Childhood Services, Instituto Colombiano de Bienestar Familiar

Juan Felipe Garcia Rodriguez, Knowledge Management Lead, Instituto Colombiano de Bienestar Familiar

Type of intervention: governmental (Instituto Colombiano de Bienestar Familiar)
Website: https://www.icbf.gov.co

## General description

Mis Manos te Enseñan (My Hands Teach You) was launched by the Instituto Colombiano de Bienestar Familiar (Colombian Institute for the Wellbeing of Families, ICBF) in response to the temporary closure of early childhood development (ECD) services due to COVID-19. The initiative started the day after the centres were closed and targets more than 1.7 million vulnerable children aged 0-5 and pregnant women. It aims to ensure that children's comprehensive development continues to be fostered at home, and to contribute to the protection of children's rights during the period of social distancing.

Its initial phase, called *contacto sin contagio* (contact without contagion), was implemented from 20 March to 20 April 2020 and focused on continuing the pedagogical process at home and ensuring adequate nutrition for children and pregnant women covered by the initiative. (Eligibility depends on a series of prioritisation criteria based on the family's living conditions, eligibility to a few other social programmes, being registered as a victim, having been exposed to violence, belonging to certain ethnic communities, having a disability, living in a penitentiary with one's parents, etc.) Food rations (for a 30-day period) with

locally sourced food and a family guide promoting care and child-rearing practices (with activities, recipes and recommendations for care and safety) were distributed. Additionally, staff from ECD services guided caregivers on simple pedagogical activities to foster children's development at home using age-relevant routine activities. Caregivers also collected data on the health and nutrition status of children, as well as alerts on potential violations of child rights. The initiative relied heavily on phone calls (up to eight per family each month). Yet, to reach families with and without connectivity, it also included the use of billboards, megaphones, radio, TV, SMS, WhatsApp, newsletters, an online resource bank and social media. A monitoring system was put in place to follow up on the implementation of the strategy on a daily basis, both at the local and national levels.

The second phase (from 20 April) built on the first phase to provide a more multimodal and comprehensive response with a special focus on vulnerable populations. A pedagogical kit (with materials such as paper, paint, chalk and crayons) was distributed to allow parents to carry-out the activities in the family guide. In addition, at-risk children and pregnant women received phone-based psychological aid as well as support to learn how to identify and cope with social, emotional and behavioural stress or psychological risks. This phone-based support includes guidance on ECD services to identify possible child abuse and gives them clear protocols to activate child protection services when this is needed. Finally, health and nutrition specialists contact families with children with diagnosed acute malnutrition to provide them with specialised guidance on feeding habits at home, identifying physical and behavioural warning signs, and to follow-up on child development and health. When necessary, at-risk populations were redirected to the health sector or another relevant entity.

The first phase spurred innovation at the local level in creating new pedagogical resources, devising creative ways to reach families and providing technical assistance to ECD workers. To harness these innovations, the strategy for the second phase defines a process to systematise and learn from these innovations, with the ultimate goal of incorporating them into ECD service provision permanently.

Mis Manos te Enseñan is innovative in at least three ways: 1) it promotes comprehensive early childhood development involving pedagogical, nutritional, health and psychosocial interventions; 2) it reaches all families through its multimodal approach (ranging from billboards to online resources), while prioritising those with greatest need; and 3) it makes an explicit effort to systematise significant and innovative experiences, generating evidence to improve the system's post-COVID functioning.

## Main problems addressed

First, the initiative needed to ensure that the closure of the ICBF's early childhood services did not have a negative impact on the holistic development of the country's most vulnerable children. (The National Early Childhood Development Policy [Law 1804 of 2016] gave the ICBF a mandate that involves prioritised attention, such as identification, vaccination schemes, access to health services and regular check-ups, adequate nutrition, early childhood education, family education related to care and child-rearing, access to children's literature, qualified care professionals, and access to culture and recreation.) In fact, the challenge was to use the period when families stayed home as an opportunity to foster rich experiences, stronger emotional ties and a protective home environment. Given that children usually receive 70% of their caloric intake needs in the meals distributed at the temporarily closed centres and that the closed economy brought with it economic hardships for the most vulnerable families, the ICBF needed to find ways to ensure that children consumed food of the right quality, quantity and safety every day. Since caregivers do not necessarily have early childhood development knowledge, the ICBF also needed to find ways to transfer this knowledge and practice in a way that did not overwhelm families. An additional challenge was the lack of resources of the target families, which implied that many did not have and could not purchase materials to stimulate children at home.

Second, the initiative needed to contribute to protecting children's rights during the time of social distancing. This was particularly relevant given the increased stress experienced by vulnerable families during confinement and the subsequent economic crisis.

Importantly, all of this needed to be done in a way that followed the preventive social distancing measures promoted by the central government, without leaving behind the most vulnerable (who lacked access to materials; were illiterate; did not own a TV, radio or a cellphone, among others).

## Mobilising and developing resources

The ICBF's experience in providing comprehensive quality care for pregnant women and for vulnerable children was a critical building block for the strategy.

This past experience allowed rapidly identifying a framework of 14 care and child-rearing practices to promote at home; the design of weekly "challenges" to mobilise families during the phone calls, SMS or WhatsApp messages; and even the selection of tools and critical indicators to monitor children's health and nutrition.

The framework for the 14 care and child-rearing practices was sourced from a pilot project for a new home-based ECD service provision for rural and hard-to-reach areas, which was being implemented at the time. The pilot was designed, among other objectives, to provide a pedagogical framework to foster child development within the hardest to reach families, those in rural contexts and those isolated due to physical, infrastructure and institutional barriers; a similar situation to the isolation faced by families due to social distancing measures.

Another crucial element that the strategy was built on was an interdisciplinary team of trained professionals who stood ready to provide care in innovative and user-centric ways. These involved 88 462 education agents, 1 847 health and nutritional professionals, 6 029 psychosocial support specialists, 47 215 community caregivers (*madres comunitarias*) (as of 31 May) and 2 077 service provider entities (as of 30 April), all specialised in children and with a deep understanding of the situation of their communities and their target users. The decentralised organisational structure and physical presence in the regions (197 zonal centres and 33 regional directorates) were also key in implementing the strategy across Colombia, without the ability to physically move, and in reaching households even in the most remote areas.

The new approach required the quick development of response materials. These included:

- pedagogical guides with care and child-rearing practices that could be understood by caregivers, even those with minimum reading skills
- food distribution packets that met the caloric intake requirements of young children, taking into account the potential dilution that results from meal-sharing among household members
- pedagogical kits that met the child development requirement and could be procured and distributed in the entire country within a short timespan
- protocols to systematically engage with the target population (by phone, WhatsApp, SMS, etc.)
- mechanisms to test these protocols in a contactless way (which requires the adaptation of existing tools to measure nutrition, health and development).

Once those new materials developed, a new approach for procuring and training personnel to carry out the activities in a rapid and contactless way was also needed. Further, it required designing new data collection tools to monitor implementation in real time and dashboards to gauge its success and adapt as needed. Importantly, the psychosocial component was newly designed to help families mitigate the psychosocial impacts that might result from the changing social and emotional life circumstances associated with the health emergency.

## Fostering effective use and learning

Mis Manos te Enseñan is a user-centric strategy which has effective use and child development at its core. This first draws on a careful selection of interventions. For instance, the written documents that present the 14 care and child-rearing practices were complemented with phone calls that broke down the advice into manageable pieces, reminded parents of the importance of interactions with their children, and incentivised behavioural change. These, in turn, were complemented by the activity kit to respond to the need for parents to have the necessary materials to engage in the learning activities fostered by the parental guide.

Learning has also been central to the strategy. The ICBF used real-time information and analysis to make adjustments to the strategy, resulting in the phasing of its implementation. Moreover, at the national level, the ICBF's knowledge management and evaluation team is systematising the strategy design and implementation process, while local offices are collecting significant experiences and practices within families and teachers. The ICBF is particularly interested in significant and innovative experiences, understood as those that promote care and child-rearing practices that result in holistic child development in a creative, sensitive and affective way. The ICBF has created a detailed process to: identify these experiences; report them through video, audio, images and documents; classify them into those that require feedback, those that should be added to the resource bank so that other territories and contexts can learn from them, those that can be shared through mass media, and those that are original and innovative; communicate and disseminate; and exchange these experiences at the national, regional and local levels, engaging in a debate around them and in peer learning (virtually while social distancing measures hold).

## Implementation challenges

Carrying out such a comprehensive strategy during the COVID-19 pandemic was not without challenges.

***Procurement issues (e.g. food, IT).*** These included procurement issues associated with cancelling, modifying and carrying out large-scale contracts for groceries (instead of the traditional meals contracted out in ECD centres) and materials for the pedagogical kits. In some regions, there were shortages of certain products, which required the ICBF to quickly identify providers and substitutions that would still meet the nutritional requirements. Additionally, there were challenges associated with getting to remote places such as the Amazonas region, where military operations were deployed to deliver food. The ICBF also tried to make arrangements with telecom providers nationwide, but found these negotiations difficult and ended up having to reshuffle resources within service providers' budgets to pay for data and phone plans.

***Distributing resources.*** Planning for effective distribution of meals, printed materials and pedagogical kits in a context of social distancing was also challenging and involved communicating with parents ahead of time, carefully designating pick-up times and locations to avoid contagion, as well as training the ICBF's personnel to follow biosecurity protocols.

***Connectivity and technology access.*** Limited connectivity and access to technology at home was also an important challenge. Although most education agents and community mothers (*madres comunitarias*) live in urban areas, only 43% have access to connectivity at home. In particular, only 61% of education agents reported having a computer or tablet, only 33% a smartphone and only 30% regular access to the Internet. The figures are lower for community mothers: 54% have a computer or tablet, 26% have smartphones, and 24% access to the Internet. This brought difficulties in terms of communication, training and implementation, as the strategy has strong phone-based and real-time reporting components. Connectivity issues were mitigated by promoting the use of alternative means of communication that communities were already using such as community radio stations, loudspeakers and even billboards.

Monitoring was also adjusted to the situation of remote contexts, where reporting was on a weekly basis when ECD services' staff could go to populated centres with better mobile phone reception.

***Parental literacy.*** Parental literacy was an important element, which implied being able to provide multimodal pedagogical resources for families such as short audio recordings and podcasts, videos and drawing, not only written materials. This risk was also mitigated early on by choosing phone calls over virtual or written channels as the main tool for implementation.

The second phase of the strategy incorporated lessons from the implementation of the first phase.

***Pace of communication with families.*** The information from the monitoring system and qualitative data from technical assistance liaisons established that the initial number of calls was too burdensome for families and ECD workers, especially in the midst of the pandemic. As a result, phone calls are now limited to six per month, including one call for health and nutrition monitoring (including monitoring vaccinations schemes) and one exclusively to follow up on child development.

***Diversifying communication.*** Also, based on the realisation of the extent of the digital divide among users of the ICBF's ECD services, the strategy doubled up on promoting alternative mechanisms to support families that cannot be reached by phone. These mechanisms include clear guidelines on how to reach families through alternative and community media and constant support from national technical assistance liaisons. The strategy also allowed for adjusting the guidelines in order to attend to the needs of different ethnic communities, such as the inclusion of culturally appropriate activities, dishes, rituals and pedagogical elements in family guidelines and the pedagogical kit.

## Monitoring success

The ICBF designed real-time dashboards to monitor the implementation of the strategy and pay service providers on this basis. Given the time-sensitivity of the response, they used KoboToolbox (an ODK solution working on OCHA servers that allows organisations to have their data collection for humanitarian circumstances) for daily monitoring during the first phase. However, since the tool did not allow tracking each individual child, they worked in parallel to build a custom-made solution in which each child could be monitored, which is integrated into their servers and is used since May.

These data-collection platforms allowed the ICBF to document that the first phase of the response had a wide national scope: it involved 17 172 740 pedagogical-support phone calls reaching 449 159 children every day. Additionally, 67 751 families without access to telephone were contacted through alternative mechanisms (as of 7 June 2020, according to the ICBF System for the Sanitary Emergency Plan). The second phase involves a greater number of users.

Finally, between its inception and the end of July 2020, there had been 445 960 individual accesses to the resource bank, which includes more than 400 pedagogical resources (activities, games, guidelines, images, low-resolution audio recordings and videos).

## Adaptability to new contexts

The distribution of materials to vulnerable populations and the provision of phone, radio, TV, SMS and WhatsApp-based support to families to encourage positive care and child-rearing practices and to provide nutritional and psychosocial support are transformational elements that should be considered for the provision of early childhood services in contexts where users are hard to reach.

Several elements make the phone-based solution interesting for diverse contexts. First, it is highly favourable to contexts where there is low Internet coverage and high mobile phone penetration, as is the case in many middle- and low-income contexts. It is also ideal in places with high illiteracy rates among

caregivers. The provision of psychosocial and nutritional phone-based guidance is innovative, and if effective, could be significant in enabling the provision of services to hard-to-reach communities that usually are left unserved because of human capital shortages in the regions or because of distance. The ICBF is currently designing an evaluation to assess this and inform the international dialogue.

The delivery of physical materials and groceries is also very relevant for contexts where there are marginalised populations who lack access to radio or phones and may not have the means to buy pedagogical material.

The solution has already been scaled at a national level in Colombia in the COVID 19 context. Some of its elements, such as the resource bank, will remain relevant after the crisis and will strengthen system provision after the pandemic, especially for the family-based modalities of the ICBF. A formal evaluation is also underway to inform child development policy design in the short, medium and long term, while the world tries to find a vaccine or treatment for COVID-19.

### Box 14.1. Key points to keep in mind for a successful adaptation

1. Define the key objectives of the policy with as much precision as possible, taking into account the organisation's overall mission and vision.
2. Understand the context, needs and constraints of the target population (both caregivers and providers), including their access to materials (radio, TV, phone, smartphones, connectivity and print) and educational level.
3. Take advantage of your strengths (e.g. knowledge, human resources) to adapt existing materials and develop innovative materials that fill in gaps.
4. Use a multimodal approach to reach all users, making sure to provide additional support to the most vulnerable children.
5. Design mechanisms for monitoring and continuous learning empowering local agents to develop solutions.
6. Keep an eye open for local innovation and design mechanisms that harness innovation and allow the national strategy to benefit from their adoption.
7. Have an iterative process and continue learning to improve the iterations.

## Acknowledgements

Thank you to Lina Maria Arbeláez, General Director; Carlos Alberto Aparicio Patiño, Early Childhood Director; Kelly Celis Bedoya, Technical Deputy Direction for Early Childhood Services; and Osca Ivan Pineda Diaz, Technical Deputy Direction for Early Childhood Services, all from the Instituto Colombiano de Bienestar Familiar.

# 15 Egypt: K-12 Egyptian knowledge bank study portal and new form of assessment

Nelly El Zayat, Co-founder and Director, Newton Education Services

Type of intervention: governmental (led by the Ministry of Education and Technical Education)
Website: https://study.ekb.eg

## General description

In the wake of the COVD-19 pandemic, all schools across Egypt were shut down starting 15 March 2020. As of 19 March 2020, the Ministry of Education and Technical Education (MOETE) announced the launch of a new study portal, an offshoot of the existing Egyptian Knowledge Bank (EKB), that would provide all students from K-12 access to all their lessons via interactive videos, games and presentations. Meanwhile, MOETE partnered with Edmodo to provide teachers a platform to communicate with their students, and to allow teachers to hold virtual classrooms.

Prior to 19 March, the EKB catered mostly to Secondary One and Secondary Two (Grades 10 and 11) students, together with higher education researchers and students. The K-9 student body had only a handful of resources that were not well curated on the EKB. Now, and starting on 19 March, they had every single lesson in their curriculum mapped to the new study portal. The new study portal grouped all the scattered material together on the original EKB platform and organised them by grade level and lesson title.

On 26 March 2020, the Minister of Education announced that for Grades 3-9, the traditional end-of-year exams determining whether students can move to the next grade would be replaced with end-of-year research projects that were due on 1 May. Grades 10 and 11 had already shifted to electronic testing, on the tablets provided by the ministry, as part of the reform (for Years 10 and 11), and the complete transformation (known as Education 2.0 for K-2) that had already been taking place since 2018. Grade 12 students (the last cohort to be tested using paper and pencil) were scheduled to sit for their exam physically under extreme precautions for COVID-19.

The fact that the end-of-year exams had been replaced with research projects was not a mere logistical solution due to the COVID-19 situation; it was actually part of the ministry's vision of Education 2.0 and an opportunity to expand it to more grade levels. For the first time, the parents and students of the Egyptian public school system were exposed to the idea that exams are not the only means of assessment, and that learning could be measured in ways other than memorising material then sitting for a test to reproduce them on paper. The research projects also required students use their knowledge and skills from various disciplines and subjects: Arabic, maths, social studies and science – another new concept for most Egyptian students and families.

Education continuity was thus ensured by significantly expanding the bank of educational resources to cover the entire curriculum in all grade levels by providing teachers and students with a communication platform, and by changing the final exam of Grades 3-9 to an end-of-year multidisciplinary research project.

## Main problems addressed

The main problem addressed by this initiative was the provision of education continuity beyond the school closure on 15 March. The study portal, together with the change in the type of assessment, allowed for learning continuity and assessment despite the school closures.

The initiative was particularly interesting because it introduced new concepts to Egyptian students and families. First and foremost, it introduced the concept of assessing students' learning via other means than final exams. Second, it promoted a multidisciplinary approach to learning by combining several disciplines and skills in the end-of-year research project. The COVID-19 crisis allowed for the acceleration of an ongoing reform process trying to move Egyptian education away from its strong emphasis on memorisation and teaching to the test to promote teaching and learning for understanding, including understanding the connections between the knowledge acquired in different subjects.

## Mobilising and developing resources

While the new study portal and the new form of assessments from Grades 3-9 were in response to the COVID-19 situation, they could build on both the existing EKB and on the Education 2.0 vision of transforming the school system in Egypt to one of learning and teaching for understanding. All end-of-year exams are now either done electronically (Grades 10 and 11) or rely on a multidisciplinary project rather than a test (Grades 3-8).

Some new resources needed to be developed:

- A new sub-portal of the EKB catering to grade levels that were not previously strongly represented on that platform was developed in four days. It includes a multitude of resources including videos, as well as interactive games and presentations all mapped to the lessons in the curriculum. Most of these resources were already on the EKB, but were not organised by grade level nor matched to the existing lessons in the curriculum. Now they are.

- A new platform allowing teachers and students to communicate was established within ten days thanks to a partnership with Edmodo: it allows each teacher to communicate with students in their classes in a private and collective manner, either through its virtual classroom feature or through written communication – and allows students and teachers to communicate in a secure environment.
- New guidelines for the end-of-year assessments for students in Grades 3-8.

## Fostering effective use and learning

One strong incentive for students and families to use the resources and continue to learn lay in the fact that end-of-year assessments were maintained, even though their format changed. Students had to work on their research projects using the study materials available on the new EKB study portal – also getting teachers and parents involved in the process. Teachers were provided with guidance on the Edmodo platform, and the level of interactivity of the resources on the EKB helped facilitate their role with the students. Also, the Ministry of Education made sure to communicate every change that was introduced clearly on the ministry's social media pages and on the various TV networks.

## Implementing challenges

***Speed of execution.*** A first implementation challenge related to the lack of time. The new portal was set up in four long days, which required continuous work from the EKB team and the support of partners of the MOETE. The same was true with the Edmodo website, which had to be put in place very quickly. This implied that some imperfections had to be addressed after the launch of the new platforms. For example, there were a couple of glitches on the Edmodo website where the students were supposed to create their accounts to submit their research projects, but they were addressed right away.

***Supporting the use of the platforms.*** A second implementation challenge was the lack of teachers' and students' habits to use platforms. Beyond communications with teachers and families, the MOETE set up hotlines for complaints and troubleshooting. This feedback loop allowed it to improve and assess the offered services.

***Changing the assessment mindset.*** A greater challenge was having parents and families accept the concept of assessment through a research project. One solution that had come through the social media channels was to end the year without any form of assessment, and to have the MOETE come up with a formula that would calculate an end-of-year grade for students without the final assessment. This was discarded by the minister, who insisted that no student would move up a grade without being assessed. Another challenge was that most of the students were not familiar with what research entails; what citing references or plagiarism is. There was a whole new lexicon that students, parents and, in some cases, teachers, had to understand.

***Addressing the digital gap.*** Finally, there was an additional challenge for those families who were unable to submit their projects on line; the MOETE provided learning materials through TV channels. Students were also given the option of submitting hard copies of the research projects physically in schools.

## Monitoring success

By the first week of May, the new portal had around 80 million page views, while Edmodo had a total of 15 million students registered, 1.2 million teachers and 1 million parents, with around 2.5 million virtual classrooms held. Both the study portal and the Edmodo websites allow for continuous monitoring of their users.

By the 15 May deadline, 15 million research projects were submitted.

## Adaptability to new contexts

This solution was implemented across Egypt for the entire population of Grade 3-9 students (around 17.5 million students). This is clearly a solution that can be implemented at scale.

In terms of the study portal, this solution could be considered for any context that deals with a large number of students who have access to the Internet, or who could be supported to get online access. In Egypt, the Ministry of Communications and Information Technology, for example, offered students free data SIM cards.

Using the research project as a tool for assessment could be implemented even in the absence of access to the Internet.

While these solutions were implemented in response to the school closures due to COVID-19, they are solutions that can and will outlive the crisis in Egypt. In fact, these solutions expedited the vision behind the ongoing transformation of education in Egypt.

### Box 15.1. Key points to keep in mind for a successful adaptation

1. Make use of existing resources and existing expertise.
2. Do not function in emergency mode only, but propose solutions that serve your overall strategic vision for the future of your education system.
3. Be ready to troubleshoot any problems that arise along the way.
4. Offer solutions that are accessible and implementable by all students.
5. Make use of existing partnerships.
6. Collaborate with other sectors and government entities to come up with the best and most affordable solution for students.
7. Do not compromise on the students' learning.

## Acknowledgements

Thank you to the Ministry of Education and Technical Education and to Dr. Tarek Shawki, Minister of Education and Technical Education of Egypt.

# 16 Finland: Yle distance school

Saku Tuominen, Chair and Founder, HundrED

Type of intervention: governmental (public service company)
Website: https://areena.yle.fi/tv/ohjelmat/57-6AXjXXPdl

## General description

With the rise of the COVID-19 crisis, which resulted in school closures in Finland, Yle, the Finnish National Broadcasting Company, immediately took action to help local educators, teachers, parents and students. Yle already had its own online platform, Yle Areena, which hosts thousands of hours of content including TV and radio shows, podcasts, and articles. Yle set up a small in-house team to select the resources that could be useful for distance learning, being mindful of both content and length. They consulted on an ongoing basis with teachers who are at the forefront of teaching (according to their peers) in order to compile the resources. Within days, they launched a special service, Yle Etäkoulu (Yle Distance School), to disseminate these educational resources. In parallel, Yle decided to open a slot in its programming schedule between 11:00 and 12:00 to diffuse selected clips of some of the educational videos, updated daily.

## Main problems addressed

This public broadcasting service's initiative aims to support national and regional education authorities by providing a well-researched compilation of existing media materials for learning purposes. Overall, it aims to:

- provide all teachers, families and students in Finland with quality resources for school-aged children learning at home during the COVID-19 lockdown

- ensure that students with no Internet connection have access to resources that are relevant to teaching and learning
- support teachers in using some of these selected media materials in their teaching.

## Mobilising and developing resources

Yle was able to build on its existing Yle Areena platform, which already included a collection of TV, radio, podcast and article content. It mobilised in-house resources to compile an initial list of online resources, and was able to bring in lead teachers to test these resources in order to provide the most useful ones on its platform.

As a result, new features were developed in the process. The website was revamped to make the educational resources visible and communicate about their availability. The crisis also made its pre-existing service, Triplet, about turning news into learning material, more relevant.

## Fostering effective use and learning

One key aspect of the initiative was to ensure that the media resources for learning were relevant and user-friendly. Therefore, it was crucial to involve the teacher community.

Yle opened a Facebook group for “forerunner” teachers, whom it identified and invited by visiting the most popular Finnish Facebook groups for teachers. In this group, teachers are asked to test and improve the service. The teachers provide instant feedback on what they understood and what they did not, what was useful and what was lacking. Based on their ongoing feedback, Yle improves the service daily.

In this Facebook group, teachers also brainstorm and share ideas on how to use the available resources. The teachers had two requests after reviewing the content: 1) more variety in the length of lessons; 2) reaching out to people who cannot access the Internet.

Based on this feedback, Yle decided to open up a one-hour slot in its programming schedule from 11:00 to 12:00 to share learning content – updated daily – with students.

However, Yle decided not to: 1) match available resources with specific age groups because teachers did not think it was necessary; or 2) provide live programming (e.g. teachers giving lessons on air), even though some teachers asked for this provision.

Second, Yle wanted to promote the platform so that the learning community could benefit from the online resources. Thus, Yle asked teachers who tested the resources to recommend the service to people in their network. Yle also marketed the service through its own channels.

Finally, Yle wanted to ensure that teachers could effectively use media materials as a learning resource. So it turned towards its other service, Yle Triplet, where a small team of teachers turns evening news into education material overnight. They select interesting news clips, some of them related to COVID-19, and provide ideas on how to use these as part of a lesson. These resources are accessible through a mobile (app) and on desktop (webpage), and are free for Finnish teachers.

## Monitoring success

The Yle Distance School service has been very well received and valued for its user-friendly platform: one month after the start of the lockdown, there had been 200 000 visits in total (with 135 000 unique visitors).

Almost 30% of Finnish teachers (13 000) used Triplet weekly before the crisis. The number of users has skyrocketed to 50% of teachers (22 000) since the crisis began.

## Adaptability to new contexts

This approach could potentially work in any country where public (or private) channels already have a well-organised online collection of media clips, videos and articles. Media companies usually have ample resources to set up a task force to compile relevant resources, with two objectives in mind: provide online educational resources and TV programmes for students without access to the Internet.

The above strategy works best in countries where the population can access the Internet or a TV network and where there is a community of teachers who are proficient in using online resources and can provide guidance to the broadcast company. However, the balance between live broadcasting and on line could always be modified. Examples of how to use the resources could also be provided in those countries where teachers might not be as used to using media resources in teaching.

### Box 16.1. Key points to keep in mind for a successful adaptation

1. Select a local broadcasting partner. In many countries, the national public broadcasting company is the obvious choice.
2. The local broadcasting partner most likely already has an archive and online service. If so, select content that might be immediately useful during the crisis and create a simple service with all of the compiled resources (TV, radio, podcasts, articles). Aim for simplicity.
3. Start an open dialogue with teachers (for example, in a closed social media group) to understand their needs.
4. Promote the service using the broadcaster's channels and teacher networks.
5. Since many people don't have access to the Internet, open slots in the broadcaster's programming schedule for daily educational TV shows – either using existing material or creating new live content (e.g. live lessons) with teachers.

## Acknowledgements

Thank you to Yle Oppiminen.

# 17 France: Banks of educational digital resources

Alain Thillay, Head of Digital Innovation and Applied Research, French Ministry of National Education, Youth and Sport

Axel Jean, Deputy Head of Digital Innovation and Applied Research, French Ministry of National Education, Youth

Quentin Vidal, Consultant, OECD

Type of intervention: governmental (with private sector)
Website: https://eduscol.education.fr/cid150648/ressources-numeriquespedagogiques.html#lien1 | https://mescoursensolo.fr

## General description

At the outset of school closures, the French government facilitated access to 17 banks of educational digital resources for school (BRNE) as one of the key elements to ensuring pedagogical continuity during the confinement period and afterwards. These banks of resources were developed by publishers and EdTech companies a few years prior to the COVID-19 pandemic as a result of a public tender. The BRNE provide teachers with learning activities for their pupils, but also the possibility to modify or create their own resources and to differentiate what they offer to pupils. The BRNE are portals that provide access to thousands of pages of content, tools for creation, and services for dissemination and interaction between teachers and students (discovery, training, revision, learning and assessment activities). They are all fully aligned with the French national curriculum in all disciplines and grades, and tagged accordingly to make them easily accessible. Throughout their deployment, the BRNE benefited from extensive support from the French *académies* (regional sub-divisions) in terms of teacher training and the dissemination of

information on teaching methods**.** The procurement phase allowed the ministry to develop strong relationships with the contractors, who developed a better understanding and competency around the ministry's requirements.

The contribution of the BRNE implementation in the face of the crisis lies in their rapid and massive expansion as soon as the lockdown was enacted in France – as part of a more comprehensive system of distance solutions for education continuity. Most notably, the BRNE were extended beyond their initial scope (primary and lower secondary) and targets (French public school teachers) thanks to a continuous dialogue and to the existing good relationships between the ministry and EdTech contract holders.

As soon as the decision was taken to close schools, BRNE holders were asked and unanimously agreed to extend access to all teachers who wished to use them. This allowed teachers to use all the digital tools available on the platforms, in particular the services to create pedagogical activities and to send them to pupils. Teachers were given access for both the age groups they were teaching and for the levels above and below these age groups.

In less than a fortnight, the government drastically simplified access for teachers, students and their families by disabling all authentication requirements (thus eliminating any personal data collection) to one of the banks of resources: the "Mescoursensolo.fr" platform. This more open model was then replicated to be used with other banks of resources to facilitate access to a large bank of existing educational resources during the crisis. This open access also allowed accessing the learning materials from all French-speaking countries, leading to significant usage in Africa.

## Main problems addressed

The opening of the BRNE to a much larger audience thus mainly addressed five challenges arising from the school closures:

1. ***Providing quality digital resources designed for learning both face-to-face and at a distance to as many teachers, students and parents as possible (and as quickly as possible).*** Increasing the numbers of users was necessary to ensure pedagogical continuity and implied testing the robustness of the banks of resources, their respect for privacy policies and the quality of their content in relation to curriculum.
2. ***Facilitating open access to resources with no authentication required other than a simple link or alphanumeric code.*** It was important to ensure that stakeholders could easily access the banks of resources. Broadening the scope of the platform did not necessarily imply opening up all functionalities to everyone, which was not possible due to the expense of such interactivity. Rather, the challenge was to facilitate students' and parents' access to activities that enabled them to discover, revise or reinforce learning in school.
3. ***Making content available to students and families lacking computer equipment or Internet connections.*** This was achieved most notably via television lessons based on the resources of the BRNE through the Maison Lumni, which also broadcast other resources). This service required extending the broadcasting rights of the resources.
4. ***Making content available to French speakers internationally.*** The BRNE were initially designed to serve French national teachers who were required to connect using their professional ID. However, as the "mescoursensolo.fr" platform stopped requiring certification or authentication, the platform could be used everywhere in the French-speaking world either to address the common difficulties of pedagogical continuity or to offer solutions to more local challenges.
5. ***Ensuring that a large number of users can access the platforms simultaneously.*** The expansion of access induced a risk that servers would not accommodate all demands, as was the case for most other public and private services during the first two weeks that followed school

closures. The cloud solution that was used allowed for an automatic calibration of server use based on the very high initial demand.

## Mobilising and developing resources

Resources were mobilised through collaboration between the ministry, education contractors and stakeholders, building on the past procurement of educational resources or on the already established extensive taxonomy of digital learning resources. While most of the resources were just mobilised, the main development related to the extension and modalities of access to the platforms to new audiences and possible uses.

On 27 March 2020, direct access to the digital resources banks was offered to all students (and their families) who wanted to practice and revise. Most importantly, no authentication was necessary and therefore no personal data were collected on the Tactileo platform. This large resource bank brought together several publishers (French FSL/FLE [school, middle school, high school], maths [10th grade and middle school], science and technology (SVT-PC, techno), German, Italian, Latin-Greek at all levels). Access to the digital resources through the school-learning management systems was also extended so that teachers could access resources beyond the grades they teach.

Building on the success of this approach, the ministry amended the initial procurement contract to allow for the delivery of the (new) “Mescoursensolo.fr” platform, whose model had the particular merit of providing simplified access to students and their families even when teachers had not initially taken on the BRNE. This specific platform demonstrates the potential of the digital banks, notably for pupils with disabilities for whom the resources are adapted. The adaptations target students with a variety of special needs, from learning difficulties through to sensory and cognitive impairments. They ease students’ autonomous learning, either by making the resources accessible (e.g. font type, font size, colours, contrasts, subtitles, oral instructions and activities, etc.) or by proposing alternative learning scenarios or activities more adapted to their needs (e.g. digital manipulations for students with dyspraxia). Aimed at boosting students’ learning and self-efficacy by allowing them to learn faster, these adapted resources also support teachers in personalising their teaching to students with special needs. While already available before the pandemic, some teachers and students became aware of the existence of these inclusive resources only during the school closure.

The French network of Digital Education Advisers (DANE) offered widespread teacher digital training alongside the ministry. Continuous dialogue between stakeholders, existing good relationships and an already strong infrastructure with high-quality resources developed by publishers all fed the mobilisation and development of resources.

## Fostering effective use and learning

Regional academies that took part in the BRNE development and qualification promptly promoted their use. In consequence, the BRNE have spread more widely than the resources curated by major cultural institutions via the eduthèque portal or those curated by industrial players via the Etincel platform.

Here also, the ministry was able to capitalise on previous actions (procurement contracts, co-ordination at the national level, collaboration with all stakeholders) to foster and accelerate the effective use of digital banks through webinars. In total, in the first few weeks after the school closure, more than 300 educational pathways in all disciplines were offered by teachers and trainers from various academies such as those of the Nancy-Metz academy, the Aix-Marseille academy or the examination reviews by the Créteil academy. (Academies are regional local authorities representing and implementing the ministry’s policies in the field.)

Social networks, peer-to-peer sessions and distance meetings such as the Ludoviales have also increased the reach of information and training.

Despite the emergency measures taken during the lockdown period and the push for rapid solutions, the BRNE remained committed to their initial ambition of reshaping digital school practices around pedagogical innovations, security of services, cloud technologies, artificial intelligence and mobility to the benefit of teachers and students. In that regard, the BNRE have displayed a set of innovative specificities from the outset that makes their use easier for teachers and more effective for learning:

- digital contents can be modified, downloaded, and are functional offline and operational on any support (multi OS, web-responsive)
- digital contents are mapped against the French national curriculum, with a level of granularity and a taxonomy that make resources easy to identify for teachers
- they represent the largest collection of interactive, accessible educational resources to support a more inclusive school (disability)
- as a nationally shared solution, they facilitate support and allow for harmonising training needs and delivery
- the Ministry of Education ensures that all digital solutions comply with France's General Data Protection Regulation
- the Ministry of Education supports the EdTech sector in structuring its pedagogical and technological offers, a collaboration that increases the EdTech skills both within the EdTech sector and within the ministry.

## Implementation challenges

This solution entailed overcoming a number of implementation challenges.

***Extending access beyond the scope covered by the original public contracts and initial intended beneficiaries.*** At the outset of the confinement period, the ministry requested in writing that the BRNE holders extend the scope of the banks of resources, one of its key policy actions along with TV broadcasting of courses. This administrative challenge required the mobilisation of the entire institutional chain – the ministry's Eduscol website, pedagogical inspection bodies and digital education advisers in the field. The promotion and enlargement of the BRNE allowed for rapid dissemination of the initiative to an extent that had never been seen before.

***Ensuring compliance with data protection regulations.*** Conceived as early as 2017, the first 14 digital banks were designed to serve 245 000 teachers and 2.4 million students as a maximum user target. The COVID-19 crisis doubled the number of potential users with no removal of content, services or privacy rights. Indeed, at a time when the urgency of the crisis meant that some actors found it difficult to comply with the General Data Protection Regulation, the BRNE commitment to guarantee personal data protection was maintained. This involved the removal of authentication requirements, so that individual platforms no longer collect personal data.

***Initial resistance to the open model.*** The successful and rapid deployment of the BRNE led to the propagation of the open model to other banks of resources. At first, however, the evolution towards the open "mescoursensolo.fr" model encountered very limited success with stakeholders. It was only after advertising the low development costs and promoting the new possibilities offered by open sessions that other BRNE stakeholders started to move this open access agenda forward. Open access had initially not been planned as a user (and pedagogical) experience when establishing the BRNE.

***Ensuring robust technical specifications.*** The BRNE had been included in schools' learning management systems for several years, but their enlargement involved ensuring permanent services and online-offline interactivity as well as robustness and ease of use.

***Planning for a sustainable solution.*** The ministry can now envision – alone or with local authorities – proposing an ongoing pedagogical platform in primary and secondary education. This would be dependent on further development of the BRNE, on support in terms of training and communication as well as on the maturity of the platforms. To this effect, the ministry will issue new calls for tender in 2020-21 to provide additional educational content through the BRNE.

## Monitoring success

The BRNE contractors indicate that they have seen a significant increase in the number of registrations and in the use of content and services during the school closures period (5-15 times more depending on the resource bank). Those numbers are corroborated by the frequency of visits measured on the students' and teachers' learning management systems (*espaces numériques de travail*) where the BRNE are deployed. Several hundred thousand users were recorded on the teachers' side, who, in turn, uploaded several thousand exercises, sessions and activities, with a peak in the first half of April. The metrics nevertheless remain heterogeneous due to the multiple access modalities, and they cannot capture the use of contents downloaded offline, nor account for reuse on Moodle platforms.

The most significant increase in use was recorded on 30 March 2020, as illustrated by the data presented by the Tactileo platform (excluding ENT). On that date, there were 120 000 teacher accounts created on Tactileo, exceeding the target of around 80 000 teachers for all subjects covered by the BRNE collections. In addition, Tactileo recorded 15 times more connections and over 100 times more sessions sent to students by teachers than before 14 March; and more than 1.4 million exercises performed by students, without any server load problems. Figure 17.1 shows the difference in the number of users between the 3 weeks before 9 March 2020 (in orange) and the 3 weeks after 9 March 2020 (in blue).

### Figure 17.1. Number of users of Tactileo over time (11 February-9 March; 9 March-4 April)


In addition, the open access "mescoursensolo.fr" experienced as much server consumption during the confinement as the whole of BRNE and Tactileo Education together recorded between the start of the school year and the start of the confinement. The work on monitoring indicators is considered a priority and must be consolidated, even if not all digital resource banks target the same number of potential users. In particular, access to the BRNE is widely heterogeneous depending on school level. An online survey to provide monitoring feedback is planned, both to acquire a point of comparison with previous studies conducted in the summer of 2018 and to measure the interest shown by users in the BRNE.

## Adaptability to new contexts

The BRNE could stand, along with the "My Class at Home" scheme from the National Centre of Distance Education (CNED), as a durable basis for education continuity proposed by France at the international level. The initiative would likely require the involvement of local actors to adapt the contents to different curricula and different cultural approaches to learning, but BRNE holders have already agreed to propose joint solutions, such as the Tactileo offer for Senegal.

Removing the authentication barrier has massively broadened the use of the BRNE. As a French professional teacher email address is not available, their content and services are available to anyone who speaks French and has access to the Internet, be it on a computer, tablet or mobile phone.

The BRNE are also listed in an online catalogue of all French public and private players in digital education that is being compiled. The idea is to propose a coherent and comprehensive offer that brings together all the educational actors of the French educational digital ecosystem through a tripartite alliance between public actors, private actors (EdTech companies) and non-governmental organisations (to facilitate access to the Internet). This last issue of Internet access is often problematic, especially in lower income countries, and that is where asynchronous Internet solutions such as Bibliothèques sans Frontières or the BRNE can play a crucial role to ensure education continuity.

### Box 17.1. Key points to keep in mind for a successful adaptation

1. Define all the needs with teachers, trainers and managers to lay the foundation for the necessary content, tools and services, but also the methods for communication, training and support at both the national and regional levels.
2. Convene all the players in the educational digital ecosystem (content and service providers) for sourcing before drawing up public contracts. Maintain constant dialogue to build and maintain good relations with all stakeholders.
3. Once the call(s) for tender has (have) been published, involve the field players in the design of the proposed resources, encourage local training initiatives and publication of the paths for use, put these players in contact with the stakeholders for feedback, suggestions for development or adaptation.
4. Impose open and international standards for the largest possible interoperability and retroactivity of solutions, taking into account audiences with special needs and a good understanding of learning traces and the use of school data.
5. Map and tag the resources according to your national curriculum (or local curricula) by grade, discipline and topic to make the resources easily identifiable by stakeholders and provide a variety of resources for multiple use cases.
6. Convince resource providers to open publicly (at least part of) their solutions, to give both teachers and national education managers as well as students and their parents an understanding of the potential and reality of activities within a framework of school confidence.

## Acknowledgements

Thank you to the French Ministry of Education, Youth and Sport and to all the education stakeholders that contributed to the deployment of the BRNE.

# 18 France: Network of digital education advisers

Stéphan Vincent-Lancrin, Senior Analyst, OECD

Type of intervention: governmental (ministerial, at national and regional levels)
Website: https://eduscol.education.fr/cid150648/ressources-numeriques-educatives.html

## General description

The French Ministry of Education, Youth and Sports mobilised its network of local digital education advisers (*délégués académiques numériques*) to support the transition from face-to-face to distant learning when school closure became a possible scenario then actually happened on 16 March 2020. France is divided into 30 education academies (or administrative districts) directed by rectors, who implement the national education policies at the regional level and interact with regional stakeholders that share legal educational responsibilities with the Ministry of Education, Youth and Sports. The digital education advisers advise the rectors of each academy, liaise with local authorities and companies on digital education matters, and lead actions and networks around the uses of digital tools in education. Beyond advising the rectors, they develop projects, actions and training and share and mobilise knowledge for teachers to become more active in the use of digital tools for learning.

The network of digital education advisers ensured the quick transition from face-to-face to online distance schooling with no days of interruption by:

- working with local authorities to lend and deliver computers and learning worksheets to all students

- mobilising existing repositories of curated online resources (notably the Digital Educational Resources Platform [BRNE], Eduthèque and Canotech)
- providing online training to teachers and school principals about the availability and use of digital resources for pedagogical practice
- sharing and promoting of teaching and learning practices adapted to educational continuity and progressive school reopening
- working with other public education partners on the deployment of their education continuity initiatives, notably the National Centre for Distance Education (CNED) and public TV and radio channels.

The originality of this initiative lies in the mobilisation of a network of education advisers with a good knowledge of past initiatives and strong relationships with all the major stakeholders in the field, enabling quick negotiations with partners, rapid communication and an understanding of the peculiarities of the different local contexts across the French territory.

## Main problems addressed

The digital education advisers had to address four main problems.

First, they made sure that French teachers in public and government-dependent private schools would be in a position to use their school's learning management system to interact with their students during the school closure. In some cases, this involved expanding existing learning management systems so that they would support or just be used for pedagogical purposes. While learning management systems have been available in French schools for several years, notably in secondary education, their active use by teachers for pedagogical purposes remained rare: their main use was for administrative functionalities.

Second, they ensured that all children and families without digital equipment could continue learning and liaising with their teachers during the school closure through the provision of digital equipment and paper learning worksheets.

Third, they trained and supported teachers (and school principals) in their switch to (online) distance learning. While teachers commonly use technology in their course preparation and sometimes ask students to use digital tools for some tasks, they are not used to teaching with a big digital component and needed help getting started as well as ideas about how they could teach at a distance and adapt their pedagogy.

Fourth, they enhanced the co-ordination and sharing of information and practices across the different academies and contributed to the deployment of other digital solutions provided by the government.

This solution mobilises past digital education efforts and infrastructure and scaled them up at a quick pace across the French territory. It contributed to other national governmental solutions, notably the CNED's "ma classe à la maison" (my class at home), "France nation apprenante" (Learning Nation France), and the broadcast of educational programmes on public TV and radio channels. This supplements other national initiatives (such as Canotech, including a curated library of education resources from pre-primary to upper secondary for students, parents and teachers, as well self-training resources for teachers) as well as local programmes by a variety of stakeholders.

## Mobilising and developing resources

The network of digital education advisers was created in 2013, when the French Ministry of Education established its new Directorate for Digital Education. The digital education advisers mainly work at the local level while the directorate works (with them) at the central level. This human infrastructure existed before

the COVID-19 pandemic so that education continuity could be implemented thanks to many pre-existing resources and competences. Qualified human resources specialised in the use of educational resources and tools for pedagogy represent the biggest asset of the network. Each French academy has at least one digital education adviser, with most having less than 15. Over the entire French territory, this represents hundreds of staff with appropriate skills who could be mobilised to prepare and oversee the transition in co-ordination with the ministry's Directorate for Digital Education.

The network could rely on other types of resources that were developed prior to the COVID-19 pandemic:

- ***Digital pedagogical resources.*** The Ministry of Education had already curated several repositories of thousands of downloadable pedagogical resources curated by grade and covering 14 disciplines for students from Grades 4-9 (French, maths, science, history and geography, and some foreign languages) (see BRNE). Teachers can access those resources using their professional identifiers or their school learning management system. Another similar resource was co-designed with public cultural and scientific organisations: Eduthèque (edu-library). It proposes a selection of the educational resources of the public partners curated against the French national curriculum, learning outcomes and standards.
- ***Use cases from digital education projects.*** One of the ordinary missions of the digital education advisers is to call for and fund projects around education involving digital components, be it fully on line or most often a part of face-to-face learning. Based on those projects, interesting practices and pedagogies related to digital education are documented in an online repository that is accessible by all (Edubase). Again, the database is searchable by topic, and by type and level of education.
- ***Dissemination of best practices.*** Some of the most interesting practices as well as results from research projects were already disseminated nationally and regionally through different information and training channels. This represented a readily available resource for teachers – but also for all digital education advisers.
- ***Some previous level of teacher training.*** All teachers had a statutory mandatory three-day training related to digital tools in education, so that many teachers in France had some exposure to digital learning tools (regardless of whether they use them or not in their usual practice). However, the deployment of this statutory training was still ongoing.
- ***Relationships.*** One key asset of the digital education advisers lies in their networks with local actors, from schools through to companies and research partners.

The school closure required the development of new actions to respond to the immediate needs of teachers, students and schools during the crisis.

- ***IT equipment.*** While French households have relatively good levels of connectivity and IT equipment, some students and families lacked a computer. In 2019, 76% of French households had a computer, 46% had a tablet and 95% a smartphone. According to a survey from the Ministry of Education, 272 000 primary and secondary students (out of 12.4 million, or roughly 2%) live in a household with no computer or tablet, 91 000 with no Internet connection, 130 000 with a blocked access to mobile networks and 37 000 with no smartphone. While this represents small percentages, the numbers remain high. The ministry established two partnerships with the public mail service: one to print, deliver and return paper learning sheets for students with no connectivity; a second to deliver the equipment lent by their schools or acquired by local authorities to the eligible families. The digital education advisers worked with local authorities to identify local IT needs and solutions, relying on the national partnership established by the ministry.
- ***Strengthening schools' learning management systems.*** While most secondary schools already had a learning management system with both administrative (absences, marks) and pedagogical functionalities, it was not fully universal and the digital advisers accompanied the shift by supporting the negotiation of new contracts with private providers. The digital systems in French schools were

initially designed and used in the spirit of a digital workspace (as their name in French indicates: *espace numérique de travail*) rather than a full learning management system.

- ***Training for the immediate needs of teachers and school principals.*** Many of the new actions consisted of training teachers and school principals in using the pedagogical functionalities of their learning management systems and, more broadly, in supporting them to use digital resources and to revisit their pedagogy in the switch to distance learning.
- ***Curation of additional resources and provision of a virtual classroom tool*** (in partnership with the CNED). Finally, in spite of the pre-existence of different banks of digital pedagogical resources, additional curation was carried out in view of their use in a new context. Moreover, the ministry's Directorate for Digital Education worked with the CNED to provide all teachers a virtual classroom tool ("my class at home") and with the public TV and radio services to have educational programmes broadcast (Learning Nation France).

## Fostering effective use and learning

As mentioned above, fostering the effective use of resources first took the form of ensuring that all students without a computer or connectivity before the lockdown could have the means to access the learning resources provided by the ministry and their schools after the school closed. This includes support to schools in using and enhancing their learning management system for pedagogical purposes.

The second aspect focused on providing training, disseminating knowledge and organising peer collaboration among teachers and school principals at the local level. The support given to teachers and school principals mainly took three forms:

1. ***Daily webinars.*** These were designed as training for teachers and school principals on a variety of topics, from how to access the different existing services, to how to use the resources and other tips about how to communicate with students and families.
2. ***Sharing of interesting uses of digital resources.*** The crisis offered an opportunity to share cases of pre-existing use of digital resources in different pedagogies, but also to share in real time interesting practices of schools and teachers during the crisis. Professional discussions among teachers were encouraged through various means (mainly using social network functionalities or dedicated professional learning platforms provided by the ministry such as Viaeduc).
3. ***Weekly FAQ.*** A "frequently asked questions" sheet was developed and posted on the ministry's website by its Directorate for Digital Education based on the questions answered during the week on digital education by different actors nationally and locally, including the digital education advisers.

## Implementation challenges

Several implementation challenges had to be overcome, and some are still ongoing.

A first implementation challenge related to budget and logistics. On the infrastructural side, the increased use of the learning management systems and the resources led to computing capacity limitations. On the logistical side, distributing the equipment was another challenge, but there was, and is still, a budgetary implementation challenge. A new partnership with foundations and existing school crowdfunding services is being explored to continue equipping students and families, also in the light of schools reopening. Finally, many primary schools do not have a learning management system, so distance-learning interactions with primary students had to be carried out through other means.

A second implementation challenge lay in the co-ordination of the many different initiatives developed by public actors alone at the national and regional level. This mainly took the form of good communication across actors and the involvement of the ministry's Directorate for Digital Education for many of them.

The third and probably main implementation challenge relates to teaching and learning: Ensuring the active engagement of teachers and learners and preparing the transition to a mix of distance and face-to-face learning after schools reopen. Distance learning raises new challenges for teachers: preparing new lesson plans for their courses; maintaining students' engagement at a distance over a long period of time; developing the learner's autonomy to learn; noticing and acting against different forms of "drop out", from lack of interest to active disengagement. In spite of the resources and the support given to teachers, students and families, this remains an ongoing implementation challenge.

## Monitoring success

However, some measures about the use of the developed resources show that those were used:

- ***Learning management systems:*** School learning management systems attracted on average around 7.1 million visits with an average of 55 million pages viewed every day (about 80% of secondary schools have access to a learning management system). In primary schools, most learning management systems were opened temporarily during the crisis, but several French departments are establishing them.
- ***BRNE:*** In the first two weeks of the school closures, 120 000 teacher accounts were created, the platform had 15 times more connections, 10 times as many sessions sent to students by teachers than before the closure and over 1.4 million exercises performed by students.
- ***My class at home:*** 2.5 million accounts have been created since the school closures, especially in primary education (1.13 million) and lower secondary education (0.8 million). On average, there are around 135 000 virtual classes a day (with use even during the weekend), with on average around 2 million unique participants a day.
- ***Canotech*** (educational resources): Four weeks after its launch, the platform has attracted over 130 000 unique visitors, with 600 000 consulted pages overall and 5 600 sessions every day.

No study has been conducted yet on students' learning and teachers' teaching during the school closure. They may come afterwards. *[Note of the Editor: The Department for Evaluation and Foresight at the French Ministry of Education conducted several statistical studies during the pandemic, which were published quickly after this note and are summarised in Schooling during a pandemic by Thorn and Vincent-Lancrin (2021).]*

## Adaptability to new contexts

This solution, which has a national scale in France, is easily adaptable in countries or contexts where ministries have had a policy around digital education in the past. In federated countries with several curricula, mutualising knowledge and educational resources across regional and local authorities as well as the knowledge of digital education advisers could easily be replicated.

The digital educational resources in French could also be used in other French-speaking countries, which is already happening in some African countries.

One specificity of the French context is the existence of a national curriculum and the pre-existing mapping of many educational resources on this curriculum. This may not be the case in countries where curricula are decided at the local or regional level. The crisis may, however, show that having a mapping of online digital resources on one's local curriculum may help in such circumstances.

The network of digital education advisers is meant to be sustained after the crisis as are some of the solutions that have been developed. Notably, after the school reopening, a mix of distance and face-to-face teaching and learning will be continued. The pedagogical use of the learning management systems should also be transformative.

### Box 18.1. Key points to keep in mind for a successful adaptation

1. Have a strong political will so that all efforts are aligned and move quickly and the budget can be easily redeployed to new actions and priorities.
2. Mobilise existing human resources on digital education and engage them in training and supporting actors at the local level, both on the local level and in negotiating or renegotiating contracts with companies and other actors.
3. Establish partnerships between different stakeholders and rely on existing links and networks at the regional and national level (ministry, EdTech companies, local and regional authorities, etc.), both to mobilise financial and human resources and solve logistical problems.
4. Provide curated platforms of educational resources, possibly mapped on your school curriculum (or by grade and discipline) and make them easily accessible.
5. Use school learning management systems to make digital educational resources available, but also provide more openly accessible resources for teachers, students and parents.
6. Provide teachers with virtual classroom tools (in addition to those possibly available through their learning management systems).
7. Accompany teachers and school principals by providing them with training sessions, curated materials supporting them for their teaching, peer-to-peer learning opportunities through social media and online learning resources, and sharing past and ongoing good and interesting practices.

## Acknowledgements

Thanks to Nathalie Herr, head of section at the Directorate for Digital Education at the French Ministry of Education, Youth and Sports, and many other colleagues in the ministry who provided information or made this note possible.

# 19 India: Arts for all, Slam Out Loud

Seep Agrawal, Communications and Partnerships, Slam Out Loud

Jigyasa Labroo, Co-Founder/CEO, Slam Out Loud

Gaurav Singh, Co-Founder/COO, Slam Out Loud

Sharon Zacharia, Education Technology Analyst (Consultant), World Bank

Type of intervention: non-governmental
Website: www.slamoutloud.com

## General description

Slam Out Loud (SOL) is an Indian non-profit that uses the arts along with multiple low-tech platforms to deliver support for arts-based socio-emotional learning and mental well-being to the most vulnerable children at scale. By offering localised, need-sensitive and engaging at-home audio, video, text and print resources for learners who have limited access to the Internet, it aims to lead children towards creative outcomes and build mental resilience during the COVID-19 school closures.

Within a few weeks of school closures, SOL rapidly adapted its interventions to create resources that are free of charge, interactive, and accessible in English and Hindi (and being translated into Punjabi, Tamil, Malayalam and Marathi) and made them available through various low-tech distribution channels (WhatsApp, interactive voice response systems [IVRS] and radio).

SOL launched a WhatsApp channel delivering arts-based socio-emotional learning activities directly to 70 000 children daily across 23 states within India as well as in 19 other countries. For children with Internet access, an at-home "Do-It-Yourself" styled theatre course is also available as video content accessible on-demand and hosted on its YouTube channel. For users without Internet access, Slam Out Loud

provides remote learning content through IVRS, radio and television platforms and distributes printed materials in collaboration with other non-governmental organisations (NGOs) and state governments.

## Main problems addressed

***Enhancing student well-being.*** To combat COVID-19, more than 180 countries mandated temporary school closures, leaving, at its peak in early April, close to 1.6 billion children and youth out of school (World Bank, 2020[1]; 2020[2]). The majority of India's 320 million students remained at home as part of the effort to fight the COVID-19 pandemic (UNESCO, 2021[3]). This situation is further increasing educational inequity and adding to the anxiety and stress levels of learners. One challenge that educators across the globe faced was addressing students' well-being during these times, with learner loneliness increasing due to lack of social interaction and creative output.

***Reaching students with varying access to technology.*** Nationally, only 24% of households in India have access to the Internet. Two-thirds of India's population lives in villages, and only a little over 15% of rural households have access to the Internet. For urban households, the proportion is 42%. This makes it challenging to reach a vast majority of children in India with remote online learning. However, India has more than 400 million active WhatsApp users. Just over half (53%) of phone users in India use non-Internet enabled phones (National Statistical Office, 2019[4]).

Given diverse levels of access to technology, SOL's intervention is designed to be flexible and to be hosted across different platforms to reach children in the most under-resourced areas.

## Mobilising and developing resources

***Building networks and institutional partnerships.*** Slam Out Loud leveraged its existing network and contacted multiple additional stakeholders, including various non-NGOs, schools, educators and parents to support equitable remote art learning for students across the country. Through a pilot project with the government of Patiala (India), it was able to disseminate art activities to over 140 000 children every day, via a systemic network of block mentors and teachers in the region. Teachers and mentors were introduced to art-learning content through virtual workshops, and were supported to cascade this to children within their schools. Content reached children in a top-down approach through block mentors and teachers, while their artwork was shortlisted at the mentor-level daily and shared with SOL via a bottom-up approach. Additionally, Slam Out Loud partnered with Gram Vaani's community media platform, Mobile Vaani, to disseminate art activities to children in an audiovisual format, thus enhancing art access for children with extremely low Internet bandwidth. The Boston Consulting Group made the high-quality content on socio-emotional learning available to over 40 000 children in the states of Madhya Pradesh, Jharkhand and Rajasthan. The collaboration with Leadership for Equity led to the art-based learning resources being uploaded on the Ministry of Education's and the National Council for Teacher Education's teacher training portal DIKSHA, and rolled out to 1.8 million students in Maharashtra. Thanks to those partnerships, Slam Out Loud could thus easily scale the programme without significant additional investment in human resources and technology.

***Leveraging the reach of WhatsApp.*** With 50% of India's Internet-enabled audience (over 400 million users) having access to WhatsApp, and a previous internal review finding that 75% of children in SOL's programmes have access to their parent's WhatsApp accounts for at least one hour a day, WhatsApp presented itself as the most immediate medium to reach children. Additionally, deploying WhatsApp content in various formats such as text, image, video and voice notes made for more equitable learning opportunities for children with diverse learning skills and needs.

***Using an existing repository of resources.*** SOL also leveraged its existing repository of resources and content principles (curriculum design, focus around children's socio-emotional learning and well-being) to address the remote learning needs of children during COVID-19. These resources were customised during the school closures for delivery over low-tech platforms such as WhatsApp and IVRS. Customisations were made to cater to the limitations of the platforms (the amount and nature of content that can be shared), data bandwidth and app access.

***Creating content that is context-relevant.*** Additionally, particular attention was paid to ensure the activities and tasks created and sent to students daily were contextual, addressed current challenges, required few resources and could be accomplished easily at home. Students received activities via WhatsApp but did not need digital resources to complete the activities.

## Fostering effective use and learning

***Creating high-quality arts-based experiences.*** Students received short tasks related to poetry, theatre, storytelling or visual arts daily via WhatsApp, and were encouraged to share their work with professional artists, peer groups and teachers and to reach out for support to the mentor assigned to them. The idea was to provide a creative outlet to students, allowing them to express themselves and build their artistic confidence to support their well-being and further develop their arts-based skills. Activities included puppet-making, writing poems, interviewing family members about what is most precious to them and writing stories about this, and producing drawings or paintings on a theme, such as "how are you feeling today?". Content was shared across platforms that were easily available to children, parents and educators – starting with WhatsApp and moving towards IVRS in audio format (available in English, Hindi and Punjabi).

***Using a creative confidence rubric.*** Slam Out Loud has developed a creative confidence rubric to help students, parents and teachers reflect on children's confidence in creative communication, critical thinking, collaboration, creativity, self-esteem and empathy. Children's art was published across its digital platforms and children received oral responses and feedback at the end of the automated scripted calls to encourage and assess growth in creative confidence (as part of socio-emotional and life skills).

***Incentivising participation.*** The programme also incentivised participation of children by rewarding them with titles such as "Artist of the day/week" and used qualitative surveys and recurrent follow-ups to measure participation and learning. Children's progress was also shared with their parents and teachers to keep them informed of the activities, as well as to create space for appreciation and support.

***Attending virtual workshops.*** Children were encouraged to attend virtual workshops organised by the organisation, which focused on their well-being, as well as to engage with their family members through activities at home. For instance, the theatre course allows children to learn the art of theatre within their own home, as well as to co-create meaningful experiences with their family members in the process.

***Consulting stakeholders, including students.*** A mix of focus group discussions and individual interviews with stakeholder groups, such as grant makers, government officials, NGO heads, teachers and students within India and across the globe were used to ensure that content was flexible, contextual and adaptable. The priority was to ensure children's safety and their parents' willingness for them to take part in the programme.

***Multi-layered quality assurance processes.*** Before deployment, all content is tested across three layers. First, two levels of content creators and experts review the material before it is shared with a sample of 300 children across WhatsApp groups to test engagement. Second, high-frequency oral diagnostics are used to assess rate of engagement and response along with text/WhatsApp-based assessments (powered by artificial intelligence tools) to monitor the quality of responses and subsequent growth on creative confidence aspects. Third, qualitative surveys of stakeholders (teachers, parents, government officials) are

also conducted to monitor growth in an art-proficiency rubric. Growth in the organic user base is assessed through tech-generated analytics on usage.

## Implementation challenges

The key challenges Slam Out Loud faced, along with how they were mitigated are:

- ***Market.*** Art learning through low-tech platforms was not being used at scale before this point. SOL created a scaled market through institutional and governmental partnerships, such as with the governments of Patiala, Gujarat and Punjab; the State Council of Educational Research and Training; the Ministry of Human Resources Development; Gram Vaani; Boston Consulting Group; and Leadership for Equity. These systemic partnerships enabled it to disseminate art-learning resources to children in the respective states where these partners were operating.
  - ***Operations.*** Content production requirements steadily increased with the programme process. This was addressed by consistently introducing new volunteer cohorts who specialised in content creation, along with subsequent capacity building of existing volunteers.
  - ***Finance.*** The application-programming interface (API) for IVRS requires largely tech-heavy platforms, which increase project costs. Given its financial constraints, SOL relied on institutional partnerships to cover part of the costs. For example, a tech-based non-profit (assisting the setting up of a WhatsApp API), subsidised rates from an IVR vendor and implementation partners to pay for the printing and distribution of physical copies of learning resources.
- ***Regulations.*** Since SOL's primary beneficiaries were children, it was paramount to ensure that parental permissions and individual data protection were focused upon. Child protection regulations vary across countries, which added a challenge when it expanded to countries other than India.

## Monitoring success

***The reach of the initiative.*** Within the first month of the WhatsApp channel, the initiative gained 521 NGO representatives from organisations such as Room to Read, Aga Khan Foundation, Dream a Dream, Piramal Foundation, Teach For India and many more, and school partners such as Essar International School Surat, government and semi-government schools across Punjab, Delhi, Uttarakhand, Himachal Pradesh and several more Indian states along with more than 500 individual subscribers (comprising parents, educators across the world and children themselves). Through a cascaded model, each NGO, school partner and educator further distributed activities received from Slam Out Loud in their own contexts and geographies, thereby taking the reach to more than 70 000 children daily (as identified by an internal survey to determine reach) across 23 (out of 31) Indian states and 19 countries.

SOL offers content in Hindi and English and has also translated content into four more Indian languages (Punjabi, Tamil, Malayalam and Marathi) to make it accessible to vernacular speaking children. The educational body of the state government of Gujarat, the Gujarat Council of Education Research and Training, has added the remote learning content to its state-wide remote learning packets. In June 2020, the remote learning initiatives were scaled to three more Indian states: Madhya Pradesh, Rajasthan and Jharkhand. The collaboration with the government of Patiala led to an eight-week long pilot project, disseminating art activities focused on socio-emotional learning to over 140 000 children (as determined by the Patiala government) daily. Further, they also collaborated with grassroots initiatives such as Gram Vaani (an audio-based social media over IVRS) to reach children in Bihar, Jharkhand,

Madhya Pradesh and Uttar Pradesh in India and are also in discussion with two more Indian state governments to further scale their initiatives and reach many more Indian children.

***Recognition.*** SOL's aggregate partners and organisations, such as Girl Rising, HundrED and Give a Hand have highlighted this remote learning solution as one of the most innovative educational responses to the COVID-19 crisis.

***Assessing engagement.*** Content with the highest engagement on SOL's WhatsApp channel is posted on YouTube. This, along with tech-generated analytics on usage and responses, helps assess the rate of engagement and response (through number of response videos, audio clips and artwork created) as well as their quality. For instance, through SOL's eight-week pilot project with the government of Patiala, children created more than 460 artworks and 120 response videos. During the pandemic, more than 100 000 artworks, comprising audiovisual responses of children's poems and stories, have been created as part of the programme. SOL also monitors completion of courses, and number of viewing hours (currently about 45 hours for DIY:Art videos as determined via YouTube Analytics) on content-hosting platforms such as YouTube and collates testimonials of users completing the courses to further inform content creation and delivery.

## Adaptability to new contexts

Individuals and organisations in 19 countries already subscribe to Slam Out Loud's initiative. The intervention is largely replicable across any space within the English-speaking population, and countries can also further customise the programme to suit their context and translate content into languages other than English. The learning content is age-appropriate and applicable to children across contexts.

The initiatives will continue to be sustained beyond the COVID-19 crisis. Through government level and institutional partnerships, SOL aims to advocate for socio-emotional learning to be adopted as a key component in educational systems, and provides a replicable example of how low-tech resources can be used to implement arts-based remote learning with a focus on the development of socio-emotional learning.

### Box 19.1. Key points to keep in mind for a successful adaptation

1. Interventions should require few resources and ones that are easily available to enable access for as many children as possible.
2. Pre-existing technology such as WhatsApp, radio and television should be leveraged, particularly for children with limited access to the Internet.
3. Community members should be involved and regularly updated on progress, including the children's parents and their primary educators.
4. The chief concern should be ensuring children's safety, that parents give permission for children to be involved and that data regulations are carefully followed.
5. Mechanisms to provide feedback to children should be created, so that they receive suggestions for development and appreciation for their work to build confidence and skills throughout the programme.
6. It is important to ensure that all learning resources are relevant to the context and simple to understand, keeping in mind where the children who use them come from and what they most relate to.

## Acknowledgements

Deep gratitude goes to the team at Pratham Education Foundation for their support on our "Do-It-Yourself" styled theatre course.

## References

National Statistical Office (2019), *Key Indicators of Household Social Consumption on Education in India*, http://mospi.nic.in/sites/default/files/publication_reports/KI_Education_75th_Final.pdf. [4]

UNESCO (2021), *Global monitoring of school closures caused by COVID-19*, https://en.unesco.org/covid19/educationresponse. [3]

World Bank (2020), *Pandemic threatens to push 72 million more children into learning poverty: World Bank outlines a new vision to ensure that every child learns, everywhere*, https://www.worldbank.org/en/news/press-release/2020/12/02/pandemic-threatens-to-push-72-million-more-children-into-learning-poverty-world-bank-outlines-new-vision-to-ensure-that-every-child-learns-everywhere. [1]

World Bank (2020), *World Bank education and COVID-19*, https://www.worldbank.org/en/data/interactive/2020/03/24/world-bank-education-and-covid-19. [2]

# 20 India (Madhya Pradesh): #Learning will not stop

Garima Batra, Partner, Boston Consulting Group

Aditi Nangia, Programme Manager, Central Square Foundation

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: governmental (Madhya Pradesh, India)
Website: https://www.vimarsh.mp.gov.in

## General description

Madhya Pradesh, a state in central India, has almost 16 million children enrolled in over 154 000 schools spread across 52 districts, including 10.7 million children in rural areas. Fifty-nine per cent of all students are enrolled in government-run schools (Ministry of Education, 2021[1]).

In 2017, with the support of the National Institution for Transforming India (NITI Aayog, the government's policy think tank), the government of Madhya Pradesh implemented the Sustainable Action for Transforming Human Capital in Education project for the systemic transformation of elementary and secondary school education. Knowledge partners, the Boston Consulting Group and Piramal Foundation for Education Leadership, were chosen to facilitate project implementation, data collection and review. The project's main goals included improving students' access to large, well-resourced schools; building capacity to improve learning; and strengthening governance to monitor and deliver better outcomes. Over three years, the project implemented the Dakshata Unnayan learning enhancement programme in 110 000 elementary schools and 9 000 secondary schools, app-based academic monitoring, data-driven accountability systems, teacher professional development, and consolidated 35 000 schools to 16 000

well-resourced schools in the state. Some of the partners involved in implementing these programmes include Avanti learning, Central Square Foundation, The Education Alliance, Pratham, Peepul India and the United Nations Children's Fund (UNICEF).

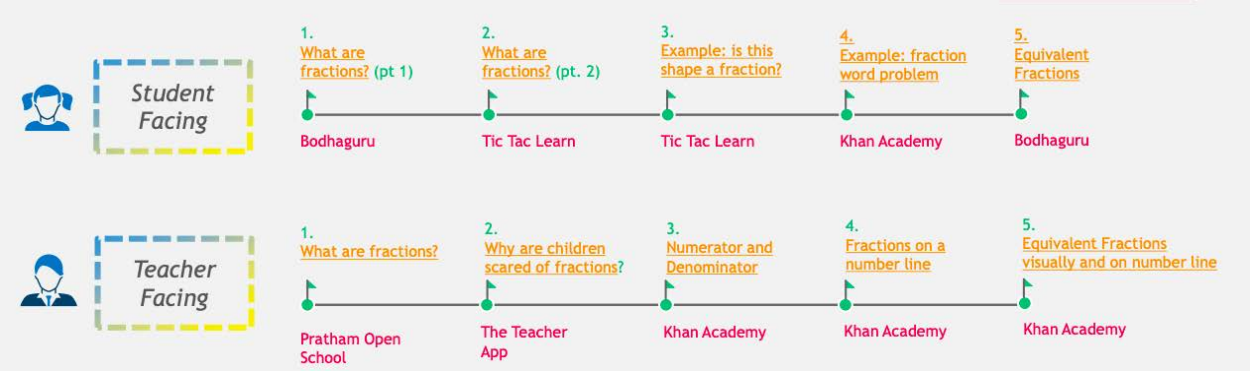
COVID-19 led to prolonged school closures in Madhya Pradesh in March 2020, resulting in the loss of about 60 school days during the 2019-20 academic year (as of August 2020). Under these circumstances, Madhya Pradesh continued improving learning through digital and non-digital programmes under the campaign #ab padhai nahi rukegi (# learning will not stop). The non-digital programmes for students include school lessons on the radio for primary school children (Grades 1-8); educational television programmes for secondary school children (Grades 9-12); as well as books, worksheets and one-on-one teacher interactions for all grades. The digital learning component, the "Digital Learning Enhancement Programme" (DigiLEP) shares curated learning material for all grades through WhatsApp groups. The CM RISE digital teacher training programme was launched to support online teacher professional development. The TopParent App was launched to help parents monitor primary school students' learning.

## Main problems addressed

Ensuring learning continuity and avoiding learning losses while minimising the divide between those with digital access and those without was the main objective. Abrupt school closures due to COVID-19 revealed that the majority of children in India had poor access to digital devices (and thus online learning materials). In Madhya Pradesh, 35-40% parents have access to smartphones (The Economic Times, 2020[2]). Given low data connectivity and the limited number of smartphones in every household (one smartphone per household with two to three children and two adults), conducting online live classes was not a viable option. While radio and television programmes offer a wider reach (over 65% of the population in Madhya Pradesh has access to a TV), they limit the two-way interaction necessary for effective learning and feedback, are susceptible to power cuts, and do not offer the convenience of pausing and revisiting content. WhatsApp has near ubiquitous presence amongst those who possess a smartphone with Internet in Madhya Pradesh. It was hence chosen as the key medium to reach children with digital content. The advantage of WhatsApp is that it offers a two-way interaction and has a wider reach, even though it also requires access to smartphones and Internet connectivity. However, the state decided to adopt an omni-channel approach and provide digital content via all of the channels mentioned above to ensure maximum reach, acknowledging the pros and cons of the various options. In addition, to reach out to students who did not have access to any of the above communication channels, the state rapidly distributed workbooks that were initially created for its Dakshata Unnayan programme, focusing on foundational literacy and numeracy.

The challenge was twofold in disseminating the digital material. First, resource libraries with high-quality content had to be curated for all grades. While more than 100 organisations develop content in India in Hindi, high-quality free content had to be curated from various libraries to ensure that there was a series of short videos available to learners on every topic. For example, there is a series of short videos from a variety of sources on fractions, as illustrated in Figure 20.1.

### Figure 20.1. Sample sequence of video bytes curated for DigiLEP




Source: DigiLEP

Second, before COVID-19, the state department did not use WhatsApp to communicate with students and parents in government schools. Neither did most government schools and teachers. In order to disseminate these videos, the state had to create WhatsApp groups for every school, cluster and district: over 50 000 WhatsApp groups were created in a few days and have since been managed and monitored to ensure the availability of digital learning content and learning plans to parents and students.

## Mobilising and developing resources

Most of the material for the programme was curated from existing platforms and packaged to meet the needs of the state. The new resources/products and services launched included the CM RISE teacher training portal, the Top Parent app and TicTacLearn video library.

### *Non-digital learning materials (radio, TV and workbooks)*

The radio school programme was launched on 1 April 2020, seven days after the lockdown, with stories in English and Hindi broadcast every day for 1 hour from 17 radio stations in the state. The radio programme content was curated from radio school content that was previously broadcast by the state government and also included material curated by UNICEF. The programme's first story was narrated by the Chief Minister of Madhya Pradesh, Shri Shivraj Singh Chouhan, to emphasise the importance of learning continuity.

The other learning methods are through educational television programmes and workbooks. TV content for Grades 9-12 is broadcast every day for two hours on local cable television channels. Additionally, four of the state-owned television channels (Doordarshan) broadcast content for students in these grades for an hour every day since 11 May 2020). Broadcast of 20-minute content for basic English was added each day from 22 June. To the extent possible, the sources of content broadcast on TV and those sent via DigiLEP WhatsApp groups is the same.

Teachers distributed the Dakshata Unnayan (competency enhancement) programme's workbooks to students' homes. These workbooks, reused during the COVID-19 lockdown, were originally printed for use in school and provide practice material to improve foundational competencies.

### *Digital learning materials*

***Resources for students.*** Competency-aligned videos for Grades 1-12 were curated as part of the DigiLEP video library and launched on 9 April 2020 by the Chief Minister. (DigiLEP is the Digital Learning

Enhancement Programme launched to support online studies in the state.) High-quality content from existing service providers, such as Khan Academy, Pratham Open School, Bodhaguru, The TeacherApp, Avanti Learning, etc. and new video libraries, such as TicTacLearn, were mapped to key competencies for these grades to ensure that learning continued during the lockdown. The TicTacLearn video library was developed by Central Square Foundation, in partnership with Google.org. It was launched in April with over 10 000 high-quality videos for mathematics and science in 5 languages. The byte-sized video sequences curated for the DigiLEP programme provide topic-wise seamless learning experiences for all subjects, and include a variety of examples and activities. The DigiLEP library and the learning apps are disseminated through WhatsApp and the existing national DIKSHA portal run by the government of India. The cascade method of dissemination through WhatsApp groups across multiple levels reaches grade-specific parent-teacher groups, where a 20-minute lesson or educational sequence is shared every day at 9 a.m. Boston Consulting Group co-ordinated the curation efforts as part of the ongoing Sustainable Action for Transforming Human Capital project mentioned above.

***Resources for teachers.*** The CMRISE digital teacher training programme was launched on 1 May 2020 for teachers to access digital training content and develop their skills during the school closure. The modules include training in general classroom pedagogies and teachers receive a certificate upon completion of a course. The two courses launched in May were an “introduction to the training” and understanding “the role of a teacher”. The portal aims to develop teachers’ skills in navigating digital learning, support children during the COVID-19 crisis, prepare for school reopenings, educate children on COVID-19 and support them with the transition once schools reopen. Peepul India, an NGO, supported the state in developing the content for teacher development, which is delivered on the national DIKSHA portal.

***Resources for parents.*** A free learning app accessible on mobile phones and tablets was launched on 9 April 2020 for parents to engage with their children’s learning journey. Top Parent is a unique free mobile app in Hindi that empowers parents with knowledge, language and strategies on child development to help them meaningfully engage with their children between the ages of 3 and 8. Top Parent builds parents’ skills as educators by providing simple day-to-day solutions via videos and games, and recommending easy and free digital solutions for their children’s learning needs. The app can be accessed on mobile phones and tablets, and recommends fun EdTech solutions such as Google Bolo, Math Masti (based on XPrize winner KitKit School) and Chimple (Xprize finalist) for children to continue learning their letters and numbers without missing out on school.

## Fostering effective use and learning

The central curriculum team in the state has been disseminating messages to District DigiLEP WhatsApp groups targeting district and block level education officers in the state along with cluster level officials, who in turn have their own WhatsApp groups with school principals and teachers to disseminate daily messages. (Clusters and blocks are administrative levels in the state.) A dedicated WhatsApp helpline has been added to all 3 000+ WhatsApp groups for monitoring, and video messages were circulated to set norms at the beginning of the exercise. In addition to WhatsApp, the material is uploaded on the DIKSHA platform, where lessons are packaged into courses and sent out to teachers with clear targets and deadlines. After about 8 weeks, there were 51 000 WhatsApp groups with almost 2.1 million parents. However, only 600 000-700 000 students have watched the videos shared with the groups on any given day. This number has been rising continuously through consistent communication campaign by the state, but points to the challenges in the field, which are elaborated subsequently: awareness, motivation, technical and various other challenges given the COVID-19 situation amongst the target segment of the population.

The key mechanisms used by the state to enhance uptake and learning include:

- ***Constant communication via field staff as well as mass communication channels.*** Large-scale video conferences with district officers explaining their roles, direct webinars for teachers, mass media like radio and television jingles, etc. were all used to communicate the campaign agenda. The leadership in the State Education Department, including the principal secretary, state project director, etc., addressed teachers in large-scale teacher webinars for the first time. These measures also included local level innovations for communication such as painting on the walls of schools, use of a travelling loudspeaker to broadcast the message to parents, etc.
- ***Facilitating teacher-student engagement.*** Teachers were asked to call five students every day to help them access the learning material and answer any queries. This communication is tracked via a simple Google form and the central analytics team derives accountability indicators on a daily basis. This measure was found to be key in ensuring the growth of material viewership.
- ***Strong monitoring and accountability system.*** District level DigiLEP cells were set up to ensure that the learning content reaches parents on time, and to monitor the WhatsApp groups for spam. They report feedback to the central team.
- ***Randomised calling via call centres.*** Large-scale randomised calling was set up at the state level to get feedback from teachers, parents, field officers, etc. to continuously understand and get feedback on the implementation on the ground and to collect stakeholders' views. The call centre speaks with over 500 teachers and parents every day. Initial estimates in early May 2020 suggested that 75% of parents had minimal awareness of the programme despite the efforts to build salience among parents, which led to enhanced communication and publicity efforts.

## Implementation challenges

The main implementation challenge related to adoption of the proposed learning solutions.

Estimates suggest that anywhere between 600 000 and 1.1 million parents and their children could be engaged through digital learning programmes. This corresponds to about 7-10% of the state's total school enrolment. In the first week or two of the programme, this number stood at 200 000, and the key constraining factors were low awareness among parents about the programmes, low levels of motivation and technical challenges.

***Awareness.*** Feedback in early May 2020 collected through random phone calls by the state call centre suggested that some parents who had been added by the state's cluster officials to the WhatsApp groups were not aware of the purpose of the group. Others were aware of the group's purpose and were receiving study material but had not internalised its importance and were thus either inconsistent or not motivated enough to share their mobile phones with their children. Finally, a share of parents also had technical challenges with data and connectivity. Over time, with consistent field communication and publicity efforts, as well as the activation of the daily teacher-student and teacher-parent engagement measures described above, the awareness and motivation issues were tackled. However, viewership still remains below 10% of enrolment numbers.

***Digital divide.*** This primarily points to the digital divide, which is indeed significant. The number of parents with smartphones with Internet as well as sufficient data packages is limited. Even when it is the case, most families have one phone for three children, making it difficult to allocate time for all the children to study on line in a "home" setting, which further often takes place in the presence of other children and adults.

***Perception of online learning.*** Further, parents' perception of online learning through smartphones was not always as positive as their perception of face-to-face learning. Building more respect and serious commitment to this form of learning needs to be continually enhanced to enable better usage of the learning contents shared through the programme.

***Teachers' multiple responsibilities.*** Finally, teachers have been key for driving viewership numbers up in the state. They have been calling their students, delivered workbooks and engaged in teacher professional development, but given their various additional responsibilities related to COVID-19, such as the contact tracing of patients, teacher-student engagement has not fully materialised.

As the summer vacation period ends, and if schools remain closed over the next month or two, strengthening teacher-parent and teacher-student engagement will be key to improving the programme's results. On the positive side, there is clear evidence that a behaviour change will set in during this period with respect to greater acceptance and appreciation of digital learning tools and the benefits it can provide among parents, students and teachers. This will inform the state's future digital efforts. On the content side, the curation effort led by the Boston Consulting Group has revealed gaps in content for language learning in primary grades as well as for non-science subjects in secondary grades.

## Monitoring success

The programme has reached many stakeholders, including parents and teachers who were previously connected through digital platforms for education programmes. Within 2 months, 51 000 WhatsApp groups were created with over 1.9 million parents and 200 000 teachers. This success is unprecedented for the state, and could continue to serve as a useful communication channel between parents and the school as schools reopen in the coming months. The accountability systems have ensured that parents are continuously added to these groups, and feedback through the call centre has provided useful insights on parents' engagement. The state has been using this information to develop localised measures to increase use.

Teachers are continuing to engage in both COVID-19 responses and education programmes. More than 250 000 teachers enrolled in the CMRISE training programme and over 95% completed the first training module.

While the non-digital interventions cannot be tracked precisely, the metrics to monitor the implementation success of the DigiLEP programme are:

- Number of parents: The objective is to increase the reach of parents: 2.1 million parents have been added to the groups so far (starting from about 1.3 million in the first two weeks of the programme).
- Minimised spam messages on the WhatsApp groups through randomised monitoring.
- Percentage of teachers who report calling and engaging with five students every day.
- Overall number of students viewing resources on the DigiLEP, including a tracking of grade and subjects and split across various districts to drive district-specific strategies and action.

## Adaptability to new contexts

To build on existing efforts, Madhya Pradesh will continue to use these resources and platforms once schools reopen.

From July onwards, as the summer vacation period ends in the state and the new academic year resumes, this initiative will expand to the Hamara ghar hamara vidyalaya ("Our Home Is Our School") programme. This programme will supplement ongoing online efforts (such as the DigiLEP content) with offline content,

since the new year's textbooks and workbooks will now reach students by door-to-door delivery. The state plans to develop and share weekly self-study plans for students, with digital content synchronised to the same learning goals and with continued structured teacher-student engagements to support the students.

Madhya Pradesh will continue a blended learning model for students, digital training for teachers to self-learn skills and leverage parents as co-educators to enable learning at home even after schools reopen and is currently developing its long-term digital strategy.

Once schools reopen, the digital library and WhatsApp communication channels can be integrated with in-class instruction, and leveraged to reinforce everyday lessons, especially since the upcoming academic year might have staggered school days, or regular periods of lockdowns and school closures. In Madhya Pradesh, the programme will be extended to enable a blended learning model for students, digital training for teachers to develop their skills, and the education department will continue to leverage parents as co-educators to continue learning at home.

This initiative is already provided at scale in a very large state of 73 million inhabitants, with the living conditions of a lower middle-income region. It is thus applicable to other similar countries and regions. Within India, the model has inspired other state-level approaches. The Boston Consulting Group worked with the education departments in the state of Rajasthan, Jharkhand and Odisha, where similar programmes are being implemented.

Additionally, all the DigiLEP material is available for use in all Hindi-speaking regions in India and is being implemented in Haryana, Himachal Pradesh, etc.

### Box 20.1. Key points to keep in mind for a successful adaptation

1. Develop both digital and non-digital programme components to ensure that all children have access to learning material and support.
2. Establish clear communication channels and accountability mechanisms to ensure the content reaches the intended recipients.
3. Promote consistent interaction between teachers and parents to explain and follow up on learning materials shared on WhatsApp (or other communication channels) and drive engagement on a daily basis.
4. Track and monitor progress continuously on key indicators from day 1, and relay performance back to the field officers via district-wise dashboards.
5. Connect with teachers, district officials and school principals through district and state level events over videoconferencing to boost morale, communicate expectations and progress.
6. Encourage local dissemination strategies to increase usage of learning material, engage district commissioners to reinforce expectations and use mass media to publicise programmes to parents.
7. Encourage and develop guidelines for one-on-one interactions through phone calls, material delivery, competitions over WhatsApp, etc., to ensure frequent teacher-parent and teacher-child interaction.
8. Provide professional development for teachers to adapt to digital learning, prepare for school reopening and support students once they are back in school

## Acknowledgements

Profound gratitude to Rashmi Arun Shami, Principal Secretary School Education, government of Madhya Pradesh and Ratan Guha, Noopur Abhishek and Gouri Gupta from Central Square Foundation.

## References

Ministry of Education (2021), *U-DISE (Unified District Information System for Education)*, http://dashboard.seshagun.gov.in (accessed on 2 September 2021). [1]

The Economic Times (2020), *Studying on smartphone: WhatsApp becomes popular medium of learning*, https://economictimes.indiatimes.com/industry/services/education/studying-on-smartphone-whatsapp-becomes-popular-medium-of-learning/annual-survey-of-education-in-rural-areas-2020/slideshow/78928976.cms. [2]

# 21 India: Reality gives

Suman Barua, Director of Education, Reality Gives

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: non-governmental (no public organisation in lead role)
Website: www.realitygives.com

## General description

Launched in 2009, Reality Gives is a community-based non-profit organisation providing children and youth from poor urban communities access to quality education in India. Its school and youth programmes reach over 1 000 young people living in the slums of Dharavi (Mumbai) and Sanjay Colony (New Delhi) every year.

The School Programme has 1 school leader and 30 teachers, and is aimed at children aged 3-10, from pre-school up to 4th grade. The classrooms are child-centred, inclusive and apply an experiential pedagogy.

Reality Gives' flagship programme – Youth Empowerment – gives youth aged 16-35 from the slums an opportunity to learn English in order to close the employability skills gap. In partnership with experts from the United Kingdom and local community champions, Reality Gives developed a curriculum through a cyclical process of identifying needs, comparing international standards, then bridging the gap given the local context.

Reality Gives' management decided to close its centres as of 16 March 2020 to protect its students and staff. The project is based in the slum community of Dharavi, which is a hotspot for tourists, making the population more susceptible to contracting COVID-19.

When the government of India announced a nationwide lockdown on 24 March, it became clear to the programme team that their centres would remain closed for a long time. They also realised that they would need to innovate and come up with a new programme designed for online learning as their current curricula were designed for classroom teaching.

The team analysed the situation, taking stock of the available technology infrastructure, talking to students and testing prototypes. They finally found a suitable programme that could work for everyone in their context, using WhatsApp as a means to provide lessons – rather than live streaming options like Zoom or Facebook. After one month of distance learning, the students were satisfied and some hidden benefits emerged, such as more individual feedback for learners.

## Main problems addressed

With the closure of Reality Gives' centres and classes, English language learners were not able to practice and improve their language skills. Most of the students are first-generation English language learners, and their community sees little or no interest in the use of English. With classes disrupted, students might forget all they have learnt over many months.

Moreover, the students live in very small spaces in the slums, with anywhere between four and ten family members living together. This leaves little room for self-learning. COVID-19 exacerbated the situation, creating more stress and susceptibility to mental illnesses. Families that rarely spent time together because of their hectic lives in Mumbai were now forced to be with each other night and day.

Reality Gives realised that intellectual engagement, especially with a subject that students already enjoyed learning, might help to keep them busy and their minds healthy.

The team came up with the following features of the new programme design:

- ***Simple to deliver.*** Given the limitation of how much time youth can spend learning on their phones, the information needed to be delivered in small, concise packets of knowledge.
- ***Engaging.*** The classes have to be fun, interesting, attractive and useful for the learner.
- ***Address needs.*** In addition to English, it should provide a platform supporting mental health.
- ***Balance.*** It needs to have an equal combination of online stimuli and work for students to do offline to account for their different paces of learning.

## Mobilising and developing resources

Reality Gives analysed the resources it already had. There was a team of seven experienced English teachers; a comprehensive and contextual English as a second language curriculum, implemented for the past four years; staff, including managers and administrative assistants, in charge of co-ordinating activities; and partnerships with various organisations providing workshops that help students grow.

All students' information was already registered in the organisation's online monitoring and evaluation system, making it easy to connect with them.

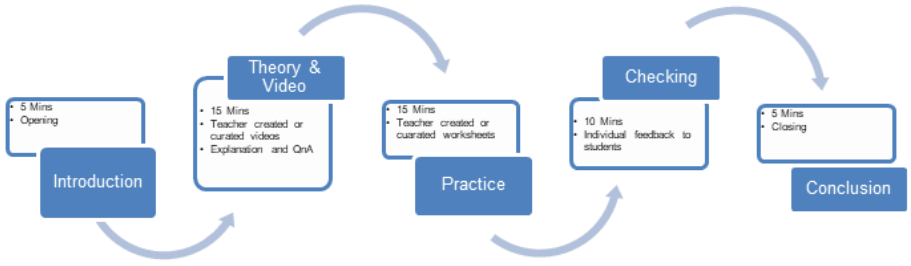
Next, they had to evaluate the available technology. Over the past few years, India has benefited from extremely cheap data rates for mobile phones. Moreover, most of the targeted youth have their own smartphones. However, testing showed that there were issues with Internet connectivity and dropped calls. The team had to develop a pseudo-live programme instead of providing lessons in real time.

After considering Zoom and Facebook Live, the organisation chose WhatsApp to deliver lessons. Since everyone was already using it, it would take the least amount of time to learn how to use the different features.

Then, they had to decide how to structure the lessons. The current curricula were designed for two-hour in-person lessons a day. After studying the content, each level was broken up into 30 one-hour classes. To ensure that the classes did not go on for months, only the most vital components were kept. To allow for individual feedback, the classes were capped at ten students each (the limit of in-person class was set at 18).

A new class flow was created that divided time between online and offline work.

### Figure 21.1. New class flow




## Fostering effective use and learning

Once the design was ready, the teachers began fitting the divided curriculum into the new, shorter modules.

In parallel, the managers provided feedback on the lessons, and spoke with their partners regarding possible workshops to support mental health needs, COVID-19 awareness, etc.

Students and teachers are participating in these daily one-hour WhatsApp classes, using text, voice notes, videos and a mark-up feature.

The students' initial response to the digital delivery of lessons has been very positive. Students are asking a lot of questions and are receiving individual feedback. Teachers and students find that these lessons are a welcome change from their daily lives.

## Implementation challenges

The organisation faced some initial challenges while setting up the programme.

- ***Planning the lessons.*** The first challenge was converting two-hour in-class lessons into one-hour online ones. The team struggled to condense the lessons while keeping the same quality in terms of pace and opportunities for students to ask questions.
- ***Technological challenges.*** Teachers and students initially struggled with Internet speeds, which were drastically slower than before the lockdown because of the increased number of people in the area. They also had to adjust to features on WhatsApp that they had not used before, such as audio notes and "mark-up". Moreover, for the first time, teachers had to learn how to create and store lessons digitally.
- ***Setting boundaries/privacy.*** Due to the urgency of the situation and in order to facilitate connecting teachers with students, teachers created WhatsApp groups using their personal phone numbers. This created a direct channel between the students and teachers. Although this was a

way to build a positive relationship, it was challenging to maintain boundaries. Students were texting and asking for help anytime they liked, making teachers feel like they were working all the time. It was important for the team to implement rules for communication to avoid that.

- ***Lack of motivation because of the lockdown.*** Another issue was that the staff, teachers and students were not as motivated due to the conditions imposed by the lockdown. The situation in Mumbai and Delhi was a slow, steady climb; the end of the situation was nowhere in sight. An overall feeling of "What's the point?" developed. It is not a very tangible challenge, but nonetheless a real one.

## Monitoring success

Given the state of complete lockdown, the organisation prioritises engagement. Without the online programme, students will not be able to improve their level of English. With the programme, students can practice English from their homes. Thus far, the measures of success are flexible and focus on short-term goals.

- ***Participation.*** How many students are participating in the online programme out of the number that would normally participate in in-person classes? An initial evaluation estimated about 80%. The organisation's overall goal is to reach 100% of students, but the initial goal is to work towards achieving 80% consistently.
- ***Completion.*** How many students are able to complete the short modules, and how does the completion rate compare to what would be normally achieved through in-person classes?
- ***Student satisfaction.*** It is important for the students participating to be satisfied with the programme. Reality Gives will survey the students every other week to evaluate their satisfaction and their experience in order to improve the programme.

## Adaptability to new contexts

Reality Gives' programme is transferable across many contexts: in an urban slum context for students from low-income backgrounds, and anywhere where data rates are inexpensive and everyone has a mobile phone. Students and teachers also need access to an app, such as WhatsApp or one that young people commonly use, as a means of communication.

It would work in organisations where teachers and staff are willing to try something new and take risks. They would need to adjust to new dimensions in their roles and be comfortable with being in direct contact with students and mature enough to handle young adults. The organisation should be well connected to community members and able to invest in the youth without being in physical contact.

Reality Gives' solution is highly scalable in India. Once all lessons are ready, it will be a matter of a click-and-send. The number of students that can participate depends on how many teachers are on board and how many hours they can devote to their students.

There is value in exploring this design after the COVID-19 crisis. Initial feedback shows that this programme might not be able to replace in-person classes as learning outcomes are better. However, online sessions could supplement actual class time to push students to a higher level and achieve their learning goals faster.

### Box 21.1. Key points to keep in mind for a successful adaptation

1. Before starting the process, take stock of resources – in terms of both tangible resources, such as technology, and more intangible ones, such as the staff's skills, etc.
2. Given the situation, conveying a sense of urgency is fine, but do not compromise on compassion. No one knows how long the journey back to normalcy will be and staff need support in the long battle ahead.
3. Take stock of the percentage of students that will benefit from the programme. It does not have to be 100%. In the current situation, a majority of students participating is better than nothing.
4. Take advantage of the staff's strengths. Maybe some of the teachers cannot type out the lessons, as they do not have a computer, so distribute the work to another teacher who has time and a computer.
5. Before the rollout, try with just one batch of short modules in order to tweak the process before rolling the lessons out to all the students.
6. Management should check in regularly with the team that is working on the transition and implementation, and focus on the support they need.
7. Implement monitoring systems in the spirit of a learning rather than reporting activity. Initially, this will be an experiment, and it is fine to take some time to improve it.

## Acknowledgements

Thank you to Ravi Kumar, Manager; Marchang Rangshingla, Manager; and Letizia De Martino, Executive Director, all from Reality Gives.

# 22 India (Telangana): Remote learning and village learning circles for disadvantaged students

Sharon Zacharia, Consultant, Education Global Practise, World Bank

Type of intervention: governmental
Website: https://www.tswreis.in

## General description

As a result of the spread of COVID-19, a strict national lockdown was announced in India on 22 March 2020, during which movement was limited to only essential services. All students at schools run by the Telangana Social Welfare Residential Educational Institutions Society (TSWREIS) were sent home the next day from their residential schooling premises. On 20 April 2020, less than a month after the school closures, the TSWREIS schools began to deploy remote learning strategies to ensure the children they serve, who were already at a disadvantage as they belong to marginalised communities, were able to continue their learning.

TSWREIS is an autonomous body under the Scheduled Caste Development Department of the state government of Telangana. It runs residential educational institutions with the primary objective of providing high-quality education to children of scheduled caste communities in Telangana. Scheduled castes are one of the most disadvantaged and marginalised socio-economic groups in India.

The TSWREIS educational institutions follow a “plate to slate” approach: their residential schooling provides holistic support to students spanning education, food, sanitation and clothing, among others. Its schools reserve 75% of seats for scheduled caste communities and the remaining seats for other

marginalised groups (e.g. scheduled tribes, backward classes). TSWREIS is an autonomous organisation which provides it a high degree of operational independence.

As of 2020, TSWREIS runs 268 English medium residential educational institutions serving Grade 5 to undergraduate level programmes, supported by approximately 7 800 teachers. Of these 268 institutions, 65% (174 institutions) are entirely for girls, including 30 tertiary education colleges for women. TSWREIS thus supports approximately 150 000 students, of which roughly more than 100 000 are girls.

Within less than a month of the school closures, TSWREIS began to deploy its remote learning strategy to ensure the children it serves were able to continue their learning. TSWREIS used innovative yet simple methods such as mobile phones (e.g. WhatsApp and phone calls) as well educational television lessons to support student learning and teacher training during the lockdown. Once the lockdown was lifted and small gatherings were allowed but school had still not resumed, student-led "village learning circles" were started by students with the aim of ensuring students without access to other forms of remote learning (e.g. mobile phone or TV-based lessons) were not left behind.

The main components of the strategy are discussed below.

***Providing learning materials to disadvantaged students.*** WhatsApp was used by teachers to share lesson guidance, worksheet activities and lesson videos to students as well as for training teachers and providing guidance to parents. Later, TV lessons were provided to ensure that educational continuity could be provided to the TSWREIS student body, which includes some of the most marginalised socio-economic groups in India.

***Student-led physically distanced peer learning in village learning circles.*** To ensure students without any other way of accessing remote learning lessons were not left behind, older students and peers within communities took the initiative to start in-person, student-led village learning circles. These started as the lockdown was lifted in India when small gatherings were allowed but schools had not resumed. Village learning circles are student-led lessons for peers or for younger children in groups of five to ten, including students beyond the purview of the TSWREIS schools. Students used any space available to them to conduct lessons in homes, churches, temples, community centres, panchayat offices or even fields. TSWREIS has set a goal of having 50 000 village learning circles before schools reopen to ensure educational continuity for all its students.

***Involving community leaders and teachers in the learning circles.*** In many cases, community members and religious leaders have come forward to support students with spaces for circles. To encourage and strengthen these village learning circles, teachers living in communities have started to lead village learning circles as well. The success of village learning circles has now made them a critical part of TSWREIS's institutional remote learning strategy to reach all of its students.

***Providing teacher training and supporting parents.*** During school closures, TSWREIS also brought forward remote initiatives to train teachers in preparation for the upcoming school year as well as to equip parents with the support and guidance they needed to cope with this difficult period and support their children's well-being.

## Main problems addressed

The main problems addressed were:

- ensuring education continuity during lockdown through mobile and online tools
- ensuring education continuity and enhancing learning when small gathering with physical distance were allowed
- engaging teachers and the community in supporting students' learning
- providing teachers and parents with support and guidance during the pandemic.

## Mobilising and developing resources

The initiative was made possible by several existing resources, including human resources that help to repurpose existing resources and develop new ones.

***An existing education TV channel.*** TSWREIS included an educational TV channel, T-SAT, that it had been using regularly to communicate with its 268 educational institutions once a month. T-SAT is the satellite TV network operated by Society for Telangana State Network (SoFTNET) under the aegis of the Department of Information Technology, Electronics and Communication of the government of Telangana. This was leveraged to deploy regular TV lessons for students during the school closures under the programme name "Gnaana Deeksha", and students were able to watch live as teachers presented their lesson on TV. As of July 2020, TSWREIS partnered with a national channel, Doordarshan, which has wide reach across the state and deploys lessons under the programme name "Gnaana Deeksha 2.0" (Government of Telangana, 2017[1]).

**Mobile and digital technology.** Alongside WhatsApp, an existing mobile app, T-SAT, and an existing YouTube channel, T-SAT network, were used to make TV lessons available as on-demand content. Content was uploaded within less than 30 minutes of the completion of the live TV broadcasts, thereby providing students who were unable to watch the live TV lessons with immediate access to the lessons.

***Mobilising teachers.*** Existing TSWREIS teachers were leveraged to create the educational TV lessons. Pedagogically strong teachers were selected by the TSWREIS academic team to develop and present lessons. The academic team further trained these teachers to equip them to present lessons via television, which requires different skills than classroom-based teaching. Before each TV lesson, teachers sent the content to the academic team who provided feedback. The teachers then gave a practice presentation of the lesson to the academic team who gave further feedback to improve it.

Engaging the expertise of other stakeholders

- ***Principals and regional co-ordinators.*** School principals and regional co-ordinators (who co-ordinate multiple TSWREIS schools within a region in Telangana) were leveraged to train and support teachers as they deployed WhatsApp-based lessons for students.
- ***Administrators and technicians.*** In-house administrators and technicians with expertise in broadcast media and TV were leveraged to support the speedy deployment of educational TV lessons for students.
- ***Academic team.*** The in-house TSWREIS team of academic experts was leveraged to identify, train and support teachers and academic subject experts to develop and present TV lessons.

## Fostering effective use and learning

TSWREIS deployed a three-pronged approach to encourage the use of its remote learning response and so is more likely to lead to actual learning. The approach was aimed at each of its key stakeholders: students, teachers and parents. This was rolled out in phases to ensure the speed of response was balanced with the quality of the response.

*Support for students*

In Phase I, students were divided into groups of 10-15 and a teacher was assigned to each group. Teachers were tasked with sending lessons, worksheets and videos via WhatsApp. Students were required to complete worksheets and send them back to teachers, who would provide regular feedback. Teachers were also requested to call students and provide them with one-on-one support, when needed. Phase I was deployed for Grades 5-10.

Phase II involved the roll out of remote learning lessons deployed via educational TV and was additionally deployed for Grades 11 and 12 and undergraduate level students. Education TV lessons went beyond purely academic subjects to ensure a more holistic approach. For example, sports lessons were offered on topics such as exercise, diet and stamina, with sports experts supporting their delivery. Music teachers also shared lessons via WhatsApp. Students had to send pictures and videos of them practising the sports and music activities they were assigned.

In Phase III, four multi-grade lessons per week were broadcast on the governmental TV broadcasting network, Doordarshan, for 30 minutes each, allowing for far greater reach. At the end of each TV lesson, students were assigned activities or homework to complete. It is also in Phase III that peer learning in the form of student-led village learning circles started, with students teaching other students, especially those without access to remote learning.

*Support for teachers*

***Teacher training on the flipped classroom method via WhatsApp.*** Teachers were trained on TSWREIS's "Freedom School" model, which is based on the flipped classroom method. This involved a ten-day teacher training virtual workshop via WhatsApp as a pilot for roughly 100 teachers. The "Freedom School" model is a largely discussion-based classroom that aims to encapsulate greater equity between teachers and students in the classroom. Training material and worksheets were shared with teachers every morning around 10 a.m. during the ten-day period. Teachers were required to send back their completed worksheets to their trainers via WhatsApp around 4 p.m. daily. Around 8 p.m. each night, trainers would return these worksheets to teachers along with feedback and a review of their work.

***Teacher training to improve English communication via WhatsApp.*** Data from a regular pre-pandemic teacher observation inspection were used to identify roughly 200 teachers who needed improvement in their English communication, lesson delivery and language content. Teachers were sent listening tasks in English via audio files on WhatsApp. They were required to send back scripts of the audio file to their master teacher trainers who sent back feedback to help them improve.

***Video conferencing training to prepare teachers for the next academic year.*** Teacher training was also conducted via online video conferencing tools such as Zoom to prepare teachers for the next academic year. This was rolled out to more than half of TSWREIS's teachers (roughly 5 000 teachers). It consisted of a 6-day long training course of 1.5 hours a day, conducted in two separate batches to accommodate all teachers. Almost all teachers were involved, including those teaching art, crafts and music. Partnerships with other organisations such as the Aga Khan Academy and Aavishkar were leveraged for this online teacher training.

*Support for parents*

Parents were also provided support and guidance on how to support their children effectively during this lockdown period. Specifically, parents were given guidance on "future parenting" including, for example, how to support children during the difficult and confusing COVID-19 period, psychological development of children and career guidance, among others.

## Implementation challenges

***Reaching students without Internet access.*** Mobile phones and educational television were selected as the remote education delivery modes since they had the highest penetration in the communities served. However, TSWWREI estimated that roughly 20% of its families did not have smartphones, roughly 40% did not have Internet access at home and roughly 10% did not have access to a television. This made it more difficult for TSWREIS to reach all its students. In addition, there is often only one mobile phone in the family, which typically belongs to the head of the household. This limits the amount of screen time that can

be used to support TSWREIS's students to continue their learning at home. To mitigate these challenges, teachers used phone calls with students who did not have access to the Internet, WhatsApp or TV lessons to support them more directly. School principals and regional co-ordinators were tasked with monitoring to ensure that teacher support reached all students.

***Distribution of learning resources.*** To ensure further distribution of learning resources, TSWREIS teachers begun recording short three-minute lessons that encapsulated the main content of the lesson. These were stored on pen-drives and distributed to different regions with TSWREIS students.

***The demand on teacher resources.*** Another challenge faced by TSWREIS at the teacher level was the transition to educational television for teachers. TV lesson development and delivery were challenging and time consuming and some teachers were unable to put in the additional time required due to their own personal challenges at home supporting their own families. To tackle this, the team of in-house academic experts reached out to teachers who were willing and able to take on the task of developing and delivering TV lessons and ensured that these teachers were continuously supported.

## Monitoring success

To monitor the success of the initiative, teachers provided regular reports via WhatsApp to school principals who in turn were required to provide reports to regional co-ordinators twice a week. These reports captured updates regarding remote learning programmes including lessons conducted, activities provided and student participation. Feedback from key stakeholders (students and parents) was also collected during random spot checks to understand the effectiveness of these strategies.

Weekly schedules were developed for student teachers to follow when leading village learning circles and structures have been put in place to ensure the regular monitoring of these, including in-person visits from regional co-ordinators. Guidelines were provided to student teachers to ensure circles are following COVID-19 health protocols.

Once in-classroom schooling resumes, TSWREIS aims to conduct summative assessments to assess the overall impact of remote learning strategies. This will be used to adjust the curriculum and lessons to be conducted to ensure students are supported and learning loss is minimised.

## Adaptability to new contexts

This model of supporting students via mobile technology using WhatsApp and education television as well as conducting teacher training and providing guidance to parents via WhatsApp can be used as part of a remote learning strategy in a range of contexts. It is being used by small organisations and by several states in India. The model of the village learning circles can also easily be used in other contexts, including beyond the pandemic, although perhaps with less monitoring.

Once TSWREIS schools reopen, these interventions and solutions may no longer continue as part of daily operations, but they will be maintained as standard emergency protocol.

### Box 22.1. Key points to keep in mind for a successful adaptation

1. For greater educational continuity and reach within a short time span, use simple existing technology already readily available to most stakeholders; for example, mobile technology using WhatsApp and television.
2. Ensure all key stakeholders are supported, including students, teachers and parents, as they form an ecosystem, meaning that support given to one type of stakeholder impacts other stakeholders as well. It is not enough to support students without supporting parents as parental guidance at home has an important impact on the well-being of students.
3. Use simple yet innovative ideas such as WhatsApp virtual workshops in which teachers are given training material and worksheets every day to complete, which are returned to master teachers and feedback is provided to them the same day. This is a simple way to ensure teachers are being supported and training continues during the school closure period using simple technology.
4. Ensure that there is a plan to support all students. For example, TSWREIS identified that not all its students had access to a smartphone, Internet and/or TV. Even when they had access to a phone, this was for a limited amount of time per day. Thus, TSWREIS deployed learning content across a variety of modes so that students could use the mode that best suits their needs. Additionally, teachers were tasked with phoning those students who did not have access to any other mode of education delivery.

## Acknowledgements

Dr. R.S. Praveen Kumar, IPS Secretary, TSWREIS & TTWREIS, Hyderabad and George Varkey, Chief Innovation Officer, TSWREIS.

## References

Government of Telangana (2017), *Minister launches T-SAT network, logo*, https://it.telangana.gov.in/minister-launches-t-sat-network-logo. [1]

# 23 India (Nagaland): Tele/Online education programme

C. Shanavas, Principal Director, School Education, Government of Nagaland

Kumar Vivek, Education Specialist, World Bank

Pragati Tiwari, Consultant, World Bank

Type of intervention: governmental
Website: https://education.nagaland.gov.in/tele-tutorial-videos

## General description

Tele/Online Education Programme is an initiative by the Directorate of School Education (DoSE), Nagaland to support the learning of public school students, and make up for the loss of instructional days due to school closures resulting from the COVID-19 pandemic.

In the first phase of the programme, which rolled out in April 2020, TV and radio education was offered through the regional public television (Doordarshan, Kohima) and the regional public radio (All India Radio, Kohima). This constituted an immediate response strategy that could maximise access for students and retain them in the school system, especially those from disadvantaged backgrounds in this tribal majority state. It focused on video and audio lessons on key subjects for secondary and senior secondary school stages (Grades 8, 9, 10 and 12).

In the second phase, which rolled out in May 2020, the DoSE expanded to digital content distribution through a dedicated YouTube channel and offered audio and video lessons for students in upper primary school stage (Grades 5-7).

The broadcasts are conducted daily in three-hour slots. The schedule of the broadcasts is organised so that each day of the week is devoted to a different theme. Moreover, each lesson lasts 30 minutes, followed by another lesson of 30 minutes in a different subject, thereby trying to keep the videos short and diverse to make the lessons more engaging for students.

The programme was set up within a week, allowing for education continuity three weeks after the school closure.

Two innovative aspects of this initiative merit attention:

1. ***Ongoing creation of local, contextualised digital content in a state that had limited digital content repositories in the past:*** For the first phase of television/radio tutoring, the DoSE hired in-service private and public school teachers with subject proficiency to record video/audio lessons aligned with the state curriculum from its headquarters in Kohima. In the second phase, the DoSE used the content created from the first phase, and also invited volunteers from the general public to submit curriculum-aligned video lessons by email. An incentive mechanism was also instituted for rewarding good content.
2. ***Online students' evaluation programme:*** To incentivise the use of digital content distributed through various channels (TV/radio/on line), the DoSE created a web-based evaluation portal within a few weeks, trusted students to take evaluations without proctors, and offered a combination of rewards and recognition to well-performing students as well as schools.

## Main problems addressed

- ***Reaching the students early and maximising outreach.*** The initiative began in April 2020, within days of the announcement of the school closures, and the medium identified (public television and public radio) for transmission and broadcasting of these video and audio lessons was implemented with the aim of supporting equity and inclusion. The problem was to ensure that children, even in the remote areas of the state of Nagaland, have uninterrupted access to these lessons.
- ***Addressing issues of accessibility.*** The DoSE was proactive in addressing accessibility issues in terms of students', parents' and teachers' equipment. The district education officers, sub-divisional education officers and school leaders are working in association with the district administration in each district to make the necessary arrangements so that the broadcast of these lessons can be viewed or listened to at a common place such as a village hall, school auditorium, etc. Students who do not have access to a television or radio at home could thus benefit from the lessons.
- ***Supporting educators and parents.*** To support educators/parents better in helping the students, the Directorate of School Education of Nagaland also created grade-wise DVDs/pen drives of the entire telecast, and distributed them to interested parents, teachers and schools at a nominal charge. Accessing the lessons at their convenience allowed for the revisiting and better understanding of the lessons for students (or educators/parents). Given the level of equipment in the state, an online repository was not an appropriate option.

## Mobilising and developing resources

- ***Content for broadcast lessons.*** In the first phase (TV/radio tutoring), the DoSE invited applications from the subject teachers in the region: 23 teachers from a pool of 50 applications were selected through a screening process, which included 11 teachers from public schools and 12 from private schools in and around Kohima. They were guided by DoSE officials in their task of delivering lessons in a temporary studio that was set up at DoSE headquarters. A private

production unit was allocated the responsibility for producing the audio/video recordings. The videos were shot well ahead of the proposed date of the telecast to provide sufficient time to educators to prepare for the lessons.

- ***Content for online distribution and use of educators outside the school system.*** The DoSE tapped into the expertise of educators from the state as well as from other parts of the country for curating content. For this purpose, the department released a notification. It solicited interested educators to shoot an original video of 20 minutes for several lessons/topics that would then be available on DoSE's YouTube channel and Facebook page. In order to incentivise educators, the department also proposed to reward the best video recordings and honour the producers of all the videos that would be selected for broadcast with certificates of appreciation.
- ***Access channels.*** To ensure that parents, teachers and students have access to the videos as per their convenience and are able to make the best use of the online lessons, all the videos telecast through Doordarshan were made public on social media. For this purpose, the DoSE shared all the videos with the public through the creation of the School Education Nagaland page on Facebook and the YouTube channel DoSE Nagaland. This also helped students outside the state of Nagaland use the lessons according to their needs.
- ***Well-planned schedules.*** The schedules for the broadcast of the audio and video lessons for the entire duration of one month were prepared in advance. They were shared in the first week of the month to help the broadcasters prepare and for the educators to adjust their routine in accordance with the timing of the digital lessons. They also provided the students with the opportunity to prepare in advance for the lessons that were to be broadcast.

Most of the content resources were thus newly developed during the crisis, mobilising existing teachers and educators through new mechanisms. The new distribution channels were also newly developed.

## Fostering effective use and learning

The following efforts were initiated to foster effective use and learning of the Tele/Online Education Programme in the state of Nagaland.

- ***Supplementary study material.*** To help the students make effective use of the digital lessons, the department requested that schools devise a mechanism for preparing and circulating notes to the students for the broadcast lessons. This was meant to further help students enhance their learning through the audio/video lessons.
- ***Online assessment.*** As conventional evaluation tools could not be used during this period of crisis, the department developed the Online Students Evaluation Portal, https://dosenl.in. The portal was developed to ensure device compatibility across form factors (mobile/laptop/PC) and is light enough to be accessed via second-generation (2G) cellular networks. The objective of these evaluations is to incentivise students' engagement with digital content, not to use them as summative assessments.

  Two tests, designed as 20 multiple-choice questions to be answered within 45 minutes, are planned to be conducted in June 2020 for every subject, based on the video lessons broadcast in the previous month. The evaluation schedule will be announced to students in advance so that they can view the video lessons again and prepare for the assessment. The portal will be activated during specified schedules only, allowing students to take the tests after they provide their enrolment details. The results and the number of students appearing for online assessment will be made publicly available to ensure remedial measures can be taken by engaged parents and/or educators. A combination of rewards and recognition to well-performing students as well as schools is planned as incentives that could also motivate all other students and schools.

- ***Engagement with students.*** During the school closure, teachers are requested to engage with students and discuss the lessons, help them by providing explanations and clarifications regarding the lessons. They use easily available media such as WhatsApp or text messages.

## Implementation challenges

A few of the implementation challenges and the measures deployed to resolve them are:

- ***Identifying broadcast partners.*** Selecting broadcasting partners quickly from the private sector within a government set-up might still take several weeks. The DoSE decided to choose public broadcasting platforms (Doordarshan and All India Radio), ensuring a speedy collaboration with government agencies for broadcasting its video/audio lessons. This also resulted in greater accessibility even in remote areas within a short time frame.

***Access through private cable services.*** A related challenge with broadcasting concerns households that access TV services via private cable services or Director-to-Home (DTH) connections that might not air government channels for free. The DoSE is working with the federal Ministry of Information and Broadcasting to identify ways to ensure that Doordarshan Kohima satellite transmission gets included in the telecast list of private operators.

- ***Engaging students outside of home settings.*** The Naga society suffers from pockets of extreme poverty, with many households without a TV or a radio at home. One of the key risks of TV/radio tutoring strategies was the exclusion of students from these households, with the potential to wipe out the gains in equitable access made by public school systems over several decades. To mitigate this challenge, a deep engagement strategy was rolled out in collaboration with district and sub-district officials, and school leaders. As mentioned above, it entailed solutions such as organising video/audio lessons in village or community halls, school auditoriums, etc. To comply with the social distancing norms and ensure that children do not group in large numbers in school/village council halls, where the telecasting can be viewed, the broadcast schedule was prepared in such a way that only two grades will be having the lessons on a particular day.
- ***Communication.*** Well-intentioned efforts, even with reasonable deployment of resources, might not work without a co-ordinated communication strategy that reaches all stakeholders with timely and actionable information. The DoSE effectively used features provided by social media and timely government notifications to publicly disseminate content, schedules, an evaluation plan and other information relevant to digital learning. The DoSE also proactively issued communication within the department so that all district and sub-district officials could effectively co-ordinate implementation of the digital lessons without confusion or misinterpretation of information.

## Monitoring success

Monitoring the success of a recovery strategy for a school education system that needs to dynamically evolve and adapt during a pandemic is difficult. Some of the measures deployed by the government are to consistently monitor the subscription numbers on social media channels and to ask for user feedback. Within four weeks, the DoSE's Facebook page had 6 848 followers and the YouTube channel registered 17 600 subscribers. In addition, the data gathered from the online evaluation system should allow a more nuanced understanding of the impact of the DoSE's efforts.

## Adaptability to new contexts

Some of the lessons from the initiatives in Nagaland could be useful in similar resource-constrained environments where access to the Internet remains challenging.

Most of the interventions in Nagaland are low cost and rely on intrinsic and extrinsic motivation strategies to drive community participation in the curation of content and dissemination of educational material.

A strong administrative co-ordination mechanism forms the backbone of these efforts, which were implemented in a short time frame.

The DoSE has also proposed to carry forward this initiative even after schools reopen, so that students can make best use of the expertise and experiences of the teachers who came together to build an innovative digital education model. The story of Nagaland, unfolding over less than three months, showcases how an opportunity presented by the crisis to "build back better" was created by the efforts of a dedicated government system.

### Box 23.1. Key points to keep in mind for a successful adaptation

1. The perfect is the enemy of the good. Devise a multi-channel dissemination strategy and roll it out as soon as possible with scope for continuous adaptation. Use available options first (such as government broadcasters of radio/TV), followed by channels that require additional efforts to set up and execute. When evaluations are critical to incentivise content use and monitor success, an imperfect assessment platform is better than none at all.
2. The best solutions lie in your neighbourhood. When it comes to content, there is nothing better than trusting one's own hyperlocal context. It is possible to crowdsource good content which is contextual, provided the right incentives and quality control mechanisms are in place.
3. Emphasise communication and co-ordination. The best strategies fail without communication to engage stakeholders and without co-ordinating with people who can get the job done. Working in collaboration with district and sub-district administrations as well as school leaders to identify and resolve issues of scalability and accessibility goes a long way. Digital broadcasts require an extra layer of co-ordination to schedule transmissions accurately in advance, ensuring that the scheduling is not repetitive and is communicated effectively.
4. Support students and teachers. The "last-mile" requires support. Providing supplementary materials such as notes and assessments, and engaging students and teachers with easily available media such as text messages or WhatsApp may be useful. Helping students and parents engage with teachers for a better understanding of lessons and providing them with social and emotional support is also critical.

## Acknowledgements

Cristobal Cobo (Senior Education Specialist, World Bank).

# 24 India, Pakistan, Zambia, Kenya and Lebanon: Education above all's internet free education resource bank

Janhvi Maheshwari-Kanoria, Director of Innovation Development, Education Above All

Leena Zahir, Senior Education Specialist, Education Above All

Chris Petrie, Head of Global Research, HundrED

Type of intervention: non-governmental
Website: https://resources.educationaboveall.org

## General description

In response to the COVID-19 induced closures of school buildings around the world, Education Above All (EAA) developed the Internet Free Education Resource Bank (IFERB) to promote the continuity of education for the world's most marginalised learners. The EAA is a Qatari non-governmental foundation whose mission is to measurably improve access to high-quality education for vulnerable and marginalised people in developing countries, as an enabler of broader human development. The Innovation Development Directorate team at the EAA recognised the disproportionate impact school closures would have on the world's most underserved learners for whom alternative learning solutions, such as open source learning materials that can be used for self-study, were lacking. This prompted the creation of the

IFERB – a growing collection of over 120 project-based learning (PBL) resources and an activity bank for students with disabilities that can be implemented using minimal materials while requiring virtually no Internet connection. All of the resources within the bank have been developed by the EAA's Innovation Development Directorate team in collaboration with education experts over 9 months after the start of the pandemic and cover approximately 85% of the learning standards of 5 different international curricula including Australian, Indian, Qatari, UK and US curricula.

The IFERB was developed to serve as a temporary solution to prevent learning loss and provide learners in underserved contexts the opportunity to continue learning where responses to educational continuity have been inadequate. It contains a range of interdisciplinary projects that were designed to meet the learning needs of 4-14 year-old learners in subjects including science, maths, language arts, social sciences, economics and environmental studies. Most projects also have embedded literacy and numeracy practice. Additionally, the IFERB empowers learners to not only continue engaging academically during school building closures, but to also gain some skills that might not be the focus in traditional classroom settings. Most of the projects include activities that build 21st century skills including critical thinking, creativity and communication. Through the projects, students are afforded the space to exercise agency and entrepreneurship owing to the projects' student-centred design and opportunities for independent inquiry.

By November 2020, the IFERB resources were being piloted with over 120 000 learners through 22 implementation partners that are either non-governmental organisations (NGOs) or schools in 5 countries including India, Kenya, Lebanon, Pakistan and Zambia, the longest pilot lasting 24 weeks. The projects from the IFERB bank of resources are being used for:

1. distance education
2. blended learning where schools are partially open
3. as a supplementary resource where schools are completely open.

The IFERB resources can be implemented using a variety of media depending on the context, including phone calls, SMS or other text-messaging applications using feature phones or smartphones, radio and in-person classes. The NGOs involved in projects piloting the resources were chosen based on an open call for applications for 12-week long IFERB pilots implemented with targeted training and support from the EAA. The main selection criterion for the pilots was the potential for impact given the magnitude of the disruption, the need for an alternative educational response and the ability to sustain the approach. Pilots typically take four weeks to roll out during which resources are adapted.

Some partner organisations implementing the IFERB projects are featured below.

***Mantra for Change Rural Consortium:*** This consortium targeted over 100 000 learners from tribal and rural areas across 9 states of India who are enrolled through 16 local partner organisations. It includes both students with no prior schooling and those whose education was disrupted due to COVID-19. The NGO connects with students primarily through community-based volunteers or coaches, and also uses phone calls, printed materials and publication of student projects in newspapers, among other means.

***British Council:*** This is an ongoing pilot in Pakistan working with 1 000 students aged 4-10 in semi-urban and rural contexts. All students are enrolled in school and have had their education disrupted due to COVID-19. The facilitators reach students through teachers and community volunteers who assist parents and students remotely with implementing projects in learners' homes.

***Zambia Open Community Schools:*** This is an ongoing pilot with 2 150 students 8-14 years old in two rural Zambian provinces where schools are partially open. Students have had their education disrupted due to COVID-19. Study groups of five to eight learners are provided radios and SD cards with pre-recorded PBL lessons.

***Lebanese Alternative Learning:*** This ongoing project targets 2 000 Syrian refugee and Lebanese children across semi-urban and rural contexts. The students are between 4 and 14 and have had their education disrupted due to COVID-19. Teachers reach students remotely using WhatsApp.

***Dignitas Foundation:*** This ongoing pilot targets 1 500 children in Nairobi, Kenya. The students are aged 4-11 and have had their education disrupted due to COVID-19. Teachers engage students remotely using WhatsApp, which is accessible to 60% of students.

***Ektara School:*** This is a private school based in urban contexts in India working with 670 economically disadvantaged girls. This ongoing pilot has completed 24 weeks working with students across all age groups using more than 70 projects from the bank. Teachers engage students remotely using WhatsApp, which is accessible to 70% of students. They also engage with students through daily phone calls.

Case studies of the 22 pilots will be available from the EAA once the pilots are completed.

## Main problems addressed

***Resource and connectivity barriers.*** While the majority of learners in privileged contexts have shifted to online schooling in response to school closures, most global households have been left behind due to their low Internet connectivity. The student populations targeted by the EAA's programmes face crippling compounded challenges, including lack of Internet and digital connectivity, low literacy or unavailability of parental support, and the absence of educational resources at home. Given the absence of alternatives for continued learning, over 20 million of these vulnerable students will fall even further behind and will likely be at risk of dropping out of the education system. These learners face several barriers to the adoption of currently available alternatives: online remote or hybrid learning requires stable access to the Internet and technology; TV and radio instruction relies on access to hardware and is usually not personalised or interactive; SMS-based learning does not allow for deep learning given the 160 characters limitation of many feature phones; and activity-based learning is typically effective as part of a lesson and often does not result in meaningful learning without educator support. All of these alternatives typically require some level of access to technological devices, leaving over 485 million learners unable to benefit from them.

***Empowering learners to overcome contextual challenges.*** The EAA works across varied contexts including: remote rural geographies where schools have been closed; disconnected tribal areas with marginalised caste children and forest-dwelling communities where learning infrastructure is underdeveloped; semi-urban settlements with refugee learners and urban poor student populations in low-cost private schools that are now closed. In addition to the digital divide, the EAA's students also live in severely resource-deprived contexts. The complete lack of educational resources and tools including books, paper and writing implements makes it challenging to create educational programmes at home. There was a need to devise a solution that addresses the resource and connectivity barriers outlined above while ensuring a meaningful learning experience that is engaging and student-driven to the extent possible. It was important to also circumvent these contextual challenges while simultaneously empowering learners to draw from their environments and engage their families and community in their education. With the IFERB projects, learners explore academic and non-academic concepts through hands-on experiments and activities that require readily available resources and adult guidance that does not burden caretakers with having to play the role of educators.

## Mobilising and developing resources

***Partnering to pilot resources with limited costs.*** The cost of deploying the PBL approach is incremental, as a majority of the focus is around reallocating staff and existing resources. The additional costs vary across pilots, but can include: monitoring and evaluation; basic connectivity costs of phone calls or SMS or printing; initial human capital in adapting and translating the projects (if required); some basic learning resources (including paper, pens, etc.); and stipends for volunteers where teachers are not available. For 90% of the pilot projects, the EAA covers the deployment costs of USD 3 per child per month while partners cover all routine expenses. To reach learners, the EAA offered technical support to the implementing partners who are part of the local education network. The EAA created simple pedagogical and practical training and tools for teachers or volunteer facilitators to empower them to support learning.

***Developing training resources.*** The EAA designed practical and easy training resources to help implement these approaches for volunteer coaches and community facilitators, many of whom are high school diploma holders in the learners' villages. While some challenges persist, especially given the absence of trained teachers who can differentiate instruction and build student inquiry, IFERB pilots have been successful in reaching students quickly and effectively. All pilots were launched after only four weeks of planning with over 80% completion and satisfaction rates.

## Fostering effective use and learning

Each project was developed by the EAA's Innovation Development Directorate taking into consideration key factors that include:

- ***Ensuring engagement and relevance.*** In "ABC by Me", for example, learners create their own alphabet book and learn vocabulary that is part of their everyday life. Students in the pilot with Vidhyalaya Udhyam have used their ABC books to build community libraries in under-resourced communities.
- ***Integrating core skills and conceptual learning.*** For example, the "Shadow Play" project promotes both science and literacy by providing learners with the opportunity to explore the scientific principles of light that are later used in the creation of their own shadow puppet play. The R-Zamba pilot found that this project improved learners' confidence as well.
- ***Promoting self-directed learning while providing opportunities for caretakers of all literacy levels to contribute.*** For example, in "Grandmother's tales", grandmothers or elders play an important role by orally narrating folk stories to learners who then reimagine them, adding their own modern twist. This highlighted the importance of partnering with the community and making student growth and learning more visible and explicit to secure buy-in for this method of teaching and learning from parents and communities.
- ***Ensuring global relevance and building key life and 21st century skills.*** Through the "Setting up a Store" project, learners set up their own shops and practice entrepreneurship as they hone their communication, critical thinking and creativity skills and learn about profit and loss and other mathematical concepts.
- ***Minimising the need for textbooks and other educational materials.*** Learners use readily available household objects to implement the activities associated with each project, including "Water is Life", through which learners use basic materials to understand the water cycle, states of matter and water purification, among other concepts.
- ***Contextualising learning.*** Partners can freely access open source content or work closely with the EAA to implement IFERB resources. The EAA provides initial support by selecting the right projects and levels from the extensive bank based on learning goals, available resources, methods

of reaching learners and previous learning experiences. Partners are then trained to contextualise the selected projects to ensure that they are relevant, practical and appropriately challenging for learners. This involves making sure that examples are culturally or contextually relevant, incorporating curricular materials where possible, and adding clarifying prompts for educators to facilitate implementation. All contextualised projects are reviewed by the EAA, then projects are finalised by implementing teams and translated if needed. Partners are also supported in adapting the monitoring, evaluation and learning system, including the IFERB question bank, survey tools and other instruments.

## Implementation challenges

The low-resource contexts on the ground, combined with the lack of mobility due to COVID-19 and related safety measures created many challenges. Additionally, the novelty of the IFERB approach for beneficiary communities presented another set of challenges.

***Some resistance to PBL from beneficiaries.*** Most of the EAA's implementing partners had no previous exposure to PBL and students, parents and teachers were somewhat sceptical about such an approach. Some pilots initially struggled with ensuring student autonomy as students had to unlearn familiar authoritative teacher-student dynamics and rote learning. To address this, all IFERB projects explicitly feature the expected learning and assessment criteria, which many partners closely link to their local curricula. Partners were encouraged to add conventional learning materials such as worksheets where possible. Teachers gradually began to gain confidence in their ability to implement PBL after several cycles of the process of adapting and building on projects as they worked with their students remotely. Students also began to enjoy the opportunity to explore the multi-disciplinary and creative aspects of the projects. Over time, stakeholders grew satisfied with the academic and non-academic learning that a PBL approach made possible.

***Teaching unfamiliar concepts with limited visual support.*** When Ektara (a pilot partner) began using SMS and phone calls to convey the details of the projects, the lack of visual media made it challenging to teach new and unfamiliar concepts. In response, the task and activity instructions were simplified, making them easier to explain remotely without the need for illustrations. For other projects, the focus of the learning outcomes was shifted to experiential learning. Reflection on activities was promoted and "textbook content" minimised. For example, in "Adventures in the plant kingdom", students in Lebanon learnt about plant parts and plant life cycles by exploring plant life around them and germinating chickpea seeds rather than reading a textbook. The EAA and implementing partners also developed alternatives for sharing instructions easily, including the distribution of printed instructions or video instructions.

***Lack of qualified teachers.*** In one pilot project that caters to tribal and rural learners, no teachers were available and parents are often semi-literate, placing the majority of the burden of learning on the children. It was therefore necessary to design stimulating, fun, relevant and simple learning experiences to empower students to lead their own learning. Most of the student learning projects are designed with four elements: 1) game-based learning; 2) deep conceptual exploration; 3) relevance to real life; and 4) a final product that gives students a sense of ownership. Instructions are simple since most of the learning happens through exploration and application and with minimal emphasis on theoretical knowledge that students might have less access to.

***Rethinking assessment.*** It was also important to rethink IFERB assessments as a check for understanding and orienting stakeholders to a more formative feedback approach. Assessing students in the absence of in-person interaction necessitated the establishment of an academic code of trust, empowering teachers to evaluate students' learning based on conversations when students could not take pictures of their completed work and encouraging student self-reflection. For example, educators can ask students to answer simple questions from a question bank in order to gauge conceptual understanding.

***Understanding previous learning levels.*** Due to the lack of mobility and the need to provide a rapid response to COVID-19, the EAA was not able to conduct a needs assessment and began piloting the partner selected projects without a complete understanding of students' previous learning levels. This resulted in compromised academic rigour and high baseline scores. To address this, project levels were adjusted during the pilot by incorporating challenging activities and tasks. Differentiated options were also added for enrichment and simplification.

## Monitoring success

To date, the EAA has directly worked with over 120 000 students from the "hardest to reach" segment of learners. Almost none of them were productively engaged in other learning prior to this intervention during the COVID-19 pandemic. The monitoring, evaluation and learning system used for this initiative centres on understanding IFERB's reach, completion rates of the projects, and student learning and growth. Satisfaction and feedback on the resources are also being tracked, although in some contexts there was some resistance to data collection due to low digital literacy and connectivity issues.

Most IFERB projects enable learners to build conceptual learning and skills through exploration, experimentation and application. The combined challenges of carrying out assessment remotely and by facilitators and volunteers makes it difficult to design and conduct assessments. Nevertheless, a question bank was developed to support implementing organisations in assessing student learning and growth in three categories: 1) general knowledge about project topics; 2) knowledge application skills; and 3) project-related concepts.

Implementing organisations conduct baseline and endline assessments using a list of selected questions from this bank to measure students' performance and growth on a pre- and post-basis. A separate assessment tool was developed to measure performance and growth in 21st century skills using a simple three-level rubric for assessing students' creativity, critical thinking and communication skills. Despite continued efforts to simplify the assessment resources and protocol, assessing student learning remains a challenge given that nearly none of the teachers participating in the pilots have experience with PBL or 21st century skills and require extensive training on various other competencies.

It is challenging to measure the effectiveness of the IFERB PBL approach, especially as a distance learning alternative delivery. The monitoring, evaluation and learning system relies heavily on qualitative and narrative feedback, including self-reported stakeholder measures of learning and engagement, pictures of student work, and testimonials as evidence of preliminary success. Designing a controlled research study to gauge the impact of the projects was beyond reach due to the lack of capacity within implementing partner teams and teachers/volunteers and the lack of mobility on the ground during the pandemic, among others.

Findings from the 11 partners who have completed the project include:

- a perceived increase in life skills, especially communication, creativity and entrepreneurship
- an increase in student numbers and participation that forced partners to cap class sizes
- high levels of student engagement, as many are still receiving requests from student to continue with more projects
- increased teacher and facilitator effectiveness as they gained confidence implementing the project
- developed conceptual understanding, for example number sense developed through the number line.

Anecdotal conversations suggest that some projects in the bank have also challenged gender stereotypes. In the project “pop-up restaurant”, boys worked with their mothers to cook a meal, which is new in many patriarchal societies. Children of both genders were exposed to alternate role models as they understood the kinds of professions women have undertaken through data analysis in the “population census” project.

Teams implementing IFERB projects are asked to share learner snapshots which encapsulate the meaningful experiences of students and teachers as a result of their engagement with PBL. One such story is of a child living in Bihar (India), an area of persistent annual flooding, who participated in the “Flood Management” project as part of a pilot run by a local non-governmental organisation in his village. Through this project, he had the opportunity to explore how human actions cause and exacerbate the effects of natural disasters, and was able to develop the knowledge and skills to design homemade tools to examine rising water levels. He was able to critically think through and design his own emergency evacuation protocol in case of a flood, put together an emergency toolkit and finally design his own life-saving personal flotation devices from scrap materials using scientific reasoning. These learners’ stories are an important element of the EAA’s monitoring strategy.

## Adaptability to new contexts

The IFERB projects and approaches were designed to be universally applicable and have been used across multiple geographies, contexts, student groups and curricula – with the required contextual translations. At USD 3 per child, the cost of the solution is low compared to other stop-gap alternatives that rely on digital learning. It is also easy to deploy, requiring less than four weeks of planning before it can be used with the students.

IFERB’s adoption in over 22 different student contexts in 5 countries suggests that it is relevant across geographical contexts and user types. Projects have been adapted and translated into eight languages and are continuing to be contextualised by partners, making them available for a wider global audience.

All of the partners of the 11 completed pilot projects have expressed interest in sustaining this PBL approach even after schools reopen. The Innovation Development Directorate team has offered training and feedback to partners on developing their own projects to create more local assets.

The EAA is also embarking on partnerships with three new government departments in India. With all partners, the focus has been on how to sustain and integrate the approach into the education system – the training, monitoring, evaluation and learning tools, contextualised projects, and case studies constitute a toolkit for implementation in particular geographies.

Unfortunately, for most students in the IFERB pilots, teacher absenteeism, natural disasters, conflict and violence, extreme weather, and other factors regularly lead to interruptions in their learning. In addition to IFERB’s role in promoting learning, engagement and life skills during COVID-19, its value might lie in its effectiveness as a stop-gap solution to continue learning regardless of the cause of disruption.

### Box 24.1. Key points to keep in mind for a successful adaptation

1. Determine the learning needs and levels of your beneficiaries, the mode of implementation (the way you will reach and support the learner in completing the projects), and subjects of interest.
2. Browse the Internet Free Education Resource Bank and select relevant projects. You can also read different case studies for a better understanding of good practices around the deployment of distance learning solutions.
3. Use the Internet Free Education Resource Bank resources by following the steps below:
    a. Select projects based on: your prioritised subject and skills; students' context, learning levels and needs; deployment mechanism (remote, in-person, phone-based, etc.) and availability of visual tools; guidance available; and student engagement.
    b. Contextualise projects by: changing examples terminology and references used where possible to ensure relevance to your context; simplifying or extending projects depending on learners' needs; aligning it more closely to your curriculum; and developing scripts for facilitators/teachers where needed.
    c. Identify the appropriate mechanism for deployment and train teachers or facilitators on the basics of PBL implementation and assessment.
    d. Develop a monitoring, evaluation and learning system and consider including metrics on reach, completion rates, satisfaction rates, and learning and growth.
4. Organisations can reach out to the EAA's Innovation Development Directorate for support on selecting, contextualising and training on implementation as well as support for monitoring, evaluation and learning.
5. Be patient. It can take two to three projects before implementers become more comfortable with the PBL approach and truly own it. Initially, they may need more guidance and input.
6. Involve parents in assessing learning outcomes and demonstrate close alignment to the curriculum. This will enable you to track student growth and secure buy-in from parents.

## Acknowledgements

Thank you to implementing partners who are truly the front-line innovators including:

Mantra for Change – Karnataka, India

Ektara – West Bengal, India

Lebanese Alternative Learning – Lebanon

Zambia Open Community Schools – Zambia

Dignitas Foundation – Kenya

British Council – Pakistan

Jyoti mahila samakhya – Bihar, India

Vidyalaya udyam – Rajasthan, India

NEAID – Assam, India

InSIDE-North East – Assam, India

Samanta – UP and Uttarkhand, India

RZamba – Ladakh, India

Shiksharth – Chattisgarh, India

Bachpan Banao - Chattisgarh, India

Sankalp ek prayas - Chattisgarh, India

i-Saksham | Karunodaya – Bihar, India

Happy Horizons Trust – Bihar, India

Swatantra Talim – UP, India

Sanjhi sikhiya – Punjab, India

Gram urja – Maharashtra, India

Vidhya vidhai – Tamil Nadu, India

Barefoot Foundation – Maharashtra, India

# 25 Japan: *Tokkatsu*, or student-led collaboration on line

Ryoko Tsuneyoshi, Professor, Graduate School of Education, University of Tokyo

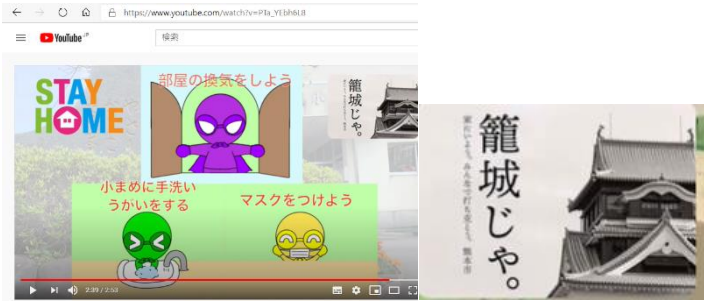
Type of intervention: governmental (municipal authority and municipal public school)
Website: www.kumamoto-kmm.ed.jp/sch/e/obiyamanishies

## General description

The Japanese school curriculum includes both subjects and non-subjects as part of the official curriculum. Non-subject education includes a set of activities linked under the umbrella term "*tokkatsu*". It is often led by children, is experiential, collaborative and interactive. Such activities encourage, for example, the development of social skills, empathy, discussion skills and the acquisition of basic living habits, integrated with the subjects. In ordinary circumstances, such non-subject education is promoted through extensive face-to-face interaction.

With the pandemic, schools shut down, then have restarted, but class hours were cut and students were behind in core subjects. Moreover, social distancing became the norm, making activities which required close physical contact difficult to practice. Thus, *tokkatsu* (children's council activities, school lunch with lunch servers in small groups and school events, etc.) was not possible in its original face-to-face form in many schools. Some educators, however, have started to devise innovative ways in which to promote the non-subject education goals while avoiding the new 3 Cs (closed spaces, close-contact settings, crowded places). The Obiyama Nishi Elementary School, Kumamoto, Japan, provides an example of continuing efforts to promote *tokkatsu* using online techniques during school closures, and on line alongside face-to-face activities avoiding the 3Cs, after schools' reopening.

## Figure 25.1. One of Obiyama's YouTube videos on staying at home and overcoming the pandemic




Notes: This is one of Obiyama Nishi's YouTube videos designed before Japan's long vacation during the school closures, urging children to stay home and to ventilate, wash their hands, gurgle frequently and wear a mask. These messages would be non-subject learning which the school would have done face-to-face if schools had been open. "Let us stay home and overcome this pandemic together" was the message. The words beside Kumamoto's ancient castle signify a method of fighting in which warriors stay inside the castle. The image on the right hand side zooms on the Kumamoto's castle on the top right of the video. The three figures are the school mascots.
Source: www.youtube.com/watch?v=PTa_YEbh6L8.

As soon as schools shut down in March 2020, Obiyama Nishi Elementary School in Kumamoto City started a YouTube video series, and posted one video every school day until school resumed. By 27 May, the school had made 32 YouTube videos. The teachers discussed what they thought the children needed to know during the school closure according to their grade. They made a study plan then developed and edited the videos. The children were given timetables by grade for the shutdown period. Every morning and every afternoon, schedules started with exercise activities or a dance (both provided on YouTube). Classes used LoiLoNote School, seen as helpful in conducting collaborative online interactive lessons; MetaMoJi ClassRoom, which allows collaboration in making newspapers; and Zoom for discussion.

Some of the videos were about non-subject education (see Figure 25.1). In addition, the school also conducted non-subject education, such as classroom discussion and children's council activities on line.

Here is one example of the children's council activities:

The principal and teachers decided that their goal was for children to be "excited about school". They associated this with active learning, etc. The principal explained this goal to the 6th grade committee leaders on line, who then discussed among themselves "what exactly was a school that they would be excited about" and what the committees could do (using Zoom). They then started recruiting 5th graders.

When school reopened, 5th grade representatives of the children's council joined a committee of their choice, and the children's council activities started right away. A hybrid approach of online and in-person learning was taken after schools reopened in June. In line with the goals of the children's council activities of student-led collaboration, children designed activities themselves.

The planning committee in the children's council, for example, discussed on line what "fun" activities they could come up with without putting their peers at risk of the virus. They came up with a stone, scissors and paper (*janken*) tournament in which the children, social distancing in their classroom, competed on line with committee members who communicated with the classrooms on line; winners were interviewed Figure 25.2. Children videotaped, edited and posted the video of the activities on line. This was a learning opportunity for children to not only engage in student-led activities, but to learn how to avoid the 3Cs while having fun.

### Figure 25.2. A blended model of stone, scissors and paper

## Main problems addressed

The main problem addressed here is that the school closures are placing pressure on schools to focus on the subjects, while neglecting the holistic development of social skills, feelings toward others and habits one could learn collaboratively.

Even when schools restart, because COVID has not disappeared, children are asked to practice social distancing, avoiding direct close contact, stay apart instead of working together. This tends to create pressure to focus on subjects and learning which is basically teacher-led and individualised. It has been noted that the schools' narrow focus on subject matter generally hurts the most vulnerable students who benefit the most from a holistic education.

The principal of Obiyama Nishi Elementary School observed that, with the shutdown, more children were emotionally unstable and worried about school than in previous years. The feeling of belonging, of positive social relationships, of community, lies at the basis of the school experience, helping children learn both academically and otherwise. And according to the principal, children from families which are not struggling economically proved as vulnerable as their more disadvantaged peers. Parents may be so worried about the pandemic that they may transmit their anxiety to their children. Thus, communicating and reassuring parents by e-mail, telephone and in person has also become a concern for teachers.

Because the Japanese curriculum includes both the subjects and the non-subject experiential and collaborative activities, it is apparent to educators that a portion of the curriculum is not being adequately practiced because of the nature of the present pandemic. This has often pushed teachers to experiment with how the same goals that had been promoted through extensive face-to-face interaction could be arranged in a way that avoided the 3Cs. Although the structure of the Japanese curriculum may heighten the need for such learning that cannot be taught through the subject matter alone, the children's need for social and emotional support, collaboration, bonding and linking with others is universal in itself.

The main feature of the present practice is to encourage children to design their own activities while preventing oneself and others from becoming infected, assuming it helps them understand the pandemic without letting it get in the way of having "fun" together and developing their socio-emotional skills in spite of social distancing.

## Mobilising and developing resources

There were a few existing resources the school could mobilise, especially because the school had experienced a large earthquake.

Disasters, not just pandemics, often push educators to experiment with techniques they would otherwise not have used. The Kumamoto Earthquake in 2016 and the disruption of schooling it induced pushed the municipality to strengthen its online outreach. This online expansion was used during the COVID-19 school shutdown and the reopening period. On 15 April 2020, thanks to its prior online preparation, Kumamoto City was able to start online classes for all of its municipal schoolchildren from 3rd grade onward to junior high school in response to the shutdown of schools in Japan (the school year starts in April). Obiyama Nishi's YouTube started earlier than this, in March.

New aspects also had to be developed for the particular COVID-19 context.

Kumamoto City was able to build on the online outreach put into place following the Kumamoto Earthquake. However, natural disasters hit, then things start to go back to normal as buildings are repaired, etc. Viruses are different: they seem to almost disappear, then suddenly reappear, and the cycle goes on and on. In addition, contrary to COVID-19, the earthquake never necessitated social distancing. The children could be asked to collaborate and work together in close contact to repair their school with the many volunteers and community members.

COVID-19 has brought about a totally new situation in which even when schools reopened, children could not socialise. The pandemic had made a large part of Japan's curriculum (non-subject) difficult to conduct as usual, as it usually requires extensive face-to-face interaction.

In the example above, the children in the planning committee organised their "fun" activity while avoiding the 3Cs. Non-subject learning, such as classroom discussion, tends to focus on encouraging children to understand the meaning of why a certain behaviour (e.g. cleaning) is necessary. The children's council, which as a learning tool encourages self-motivated behaviour, was now utilised during the pandemic for self-motivated behaviour change (e.g. social distancing).

## Fostering effective use and learning

The Obiyama Nishi Elementary School's daily timetable was such that it tried to continue the holistic framework which included both subjects and non-subjects even during the school closure. The school provided subject instruction on line, as well as non-subject education on line, such as children's council activities. Obiyama Nishi's council activities, first entirely on line during the shutdown, combined online and face-to-face interaction after schools reopened. In a pandemic that may continue for a long time, and given the fact that other global viruses are likely to emerge in the future, it is important for children to learn how to go on with their lives (having fun) while understanding how to control the possible threat. Encouraging the children's council to lead and design some of the online and hybrid activities was a way to engage students more in their learning.

The shutdown lasted for three months. In a questionnaire given to 5th and 6th graders about whether they were able to spend their time meaningfully (a non-subject education goal) and to advance their studies (a subject education goal) in "a self-initiated manner" during the shutdown, 85% of pupils and 80% of parents answered positively. This was seen as an encouraging result by the school staff.

## Implementation challenges

According to the principal of Obiyama Nishi Elementary School, the main implementation challenges were gaps regarding access to the Internet, and familiarity with the online applications used for teaching and learning (LioLoNote School, Zoom, MetaMoJi ClassRoom, Microsoft Teams).

As was mentioned above, Kumamoto City had allocated a number of tablets to each school in response to the 2016 Kumamoto Earthquake. However, when the present pandemic began, there were not enough tablets for all children, since until the pandemic, individualised usage was not necessary. Because of the way COVID-19 spread, children could not cluster together in front of one tablet, and the school checked which families were able to access online resources using their own devices. Smartphones were used by some families as well, using the LioLoNote smartphone software. Families that did not have Internet access were provided with tablets. The tablets are cellular models, considered easier for families without Wi-Fi.

The school used several types of software for different purposes. LoiLoNote was used for online interactive classes, combined with Zoom breakout sessions. This continued into the reopening period, since teachers were able to conduct collaborative activities without children physically clustering together. During the shutdown, teachers utilised YouTube, which was seen as especially effective for 1st graders. They also combined this with the usual telephone calls, and emails. Microsoft Teams was used among the teachers.

In the beginning, not all teachers were comfortable with the IT applications used. The school offered 30-minute training sessions for teachers once a week since 2019 as the city strengthened its commitment to online learning. Zoom was used for the morning faculty meetings and the grade level faculty meetings, and Microsoft Teams was used to share information.

As for YouTube, it took about one hour to shoot the videos and another two hours to edit them. Teachers discussed by grade what they wanted the children to see then divided the labour among themselves.

## Monitoring success

As this note reports a school initiative, there was no “monitoring” as such – beyond the traditional ways of monitoring that students do what they are asked to do. Most of the monitoring of the success was about making sure that stakeholders remained engaged in their learning, and about following up if that was not the case.

YouTube sessions that were subject-based included tasks that the children had to do. Should children not submit the requested tasks, teachers would call their home and talk to the child. Notice of the online classes was sent to children using LoiLoNote, and emails were used for parents. The school homepage was used as well. Teachers supported parents through telephone calls, and at times, parents would come in person to the school.

## Adaptability to new contexts

The challenge to designing a holistic learning experience, which addresses the child’s learning in a holistic way, is universal. The pandemic and the social distancing it brings made the need for a holistic education even more tangible in many parts of the world. Each country has its social context which will influence what and how such education is possible.

Some key steps in the children’s council and committee activities in the present example are outlined below.

1. Children representatives from 4th to 6th grade form a children's council. Various sub-committees which differ by the needs of the children and school are set (e.g. planning committee, beautifying the environment committee, the newspaper committee which issues school newsletters, etc.). Information was exchanged using LoiLoNote School.
2. The 6th graders (last year of elementary school in Japan) lead the sub-committees. The committee heads are briefed on some of the goals for the school for that year by the principal on line (Zoom). Then each committee discusses on line what they want to do for this school year. They then recruit the younger grades. The activities are child-led, with the teacher serving as a mediator. In this example, the breakout rooms function on Zoom was used.
3. The 5th graders chose the committee they wanted to join. Each committee started to organise their individual activities as seen in the example above.

Establishing such an organisation, even on a temporary basis when it does not already exist, is possible in any context – although it may pose some different challenges in terms of making the committees alive and functional. In any event, this is not an organisation that requires any particular resources beyond access to online resources and software applications.

### Box 25.1. Key points to keep in mind for a successful adaptation

1. Identify the non-subject aspects of your curriculum and ensure they are part of your education continuity strategy.
2. Support students to understand what the health crisis means for them, and support their families as needed.
3. Establish a children's council and ask students to lead activities that are both fun and make them understand and internalise new restrictions related to the COVID-19 crisis.
4. Remain in constant contact with students and their families and ensure they get used to communicating using online software.
5. Use online tools in a flexible manner, since the COVID-19 situation changes daily, and ensure that there is a smooth transition from one stage to another (e.g. from school closure to school reopening).

## Acknowledgements

Thank you to Mr. Osamu Hirano, Principal of Kumamoto City, Obiyama Nishi Elementary School and Stéphan Vincent-Lancrin, Senior Analyst at the OECD Centre for Educational Research and Innovation.

# 26 Jordan: Leveraging Edtech without Internet connectivity using Kolibri

Navya Akkinepally, Regional Lead, South Asia and Training, Learning Equality

Lauren Lichtman, Partnerships Lead, Learning Equality

Chris Petrie, Head of Global Research, HundrED

Type of intervention: non-governmental with support from intergovernmental and governmental organisations
Website: http://learningequality.org/kolibri

## General description

Kolibri, developed by Learning Equality, is an adaptable end-to-end suite of openly licensed learning resources, tools and do-it-yourself support materials designed for teaching and learning with technology but without requiring connectivity to the Internet. This product ecosystem aims to provide supportive learning experiences in environments where there is little or no Internet connectivity, particularly during the COVID-19 pandemic. It is flexible and adaptable to varied learning needs and environmental constraints, and is devised to work within or complement existing infrastructure and initiatives. This ecosystem is centred around an open-source learning platform that provides robust functionality to support the kinds of personalised and differentiated learning that are typically only available in online learning environments. This is complemented by a specially curated library of open learning resources, a tool to support curriculum

alignment, and a toolkit of resources to support the use of this platform and open educational resources in varied blended learning environments.

As part of a four-country collaboration (Jordan, Kenya, the United Republic of Tanzania and Uganda), the UN Refugee Agency's (UNHCR) Connected Education team and Learning Equality have been working since 2018 with the UNHCR's Jordan office, with support from Google.org, to assist with use of Kolibri across ten connected learning hubs. These hubs, located across Amman, northern and southern governorates, as well as in Azraq and Zaatari refugee camps, closed down temporarily with the onset of the pandemic. Prior to closures and social distancing measures, the UNHCR Jordan's implementing partners, Jordanian Hashemite Fund for Human Development, CARE and Blumont/IRD ran these centres, with the support of coaches, to provide 13-17 year-old learners with daily access to digital Arabic learning materials on Kolibri. In a typical use case such as in Jordan, Kolibri can be accessed by multiple learners in the same learning environment via a server over a local area network connection; this enables real-time tracking of learner progress by an educator; it can also run on a single device for individual self-study. The combination of an adaptable technology platform with a relevant content base and an implementation model that can be accessed in environments without consistent Internet connectivity has enabled the delivery of digital education to learners with a diversity of educational backgrounds, as well as language and learning needs.

With the onset of the pandemic, Learning Equality and UNHCR Jordan evaluated how to ensure continuity of learning during the closures of the hubs, which resulted in several initiatives to support learners at home. In Jordan, there was a swift effort within weeks to place the offline servers in the hubs on the public Internet, and boost connectivity through paid Internet bundles. UNHCR Jordan also leveraged new materials developed by Learning Equality to provide pedagogical and technical resource guides in Arabic to use Kolibri at home with or without the Internet. Globally, Kolibri continues to address the breadth of learning needs during the pandemic and support continuity of learning going forward.

## Main problems addressed

Addressing the equity gap in learning is at the core of Kolibri. The global challenges that the Kolibri product ecosystem aims to address, including lack of connectivity and the need for tools to support learning in low-resource environments, have become more readily apparent with the onset of COVID-19. With social distancing measures in place, Learning Equality evaluated how to best support the continuity of learning using the current functionality in Kolibri. Because Learning Equality's products and tools are designed for low-resource contexts, the main problem was less about how to mobilise large-scale investment and more on how to continue to work within existing infrastructure and initiatives.

In Jordan specifically, the initiative aimed to address three main challenges:

1. limited available infrastructure
2. limited availability of discoverable, relevant resources that can be leveraged during the pandemic and beyond
3. limited support for educators, particularly around the use of technology.

More generally, what makes Kolibri innovative is a focus on equity: it is an adaptable solution created for and responsive to the diverse learning needs in these environments. It has an offline distribution and access model, meaning that it can be preloaded onto a device like a laptop, low-cost Raspberry Pi or a USB, brought to a location without Internet connectivity and/or shared peer-to-peer, and accessed over a local area connection. It can be leveraged in contexts with limited access to electricity, and where the Internet is costly and/or not prevalent.

Kolibri is low maintenance: while it is not low-tech, it is a robust learning platform extensively tested in low-connectivity contexts that does not require significant digital literacy skills to use. Educators and learners with limited exposure to technology can get started with Kolibri swiftly.

Kolibri responds to the needs of the low-resource learning environments where it is being used: it leverages existing hardware and responds directly to limited teacher capacity and training, limited digital literacy, large class sizes, and differing learning abilities amongst a group of learners.

Last, it is open-source, which is critical to ensure that learning needs, particularly for the most marginalised learners, are met: it is free of charge and open, it can be used and adapted to one's own needs, it can benefit from open contributors to build and improve the product, and new functionality is driven and prioritised by the feedback and needs from the Kolibri user community.

Amid school closures, Kolibri enables a continuum of learning possibilities: a learner who is at home can access Kolibri offline and an educator with Kolibri can provide remote support via WhatsApp. When there is periodic connectivity through an online server or when a learner periodically visits a learning environment with a central Kolibri server, the teacher can assess and support learner progress at a distance using Kolibri's built-in educator support tools.

## Mobilising and developing resources

At the beginning of the pandemic, Learning Equality continued to make available its ecosystem of products, which includes the open-source Kolibri Learning Platform, the Kolibri Content Library of curated and openly licensed resources, the Kolibri Content Pipeline to import new materials for use in Kolibri, the Kolibri Studio curricular tool and the Kolibri Edtech Toolkit with resources to support implementation.

After evaluating learning needs, Learning Equality developed pedagogical guidance materials and technological documentation for at-home learning. This new "At-Home section" of the Kolibri Edtech Toolkit includes resources to support parents, educators and learners in light of the shift to distance learning amid the COVID-19 pandemic, which UNHCR Jordan adapted to meet its needs.

While implementers have continued access to these resources, the mode of delivery may change during COVID-19. As an example in terms of what was already available in Jordan, two key areas from the existing implementation were leveraged:

1. ***Relevant learning resources.*** The Connected Learning Hubs use Kolibri's digital materials in Arabic focused on subjects such as STEM, Arabic language and life skills. At the end of 2019, Madrasati, an initiative of the Queen Rania Foundation, established a committee to evaluate these materials and map them according to the Jordanian national curriculum for Grades 7-11. Later, it established a committee with Ministry of Education experts from the Queen Rania Center to align the approved content and make it available via Kolibri. As of December 2020, more than 60% of the content was aligned with the national curriculum. These efforts were leveraged by the government platforms, Noorspace and Darsak, to support online learning and complement the Ministry of Education and the Queen Rania Center's efforts.
2. ***Servers with Kolibri.*** Within weeks of the pandemic impacting hub closures, UNHCR Jordan, with the support of the Jordanian Hashemite Fund for Human Development, placed a subset of the offline servers from the Connected Education Hubs on the public Internet. This enabled not only those who had Internet at home to access their same accounts as in the hubs, but also other non-governmental organisations which were previously unable to reach these hubs, to access Kolibri on line. For those with intermittent connectivity, UNHCR Jordan and Learning Equality developed quick-start guides in Arabic to install Kolibri with relevant materials on available laptops and desktops. UNHCR Jordan also distributed Internet bundles for home use.

Beyond Jordan, there are additional examples where existing learning resources and servers with Kolibri were similarly utilised to support learning during the COVID-19 school closures. For example in Uganda, leveraging existing efforts from the National IT Authority and the National Curriculum Development Centre with the support of UNICEF Uganda, Ugandan learners have access to an online, zero-rated instance of Kolibri on the government site with aligned learning resources that can also be accessed via MyUg Wi-Fi hotspots primarily around Kampala and Entebbe. Zero-rating by the mobile network operator enables learners to use the government site at no cost. Recognising that the current version of Kolibri could not fully support the needs of learners at home during the pandemic, even with additional guidance materials, Learning Equality has been working to support continuity of learning, particularly as schools reopen and/or experience periodic closures, in two areas:

1. ***Enabling asynchronous facilitation.*** The pandemic reinforced the need for Kolibri to support hybrid at-home and in-school models of learning, and enable asynchronous facilitation. In this model, a learner's device (which can be an Android device, laptop or other low-cost device) will synchronise with the centralised offline server when a learner periodically visits their school, or when a roving staff member visits their home to synchronise the user's data to an intermediary device.
2. ***Increasing portability of Kolibri with Android app.*** During the pandemic, Learning Equality has prioritised the release of the Kolibri Android app to support individual use by learners and educators at home, with functionality for also sharing content via messaging tools from within the app. Currently, in its initial private release version, it is being tested by organisations such as UNHCR Uganda (with the support of Education Cannot Wait), CARE Peru and UN Women Mexico. When the functionality to sync individual learner data is complete, and a more seamless experience for self-directed learning and asynchronous facilitation is supported, the Kolibri Android app will be released publicly (currently slated for Q2 2021). Learning Equality's existing implementing partners around the world have consistently communicated their needs around this new functionality and are eager to roll it out once it is available.

## Fostering effective use and learning

The core principles of Kolibri focus on supporting student-centred learning. As the Jordan example demonstrates, the pandemic has further emphasised the need for more personalised learning experiences, even within some of the constraints present in lower resource contexts. The following are three key aspects of how Learning Equality enables effective learning environments in these contexts:

1. ***Educator support.*** Learning Equality conducted several 90-minute virtual training-of-trainers workshops with varied partners to introduce and enable the effective use of Kolibri during the pandemic. Within the learning platform, educators can refresh their own content knowledge and move through guidance materials at their own pace on how to integrate Kolibri for distance learning.
2. ***Aligned resources.*** Learning Equality expanded the public Kolibri Content Library to serve a broader set of needs, including the curriculum alignment process of supplemental digital content to national curricula, through the Kolibri Studio curricular tool. For example, existing aligned materials were imported into Kolibri, including Khan Academy math aligned to nine countries' curricula, with additional Khan Academy subject areas for some countries.
3. ***Support for offline distance learning.*** Kolibri aims to support educators in effectively facilitating remote learning by capturing learning analytics, allowing teachers to track learner progress and receive notifications for when additional support for individual learners is needed, all without needing access to the Internet. The two-way interaction between learners and educators enabled by offline data synchronising in Kolibri aims to support continuity of learning and accelerate rates

of improvement. A few examples of ways in which implementing models can be adapted with Kolibri is outlined in this Home Learning Modalities Matrix.

## Implementation challenges

COVID-19 required rethinking the underlying design assumption of Kolibri that there is a physical space of social connection: that people with devices would be able to be in the same location, such as a Connected Education Hub, at a determined point in time. Based on feedback and lessons learnt from implementations, how Kolibri was used shifted during the pandemic. Some key related challenges addressed through that approach are outlined below.

***Reaching remote areas.*** Due to lockdown restrictions, travel to remote locations has been difficult. To overcome this barrier, Learning Equality facilitated connections between implementing organisations, governments and mobile network operators to set up servers, provision devices and support hardware distribution programmes to make organised content widely available. For example, Elimu, based in Kenya, is expanding local area network connections to reach home communities with Kolibri. In the United States, Tuscarora Intermediate Unit 11 (TIU-11), a regional educational service agency meeting the needs of the public and non-public schools, personnel and students in Pennsylvania school districts, is distributing Kolibri with relevant learning resources on Raspberry Pis to learners that do not have consistent connectivity at home. There have also been varying distribution models of Kolibri that are more direct to consumers (e.g. a forthcoming Android app publicly available in the Google Play Store) with built-in training and supportive guidance materials. These models, when used in conjunction with existing government efforts, help to support greater buy-in, scale and sustainability.

***Shifting to distance learning.*** Supporting educators in adopting newer methods of pedagogy (especially the use of technology and digital learning tools) is a key aspect of enabling effective transitions to distance learning. This can be achieved by maintaining contact between educators and learners through messaging services like WhatsApp and sharing links to online servers, when available, to support learning. Learning Equality expanded its Kolibri Content Library with materials specific to the COVID-19 response, with an emphasis on psychosocial and mental health support. This provides support for more hybrid models of learning where learners work through resources on their own, away from a designated learning environment, but also return to a centralised location to receive personalised support from educators.

***Limited device availability.*** Learners do not have regular access to individual devices at home. More often than not, they can only access their parent's mobile devices. Through the development of the Kolibri Android app, learners can engage in learning through these more common types of devices without a separate server, whenever they are accessible at home.

***Limited availability and usability of relevant digital learning materials.*** The dearth of digital learning resources was another broader challenge, along with curricular documents which are often not publicly available or digitised, and the time taken for curricular alignment and approval by curricular bodies. These challenges impact the ability of implementing organisations to effectively leverage products and tools such as Kolibri. With continuous deployment in online systems, the mantra of the technology world is "move fast and break things". But since Learning Equality designs for communities without connectivity, a focus on meeting well-defined user needs and creating robust core user experiences results in a longer release cycle. This means that every time a user uses limited Internet to download Kolibri and identified learning resources, they are receiving a robust platform with materials that are specific to their needs. As a result, rapid changes to support self-directed learning during COVID-19 focused on documentation, tooling and minor interface tweaks.

## Monitoring success

Learning Equality monitors the success of Kolibri both within Jordan and beyond, primarily by observing increases in access to learning resources and tools, as well as improvements in educator and learner confidence, development of skills, and boosts in learning outcomes. To understand the use of Kolibri across its community of users, anonymous (and pre-aggregated) statistics are sent back to Learning Equality's telemetry server from offline installations in cases where they periodically connect to the Internet. Kolibri also includes a distributed peer-to-peer model through which offline devices can synchronise directly with one another, making data collection possible even from devices that are always offline and may not even be used in proximity to a more central server such as in a school. Additionally, Learning Equality is currently piloting the Kolibri data portal, a centralised online tool for aggregation and exploration of learner data, with a small set of partners, including the UNHCR. This enables the UNHCR to track more detailed learner data through the Kolibri data portal and review session logs directly in the platform. These quantitative data are supplemented by implementing organisations that can collect and capture qualitative data through educator and learner interviews, post-training feedback surveys, and focus group discussions.

Learning Equality can also monitor the availability of relevant materials as an indicator of access to quality learning opportunities. Increased availability of aligned materials helps to further reduce equity gaps for marginalised learners. Sourcing aligned content and adapting existing documentation to enable effective implementation programme rollouts can be a promising model in other contexts around the world.

## Adaptability to new contexts

The adaptability of the Kolibri product ecosystem has already been demonstrated in its use globally. The example in Jordan shows a strong focus on adapting from existing infrastructure, providing supplemental support with Internet bundles and relevant content, but there are other examples globally of how Kolibri is being used in a variety of different contexts to support both learners and educators during the COVID-19 pandemic and beyond.

Kolibri is generally leveraged through its organic do-it-yourself adoption model comprising products and tools that are open source and leverage openly licensed learning materials. In particular, the Kolibri Edtech Toolkit supports implementing organisations with integrating Kolibri into learning environments by providing training materials, teacher resources, blended learning strategies, hardware suggestions and other types of do-it-yourself resources. The platform itself is translated into 23 languages (see the demo site for reference) with plans for more translations, based on identified needs.

Learning Equality takes a needs-based approach to product development, gathering insights from its global community of users, as well as from working closely with a core network of collaborators, including national non-governmental organisations, UN agencies, government and corporate partners, to co-design its solutions. The combination of organic adoption and work with partners has led to use in over 200 countries and territories.

There have been innovative examples of how the Kolibri product ecosystem has been adapted to support communities around the world amid COVID-19. For example, Instituto Paramitas, based in Brazil, adapted the Kolibri Edtech Toolkit to train teachers on Kolibri with activities shared via WhatsApp, using Google Hangouts for instruction, so that teachers could be prepared for school reopening. ShiftIT, based in Malawi, focused on context-relevant materials and created a "COVID-19 prevention" content channel on Kolibri, and sharing with others to use. Cassava Smartech provided zero-rated access to Kolibri via its Akello Digital Classroom, with relevant assessments created in Kolibri Studio and recordings of daily video lessons to learners in Zimbabwe, becoming one of the available COVID-19 response resources that beneficiaries of the Higher Life Foundation will receive as part of a partnership between Higher Life

Foundation and the Ministry of Education. Vodafone Foundation in the Democratic Republic of Congo, through the Vodaeduc platform, focused on distribution, based on the recommendation by the Ministry of Education for students to use the Vodafone Instant Schools for Africa Kolibri server, with its library of relevant content, during the pandemic.

### Box 26.1. Key points to keep in mind for a successful adaptation

1. Conduct needs assessments of infrastructure available for remote learning: Identify the availability of hardware such as mobile devices, tablets and desktop computers, as well as access to connectivity, to understand which implementation models can be used for learning. Kolibri can work on a variety of low-cost and legacy devices without needing the Internet; where possible, guidance can be tailored based on existing infrastructure and pedagogical needs.
1. Provide pedagogical guidance to educators to ensure adequate support for transforming their teaching practices due to COVID-19. Teachers might feel overburdened and under pressure to quickly adopt new and innovative strategies for teaching at a distance. Provide virtual training workshops and guidance materials and check in regularly to help support educators in transitioning to distance/hybrid learning. Connect teachers to one another via existing virtual networks wherever possible to support one another and strengthen communal lessons learnt.
2. Support motivation for learning by providing relevant and interactive learning resources. Through Kolibri, learners are able to access videos, books, interactive games and exercises. Support learners in personalising their learning journey by setting learning goals and considering ways to enable strong social and emotional well-being, building a more effective at-home learning environment. The Kolibri Content Library has resources to support social and emotional well-being in addition to traditional academic subjects.
3. Design for sustainability with education technology. Kolibri is designed to be integrate with other existing solutions; it has a plug-in architecture to enable rapid feature iteration and context-specific adaptations, without affecting the core open-source platform. Costs are reduced since it is open source. When thinking about pairing it with other products or learning resources, lean towards leveraging openly licensed materials. Considering the long-term implications of technology and digital resource choices will help to support buy-in, which in turn supports the sustainability of the initiative.
4. Enable strong feedback loops. Building tools and products quickly to meet the needs of users can prove to be fruitful if there are strong feedback loops in place. Ensure that there are ways to gather information on how the tools and products are being used and what improvements need to be made to best support learning. Similarly, during implementation, conduct interviews analysing multiple stakeholder and user perspectives with periodic surveys to adapt implementation models with Kolibri.
5. Build coalitions. Build relationships and foster mutually beneficial collaborations to support learners, highlighting some of the inequities in learning and the need for creative solutions and public goods that meet learner needs in low-resource contexts.

## Acknowledgements

Thank you to Zeina Jadaan, Head of Education, Civil Society Network for Displacement Country Coordinator, UNHCR Amman, Jordan for her review of this story, and to her colleague Nidal Almasadh for providing critical background information about this effort. Thank you to the UNHCR Connected Education team for their ongoing support of this joint initiative and sharing of lessons learnt, and in particular

Jacqueline Strecker, Connected Education Officer, and Meghan Kellner, Education Officer (M&E and Reporting), for her review of this draft.

# 27 Latvia: Your class

Reyer van der Vlies, Analyst, OECD

Type of intervention: governmental, public-private partnership
Website: https://www.tavaklase.lv

## General description

Tava klase provides additional education to students in primary and secondary education by offering educational television (TV) broadcasts, which are also available on line. The project was launched on 6 April 2020, three weeks after schools were closed and the idea was first pitched.

Tava klase used the airtime of two TV channels to broadcast educational video lessons daily between 9 a.m. and 2 p.m. until the end of the school year on 29 May 2020. The lessons were recorded in advance with the help of a select group of teachers who shared their lessons in front of the camera, sometimes with a group of children “acting” as students. The broadcasts intended to support teachers by providing educational video lessons in addition to their own teaching. For that reason, the broadcasts are relatively short: each lesson lasts 20 minutes. (Lessons in Latvia normally last 40 minutes.) A broadcast schedule was published in advance and materials were available on line as well so teachers could integrate them into their teaching any way they wished.

The broadcast schedule and focus of the lessons was based on the national curriculum. At the start of the project, the Ministry of Education took into account the different subjects and themes that are part of the curriculum for the period from March until May. The contents were then further developed for broadcasting in co-operation with parental associations and the National Centre for Education. Teachers were recruited and selected on the basis of the subject and grade they normally teach. Even though the project assigns a specific theme to each video lesson, teachers have a great amount of autonomy to share their lesson and use their materials. In general, a video lesson consists of an introduction, a demonstration or lecture, and sometimes homework for the student. It is up to the teacher to fill in the content. The contents include, for example, multi-language subjects, ICT and robotics, animation, media literacy, sport, theatre, dance

and singing opportunities. Some of these subjects, like robotics, are normally taught in only a handful of schools. The broadcasts make these subjects available to every child.

The project was initiated and funded by the Ministry of Education, and made possible with the support of two private TV broadcasting companies and a private telecommunications company. Most of the ministry's subsidy was spent on compensating teachers, who participated in addition to their regular job. A parental association took care of recruiting teachers. Finally, the project also attracted volunteers, who helped with the broadcasts in different ways. A few famous singers appeared in the broadcasts, making the TV channels more popular.

## Main problems addressed

The project addressed three problems:

1. not all children have sufficient access to digital devices
2. children in primary education in particular have more difficulties to learn on their own
3. teachers experience more difficulties reaching out to their students on line.

Immediately after lockdown measures were announced, the ministry sent a survey to parents to get an understanding of the availability of digital devices. According to the survey results, about 5 000 children (approximately 3% of the student population) did not have sufficient access to digital devices, either because there were no devices available at all or because devices had to be shared with other family members, like teleworking parents. Despite efforts from the government and private companies to provide as many digital devices to those children as possible, the ministry quickly recognised that these efforts would not be sufficient.

Especially in the case of younger children in primary education (Grades 1-6 in Latvia), the government was worried about the quality of education during the lockdown. Children in this age group are not or less accustomed to learn on their own, and thus need more attention from their teachers and parents.

Finally, teachers often encountered problems with remote learning. In general, online learning makes it more difficult to reach out to students. In particular, it is harder to keep young children focused. In addition, some teachers did not have the right set of digital skills for online learning.

## Mobilising and developing resources

To address these problems, the ministry sought a specific solution for primary and secondary school students. The idea for the current project erupted two days after schools were closed. As about 97% of households in Latvia have a TV connection, and often more than one TV, setting up a TV channel for education seemed an appropriate solution to the problems above.

The idea did not come out of the blue. A plan for a similar project for remote rural areas had already been considered, as it is difficult for schools there to find good teachers for certain subjects, for example science, technology, engineering and mathematics (STEM) education. That plan was never carried out, however. The school closure appeared as the right time to revive this plan. Due to the crisis situation, certain steps in the formal procedures could be skipped. Acting quickly was therefore possible.

Three private companies came to the ministry's aid. A telecommunications company offered its experience with packaging a TV channel and delivering digital content. Two broadcasting companies offered their slots between 9 a.m. and 2 p.m. for free. One of these companies broadcasts a popular sports channel. As sports events got cancelled because of the lockdown, the project could benefit from the availability of this channel. An advantage of the broadcasting companies' offer was that the ministry did not have to set up a

new TV channel. A second advantage was that employees from the broadcasting companies could keep their work. Instead of filming football matches (for example), they switched to filming educational lessons.

A co-operation with popular news sites also made it possible to include the content in other portals. Social media was used for the online promotion of the lessons, although the website remains the place to watch materials on line.

## Fostering effective use and learning

The educational broadcasts were offered as a supplement to regular teaching by teachers. The main purpose was knowledge transmission and providing teachers with supplementary materials: if teachers feared that they could not fully reach out to their students on line or wished to get support for some aspects of their teaching, they were free to use – or not to use – the video lessons and to integrate them into their own teaching any way they wished.

Teachers were recruited by a parental association. Only professional teachers could be recruited to ensure the quality of the video lessons. Lessons were also not broadcast live, and a professional crew was used to film the lessons, here again to ensure the quality and use of the final video lessons. This also allowed the occasional problem to be solved with more speed.

## Implementation challenges

The main challenge related to the time pressure, which dictated the terms for implementing the project. The project was set up in an “agile” way, as there was no time to think through every detail. Adjustments were made along the way, often based on feedback from users. For example, it is after teachers asked for the possibility to anticipate the broadcasts that a broadcast schedule was published in advance. This gave teachers the opportunity to integrate the broadcasts into their teaching. Another example is the addition of sign language for the deaf and hearing impaired. Even though not many children need sign language, and the method is expensive, the ministry found it important to follow up on this feedback. The website is constantly improved as well. An online archive of video lessons was created; a better search function is under construction.

At the start of the project, a large number of video lessons was filmed in a relatively short period of time. Much depended on the quality of the teaching performance of teachers; some were more successful than others. There was no time to check every video lesson; instead, recruited teachers were checked on their capacity to share their lessons on camera, for example by making a demonstration video. Under normal circumstances, more time would have been spent on the preparation and selection process, and on the filming and broadcasting.

## Monitoring success

After the first two weeks, more than 370 000 people had watched the TV channel at least once. (Latvia has a population of almost 2 million people.) At least 400 000 unique watchers were on the TV channel at the end of May 2020.

The website is also visited by Latvians outside of Latvia, who, for example, might wish to keep a bond with Latvia. In this sense, the project promotes the Latvian language abroad, and could thus be used as an inspiration for future projects with regard to language and cultural heritage.

## Adaptability to new contexts

The Tava klase project could be adapted to other contexts. Many of the available video lessons are relevant for future use, and will be edited and archived on a digital learning platform. Schools may use these video lessons as additional materials to their own teaching.

The success of the story is, however, partly due to the circumstances of the crisis, which led to an increased amount of volunteers and offers by private companies. For example, broadcasting companies may not have offered to use their airtime outside a crisis situation. For that reason, under normal circumstances, a new TV channel would have to be set up, or the project should focus on online activities only. Outside a crisis situation, it should also be taken into account that setting up a project like Tava klase can be subject to more formal procedures.

### Box 27.1. Key points to keep in mind for a successful adaptation

1. Select the group of students for which you want to create educational materials and decide whether those materials should be broadcast on TV and/or could be made available on line. For children in primary education, TV broadcasts may be an efficient way to deliver education.
2. Work closely with telecommunications and broadcasting companies to set up and organise the broadcasts.
3. Gather a network of organisations and volunteers to help with the broadcasts, from the recruitment of teachers to the promotion of the project on other news portals and social media.
4. Guarantee the quality of education by using professionals to create the materials.
5. Stay open to feedback, and try to adjust as much as possible based on the feedback.

## Acknowledgement

Thank you to the Ministry of Education and Science, and in particular to Mārcis Krastiņš (Tava klase), as well as the National Centre for Education of the Republic of Latvia and its former Director, Guntars Catlaks.

# 28 Mexico: Learning at Home

María Florencia Ripani, Director, Fundación Ceibal

Alessia Zucchetti, Co-ordinator of Projects and Research, Fundación Ceibal

Type of intervention: governmental
Website: https://www.aprendeencasa.mx/aprende-en-casa

## General description

The programme Aprende en Casa (Learning at Home) was created by the Mexican Secretary of Public Education to provide pedagogical continuity to 25 million students from preschool to primary and secondary education across the country, following the closure of all schools nationwide due to the COVID-19 pandemic. The backbone of the initiative was educational TV, a field in which Mexico has long-standing experience since the creation, in 1968, of Telesecundaria,[10] a national literacy initiative based on TV programmes for secondary schools in rural and isolated areas.

The main component of Aprende en Casa is audiovisual content, which is broadcast across a network of TV stations and streamed on Internet platforms. It included specific slots for each educational level, complemented with activities and assessment questions which are available on line[11] and delivered in print in underprivileged areas with no Internet access.

10 The programme Telesecundaria is implemented by the General Directorate of Educational Television in Mexico (Dirección General de Televisión Educativa), at Mexico's Secretary of Public Education.

11 Aprende en Casa online resources have been presented on the following websites: https://aprendeencasa.sep.gob.mx; www.televisioneducativa.gob.mx; https://www.aprende.edu.mx; http://jovenesencasa.educacionmediasuperior.sep.gob.mx; https://libros.conaliteg.gob.mx; http://tripulantes.sep.gob.mx (accessed on 1 June 2020).

The programme, which focuses on public education, also included a special radio strategy to reach students from indigenous communities. Radio programmes are aired in 15 different languages through a network of community and indigenous radio stations and the National Institute of Indigenous Peoples. The radio programmes were complemented with relevant activities considering the cultural background of the different communities. In addition, the initiative offers teacher training in digital skills, which is possible thanks to a public-private partnership.

Aprende en Casa started immediately after the suspension of face-to-face classes across the country. Its rapid deployment was possible because it relied on the country's previous experience of a TV-based educational programme: Telesecundaria.

Telesecundaria involved the creation of a national system for digital educational television using satellite technology. During the 2017-18 school year, it reached 1 398 273 students, accounting for 21.4% of the overall enrolment in secondary education in Mexico, although it had had an even wider coverage in 2000, with a reach of 53%. According to the information provided by the Secretary of Public Education, students from Telesecundaria showed outstanding results in national standardised assessments in Spanish and maths.[12]

With less than half of the rural population with Internet access, Mexico managed to provide pedagogical continuity expanding its TV learning strategy for secondary education to primary and preschool levels. Its delivery focused on providing equal access to educational resources and was original in that it combined the traditional approach of Telesecundaria with updated features, such as a TV and online platforms network strategy to deal with the exponential increase of the target audience.

## Main problems addressed

The main problem was to design a continuity contingency plan capable of coping with the challenges associated with the massive scale and high diversity of the Mexican educational system, which comprises more than 233 000 schools, 1.2 million teachers and 25 million students, including from indigenous populations.

One of the main challenges was to find a proper output that could be accessed by students and teachers across the country. As only 47.7% of users from rural areas have access to the Internet but 92.5% of households have at least one television,[13] and considering Mexico's well-established experience with Telesecundaria, Aprende en Casa opted for educational television as the main delivery platform. The General Directorate of Educational Television, the body in charge of Telesecundaria, had the necessary technical, operational and technological infrastructure and capabilities to develop a large-scale strategy, rapidly adjusting to the emerging needs resulting from this educational disruption.

The second problem related to the exponential increase in coverage and scope of the target audience. Telesecundaria was meant to provide services in Spanish for secondary education students in rural areas. Apart from generating new content, Aprende en Casa had to reach all students from preschool up to secondary education. This challenge was addressed by creating a network delivery strategy encompassing traditional TV broadcast with online streaming. To this end, Aprende en Casa built partnerships with public and private television networks and technology companies, including the Mexican State Public

12 According to the information provided by the Secretary of Public Education for this note, the referred assessments are ENLACE (Evaluación Nacional de Logros Académicos en Centros Escolares) and PLANEA (Plan Nacional para las Evaluaciones de los Aprendizajes).

13 Information provided by the Secretary of Public Education and the General Directorate of Educational Television of Mexico quoting information extracted from reports of the National Institute of Statistics and Geography.

Broadcasting System. In addition, a special initiative broadcasts audio content in 15 different indigenous languages through radio networks with a high reach among indigenous communities.

## Mobilising and developing resources

The pre-existing resources, infrastructure and experience were the main pre-existing pillars for developing Aprende en Casa, which facilitated the creation of new specific contents for preschool and primary education. After five decades of educational TV services, Mexico had more than 3 000 television programmes aligned with the secondary school curriculum.

To extend the offer to preschool and primary education, teams from educational TV and curricular areas from the Secretary of Public Education co-operated to create the new content within a limited time frame. They developed a content proposal based on pre-existing textbooks for each level following the national curriculum, which are regularly produced and distributed by the Mexican state.[14]

New features included support and educational resources for teachers, families and students, with dedicated sections on the programme's site, including on-demand access to TV programmes, textbooks, activities, educational games and personalised folders to upload completed assignments. In addition, the programme developed its own YouTube channel with specific playlists for each educational level.

## Fostering effective use and learning

A first means to foster effective use is to connect the programmes to the national curriculum. Aprende en Casa's audiovisual content and activities were designed in alignment with the curriculum and include activities and questionnaires to evaluate learning outcomes, which will be assessed by teachers once schools reopen. The material covers 25% of the curriculum of each educational level, since it was estimated that by the time schools closed, students had already learnt 75% of the annual study programme.

A second way is to apply a specific format to audiovisual materials to facilitate a clear and dynamic presentation of contents to secure students' engagement. The collection of audiovisual pieces are properly labelled with relevant information about the corresponding level, year, subject and topic. Moreover, they articulate with interactive activity books. Each programme starts with a general presentation of the broad topic, followed by a sequence of short fragments focusing on specific subtopics. Each subtopic includes an introduction, an explanatory section with relevant supporting images and settings followed by a closing segment with a summary of the contents presented. This format provides a dynamic pace to the programme, which is fundamental taking into consideration the target age group. It also facilitates the modularisation of the programme, since each of the subtopics become a short standalone video suitable to be published on YouTube (see this example). To promote identification and empathy with students, the presenters are usually adolescents who engage in problems and challenges, which work as prompts to facilitate the plot development.

Third, the initiative was designed for a broad reach. TV programmes are broadcast through TV networks for 10-14 hours a day from Monday to Friday, and organised in dedicated slots for each level. They are also available on demand on online platforms and through an app, which facilitates access to all the complementary material (see a presentation of the app in Spanish). The programmes can be accessed by

14 The National Commission of Free Textbooks is a decentralised public entity of the federal public administration which produces and distributes free textbooks for each school year for students enrolled in the national education system.

TV, phone or computer devices, and the corresponding activities are available on line or in print for underprivileged communities with no Internet access.

In addition, a substantial part of student and teacher engagement in the initiative is based on the co-ordination of solutions with regional authorities, teachers and school authorities across the country. This includes establishing guidelines for remote interaction with students. Teachers have been interacting with students and their families, using the programme's site and instant messaging apps (notably WhatsApp) to facilitate the use of educational materials and activities created by Aprende en Casa and maintain a dynamic communication exchange with them.

## Implementation challenges

The main implementation challenges related to providing contents, digital enhancements and teacher training in a noticeably short period of time. Many of them were overcome by public-private partnership solutions. For example, to create an effective output to deliver the programme's online audiovisual material, Aprende en Casa partnered with Google to create a dedicated YouTube channel.

In addition, further partnerships were built with national and international private and public organisations to gather educational resources and provide training for teachers to develop digital and distance learning skills. As a result, 20 courses and a massive webinar have already been offered, benefiting more than 1 million teachers. Partners included technology companies, non-profit organisations and universities.[15]

To guarantee content provision to students from rural and isolated communities with no Internet access, Aprende en Casa delivered 300 000 printed educational materials. This was done with the collaboration of the National Reading Programme, which develops literacy activities targeting vulnerable communities. For this reason, this government had the information and logistics already available to identify and deliver hard copies to underprivileged students through a decentralised regional process involving employees and volunteers.

## Monitoring success

The monitoring of Aprende en Casa relied primarily on a national survey answered by more than 300 000 teachers, which was jointly implemented by the Secretary of Public Education and the National Labour Union of Education Workers (Sindicato Nacional de Trabajadores de la Educación). According to data provided by the Secretary of Public Education, the survey showed that 82% of teachers reported having weekly interactions with 9 out of 10 of their students, and 61% considered that the actions implemented to develop the educational programme were "good", "very good" or "excellent".

Regarding how teachers accessed the programme's contents, the survey suggested that 50.2% used their mobile phones, nearly 30% other devices, 14.5% television and 0.3% radio, while the rest relied on other instruments and materials.

In addition, the Secretary of Public Education is planning to further monitor and assess the programme after the reopening of schools. By then, teachers will access and review further activities completed by students to assess learning outcomes.

15 Partner organisations include: Khan Academy, Fundacion Carlos Slim, Microsoft, Fundación Telefónica, Google and Red Magisterial.

## Adaptability to new contexts

The strategy implemented in Mexico shows the potential of a distance learning strategy based on television and audiovisual material, particularly for populations with unequal Internet access. The Aprende en Casa approach may be transferable to low- and middle-income countries, particularly if they have previous experience in educational TV.

Considering that Internet infrastructure continues to be limited in many regions across the globe, resorting to traditional and accessible technological solutions might be an alternative until more sophisticated resources become available.

The strategy is also applicable in countries that have made great investments in their Internet infrastructure but have not yet reached a high level of maturity of associated pedagogical services. In this context, a combination of educational television with radio and online education could be a potential solution for guaranteeing pedagogical continuity.

Mexico's lines of implementation, involving the use of several complementary outputs, resources and services – such as radio, printed materials, online content and teacher training – as well as public-private partnerships, could be easily further developed in the future and adopted by other countries in a post-COVID scenario. This would help to properly address diversity by selecting resources tailored for specific groups of students. In an increasingly complex and unpredictable world, partnerships might contribute to working in co-operation with a number of key public and private organisations that could provide some of the resources that education services need but cannot procure on their own.

### Box 28.1. Key points to keep in mind for a successful adaptation

1. Explore the availability of audiovisual, radio and digital material in your own organisation and with potential partners to cover the targeted curriculum.
2. Analyse the infrastructure and possible networks to deliver content (TV, radio and on line).
3. Consider delivery outputs accessible to students, families and teachers, including vulnerable groups.
4. Select the platform with the greatest potential to reach the educational community and plan accordingly, integrating complementary outputs.
5. Segment your target audience and identify relevant resources and possible enhancements depending on the delivery platform.
6. Involve teachers, parents, school leaders and regional authorities in the design and implementation process.
7. Make the learning experience enjoyable (students learning from home need more motivation).
8. Build necessary partnerships with national and international public and private organisations.
9. Create a clear and organised strategy with available resources, including a plan to assess learning outcomes.
10. Monitor your programme and make it flexible in order to make necessary adjustments.

## Acknowledgements

Special thanks to the Mexican Secretary of Public Education, particularly to Lidia Camacho and Germán Ruiz.

# 29 Netherlands: Students help students

Reyer van de Vlies, Analyst, OECD

Type of intervention: non-governmental
Website: www.studentenhelpenscholieren.nl

## General description

Studenten helpen scholieren (Students help students, SHS) is a digital platform that provides online tutoring and a range of additional online learning services to students in middle and high school. SHS was set up by four young professionals immediately after lockdown measures were announced in the Netherlands.

SHS offers free online tutoring – with the possibility of making small donations – to middle and high school students. University students can apply on the SHS website as a tutor in a subject in which they excel, while middle and high school students can sign up to ask for help with one or more specific subjects. First, a basic algorithm connects both parties, then it is up to them to schedule a trial online tutoring session to ensure that it is constructive.

SHS also offers a range of digital learning materials that were made available for free by publishers. A dedicated chatbot helps middle and high school students with their learning skills, while middle and high school students and university students can participate in interactive webinars (master classes) to improve their learning or tutoring skills.

SHS was initially set up to help high school students in their last year of secondary education prepare for their final exams (the “central exams”). After the government announced that the central exams would be

cancelled, the initiative broadened its scope to include secondary education as such. In practice, mostly high school students take advantage of the initiative.

## Main problems addressed

The initiative recognised the importance of the continuity of education during the lockdown, and aims to support the most vulnerable children during this time. The platform provides free services, so that every child can benefit, thanks to university students offering their tutoring services free of charge, the government providing a subsidy, and publishers and software providers offering free licenses.

While schools struggle to keep everyone involved, many children have difficulty learning at home. The initiative takes into account that such difficulties affect the quality of education, especially for students from disadvantaged backgrounds whose parents cannot provide academic support nor private tutoring. (It should be noted that private tutoring – "shadow education" – is becoming increasingly popular in the Netherlands, raising questions about the accessibility for vulnerable children. During the lockdown, existing learning gaps between advantaged and disadvantaged children could increase.)

The initiative does not aim to replace regular education. Instead, it offers online tutoring in addition to teachers teaching on line.

## Mobilising and developing resources

SHS was launched right after lockdown measures were announced in the Netherlands. The founders started with a simple website, based on Google Forms, to match tutors (university students) with middle and high school students, who could register on the website. The first 300 matches were made manually. The founders wanted to replace the initial website with a more professional platform with more functions than just a matching tool. As no affordable digital platform was available, they built their own within two weeks, saving a lot of time. Companies sponsored the initiative by offering free licenses. During the crisis, the Ministry of Education subsidised the initiative and promoted the platform through its network (e.g. newsletter, website).

SHS relies on university students' willingness to volunteer. At the start, the founders hoped and expected that university students would offer their help, as they had more time on their hands during the lockdown. SHS also relies on heightened media attention due to the lockdown. Publishers and other digital service providers were willing to participate as well, for example by offering free licenses for digital learning materials, such as digital books and preparation materials for exams. The platform also offers a chatbot that is specialised in learning skills. Middle and high school students can ask the chatbot questions, for example about how to manage their learning schedule. With the help of a more advanced algorithm and a decision tree, the chatbot provides answers, tips and feedback to these students. SHS does not pay for the use of such digital services.

SHS uses social media to recruit university students to tutor and reach out to middle and high school students. The initiative immediately received a lot of positive (media) attention. National television and newspapers discussed the initiative, which even lead the King of the Netherlands to make a public statement of appreciation.

## Fostering effective use and learning

SHS offers interactive webinars (master classes) to volunteer university students to ensure the quality of the online tutoring sessions. At the same time, middle and high school students can follow master classes to improve their learning skills ("learning how to learn"), which are especially useful for distance learning.

To guarantee the quality of online tutoring, a video connection between the tutors and students is necessary. In an ideal situation, SHS would have provided even more advanced features, such as interactive whiteboards, but no free licenses were available. The founders were aware that accessing the platform would be a problem for children without digital devices. For that reason, they shared information about other organisations that may provide free computers.

The website is a continuing work in progress. For example, online video call software is being developed so that the tutors and middle or high school students no longer need to use external applications. This will also create a solution for central and secure data storage.

## Implementation challenges

In spite of intensive efforts to build a proper platform, SHS has experienced difficulties reaching its target audience. It benefited from social media and media attention, but it proved challenging to build a network with schools and teachers. Such a network is highly relevant, especially if media attention wanes after the crisis. Targeting vulnerable students is difficult, as they are harder to mobilise. It is also a challenge to get on the radar of other organisations that might be able to get into contact with those students.

A last challenge was to motivate teachers to support the initiative. Framing the message turned out to be particularly important, as teachers were sometimes unaware of the background and goal of SHS and perceived it as competition. For that reason, SHS made it as clear as possible that the initiative proposes to help teachers with additional one-on-one tutoring, not to replace them.

## Monitoring success

After about a month, around 1 000 matches were made with 700 middle or high school students (some of them receive help for different subjects). SHS did not set out a specific target in the beginning. It tries to target vulnerable children, but does not verify the student's background.

During the crisis, the initiative focused solely on reaching out to university students to tutor and middle or high school students to learn, and on making online tutoring possible. No monitoring was set up. In the future, an evaluation system could be set up; for example, one that is comparable to commercial websites.

## Adaptability to new contexts

The initiative could be adapted to other contexts. However, its success is partly due to the circumstances of the crisis, as university students were willing to volunteer, and publishers and software providers offered free licenses, which also increased media coverage. Under normal circumstances, such an edge might not be available, meaning that an initiative like this would be more costly. Funding is necessary to offer free online tutoring and other online learning services, especially as tutoring is usually expensive and a source of income. With sufficient funding, an initiative like SHS might be a solution to providing tutoring to vulnerable children in the future.

The main investment is the launch of the digital platform. Even though SHS was set up within a couple of weeks, the founders warned that under normal circumstances, it takes considerably longer to set up a comparable platform.

### Box 29.1. Key points to keep in mind for a successful adaptation

1. Invest in an adequate digital platform and see what relevant services are already available.
2. Build on a network of schools and teachers to reach (vulnerable) students.
3. Use charity to increase media coverage and willingness to participate or donate.
4. Restrict the scope of the platform to secondary education. Primary education requires more conditions, such as screening and interaction with parents.
5. Co-operate with other organisations, such as those that provide digital devices to students, and ask them for help reaching out to students.
6. Pay attention to the communication strategy, especially with regard to teachers, and make sure that it is clear that tutoring is additional to regular education, not a replacement.
7. Use social media effectively to reach out to children.
8. Pay attention to the privacy of children and the security of personal data.

## Acknowledgements

Thank you to Sander Bos (SHS) and Isabelle Schultz (Ministry of Education).

# 30 New Zealand: Reconnecting students through the arts

Koen van Lieshout, Analyst, OECD

Type of intervention: governmental (independent public university)
Website: https://www.teritotoi.org

## General description

Te Rito Toi is an online resource to support primary education teachers in addressing student well-being as they return to the classroom. Te Rito Toi is a metaphor in Māori representing how the arts (*Toi*) are at the centre of all growth. The *harakeke* (flax) plant represents the *whanau* (family) in Māori thought. The *rito* (shoot) is the child. It is protectively surrounded by the *awhi rito* (parents), the outside leaves represent the *tūpuna* (grandparents and ancestors). The resource was designed in response to the COVID-19 crisis and launched on 24 April 2020. Te Rito Toi believes that schools are not just preparing students for the future, but also need to help them make sense of the present. After disasters and crises, schools must prioritise helping learners to safely explore and address the changes in the world they live in. Students should discuss their concerns and questions in class, and be guided along the way. Teachers have a unique position to lead learners in engaging with their experiences during crises, and to help them imagine and explore the future. Based on international research that confirms the central role of the arts in meaning, making and the renewing of hope, Te Rito Toi positions the arts at the centre of children's return to schooling after disasters and crises.

University of Auckland scholars built Te Rito Toi based on research on engagement with schools post-disaster in diverse settings, such as Christchurch post-earthquake and post-terror attack, Mexico City post-earthquake responses, and Australia's earlier post-bushfire reaction in 2020. They found that when classrooms reopen following or during ongoing crises, teachers need research-informed support to

manage the stories, questions and issues children inevitably bring to their classrooms during or after the disaster. Therefore, Te Rito Toi focuses on the classroom pedagogies most appropriate when schools reopen after a crisis to provide teachers with actionable advice on how to engage students on these topics. Te Rito Toi's key objective is to provide clarity and reassurance with research-informed processes for teachers to ensure the return to school is a positive and life-affirming experience for children.

The project privileges arts-based pedagogies as ways for teachers to reconnect students to learning safely and appropriately. Te Rito Toi provides guidelines for principals and teachers, lesson plans for teachers, detailed strategies for classroom support, and publishes accessible research on the bigger context of art and social and emotional learning on its online platform.

## Main problems addressed

The main issue addressed by this initiative is the stress and/or trauma (possibly) experienced by students during the lockdown, and the changes in their world due to the COVID-19 crisis in general. Moreover, advice is provided for different stages of school closure and reopening with respect to student well-being.

- ***Providing lesson plans for teachers through different mediums of art.*** Te Rito Toi provides a range of lesson plans for teachers, specific to different age groups and student needs. Lessons take on different mediums of expression, such as imagination and conversation (e.g. with a plush bear toy), dance, acting or drawing. Some lessons are specifically dedicated to anxiety, loneliness or exploring emotions. Descriptions of each of the lessons are short and action-oriented; as such, there is not a lot of preparation required by teachers besides choosing which lesson fits their context best. The lessons detail an arts-based activity, what is required to engage in the activity and the steps teachers would need to take to guide students through this lesson. The project privileges arts-based pedagogies as ways for teachers to reconnect students safely and appropriately to learning. The online support includes arts-based lesson plans, links to useful picture books (known to be particularly useful in these situations), advice for managing stories and questions, and advice for teachers and principals for general management.
- ***Advice on family violence and child abuse.*** This is a one-page brief with some basic framing of the issue, practical actions to take and resources specific to the New Zealand context. As a short overview with a number of key points, it serves as a reminder of the impacts of the COVID-19 crisis on students' home situations. There is also guidance on what pastoral care should look like, including the reminder that every employee of a school should anticipate providing such care at times (if approached by a student about an issue they are experiencing).
- ***Information leaflets on different stages of school closure and reopening for principals and teachers.*** Four stages are outlined: 1) during lockdown; 2) preparing for reopening; 3) partial reopening; and 4) full reopening. A two-page note describes each of these stages, with a focus on the well-being and security of teachers and principals themselves, and actions they could take to support families and students. These recommendations are based on post-disaster research in various contexts and provide a range of suggestions that could be tailored to specific situations. These can serve as a reference guide in an accessible format that schools can build on while determining the (relatively autonomous) strategies they need to take at each of these stages.
- ***Providing support for principals in taking this approach.*** There are a number of blogs and short leaflets with the academic research underlying the lessons on anxiety, setting boundaries, building resilience, creative thinking and the role of art. There is a particular focus on accessible language, so they can serve as quick reference works for principals and teachers. Authors span experts from various disciplines and represent a number of countries.

- ***Advocacy and awareness about the need for a focus on the socio-emotional well-being of students.*** Beyond providing actionable steps to be taken, a last issue Te Rito Toi addresses is to put the issue of student well-being post-disaster on the agenda. The project has explicitly engaged with the national organisation of principals, and participated in a number of webinars inside and outside of New Zealand to talk about the type of work and the reasoning behind the work. The message they seek to portray is to not focus on "how kids catch up" upon their return to school, but rather "how we help kids make sense of the world".

## Mobilising and developing resources

The development of resources largely centred on the connections Prof. Peter O'Connor has built throughout his professional career. These connections were formed through work on the Australian bushfires, and earthquakes in Mexico, Japan and New Zealand (Christchurch). These events built both an interest in and significant experience around returning to school after such events. Mobilising resources, therefore, took the following forms.

Under the leadership of Prof. O'Connor and Prof. Carol Mutch, a large number of academic contacts wrote lesson plans and/or other advice as a favour to the project (i.e. free of charge). These experts focused particularly on addressing trauma in schools after the students return, and on delivering fully fleshed out activities ready to use by teachers. According to Te Rito Toi, these resources were the first substantial curriculum resources in the arts and mental health for primary schools in at least 15 years. They consist of:

- a series of lesson plans focusing on anxiety
- a series of *nga toi* (arts) lessons
- adapted materials to provide drama lessons
- materials that focused on making sense of social distancing
- a poetry lesson
- detailed advice for teachers and principals on the return to school
- advice around family violence and child abuse post COVID-19
- materials on Māori ways of understanding well-being through local customs – Hā Ora, meaning "breath of life". (These are written by representatives and educators from the Māori community, and partially written in Māori as well.)

Existing philanthropic grants for the research centre in the department that houses most of the University of Auckland staff involved in the project were used for the creation of the website (totalling NZD 30 000 or ~EUR 15 000-20 000). The budget for the creation of Te Rito Toi was both easily accessed and mobilised. The website was built between 1 April and 23 April, using the contacts and resources (e.g. the web developers) from this same research centre.

Lastly, the platform was built through a partnership led by the University of Auckland alongside the New Zealand Principals' Federation, the New Zealand Educational Institute, the Sir John Kirwan Foundation and partly funded by the New Zealand National Commission for UNESCO. There has historically been good co-operation and trust between those diverse actors, which has helped create a large support network for the project in the country. In part, the small size of these professional networks in New Zealand has also helped in this process.

## Fostering effective use and learning

First, the platform fosters effective use and learning by ensuring that the resources can be implemented at a very low cost. The focus on different stages of reopening or closure of schools sets a clear pathway for which actions need to be taken at which point. The lessons are short, tailored to different grades, and focus on a particular topic and art form. Teachers can implement and execute the resources as provided on the website. The research, moreover, follows the same mould – short, accessible pieces of writing that do not require hours of reading. This format ensures that the barrier to using these resources for teachers and principals is as low as possible.

Second, the teachers' union and principals' federation are both active supporters and partners in the project. These organisations have near complete coverage, as 90% of all teachers in New Zealand are members of the union, and all principals in the country are in the federation. Both teachers and principals in New Zealand look to these institutions for support and guidance and thus knowledge of and interest in Te Rito Toi has become widespread in the country. This environment is further fostered by the government, which has had an active focus on well-being policy throughout its term.

Third, people's awareness of Te Rito Toi has increased through demand-led webinars. A number of organisations both inside New Zealand and abroad organised such opportunities to speak about the initiative, its purpose and method. This fostered effective use by both spreading the word and by building trust in the platform, as organisers often are teacher- or principal-led groups.

In terms of pedagogy, the lesson plans also foster effective use and learning. Storied arts provide safe opportunities to engage with the topic of emotions and trauma. The methods are based on well-researched and tested pedagogical methods. Lessons, for example, ask children to give advice (to a toy bear) about ways to improve mental well-being – a method that allows children to become actors (agents) rather than victims (passive). The research behind these lessons helps instil trust in their effectiveness, whereas the design and execution of the lessons as described will foster student engagement and learning around well-being.

## Implementation challenges

There were a number of implementation challenges to get this project up and running.

- ***Getting people on board.*** The project relies heavily on buy-in from other experts, who provide all the materials, and on the users: teachers and principals. Moreover, government support – particularly the Ministry of Education – was key in creating space for a well-being-led return to school. The situation in New Zealand, where both teachers and principals are (almost fully) represented in two organisations, makes such a task easier. Moreover, the good connections of the initiative-takers behind Te Rito Toi improved such support, as did the well-being focus of the government. However, the speed with which this project needed to be set up did require significant pull and time investment to organise this buy-in, which was done by temporarily increasing the working hours of key individuals.
- ***Speed and human resources.*** As teams are relatively small and the whole project was set up in three weeks, there was a heavy burden placed on key people in the organisation. For the web developers, this also meant working overtime, and for academics – who all still had to do their regular work and work on the adaptations required for their own school's closing – similar additional hours were logged.
- ***Technical challenges related to the website.*** There were some technical glitches along the way, and the Google analytics strategy behind the project needed to be defined. The website was mainly designed to be easy to navigate and to look appealing, and was built specifically for this project.

- ***Budget.*** There was very little budget for the platform available, and no money specifically raised for its creation. Only the design of the website cost money though, given that the rest was solved through favours.
- ***Dissonance with policy priorities.*** The predominant narrative in the education community is that schools need to help students catch up with academic work and get back to normal as quickly as possible. Publicly supporting this work with a research-informed practice approach has been critical to ensure it was taken as a serious complementary alternative to the "back to normal" or "catch up" strategy.

## Monitoring success

Three indicators of success are currently considered.

The first is reach and use within New Zealand. In the first month since its launch on 24 April, the online resource has garnered over 250 000 page views by 37 000 teachers. Nearly half of all primary teachers in New Zealand have visited the website, and the average teacher visits or downloads eight pages per visit.

A second measure of success is international engagement with the resources and/or topic area. Overall, Te Rito Toi has been viewed and accessed by people in 112 countries around the world. Countries around the world have looked at similar approaches as 1.2 billion children return to schools after lockdowns. Canadian, Hong Kong (China) and Australian educators are looking at using local expertise to build their approaches. This global push for a return to classrooms through the arts saw Te Rito Toi highlighted by UNESCO and the World Alliance of Arts Educators in a webinar held on 20 May.

A third measure of success is the effect of this resource – and other resources to a similar end – on the prominence of art in education, particularly when utilised to address well-being or emotions. The overwhelming uptake in the resource led Perry Rush, President of the New Zealand Principal's Federation, to call on the Ministry of Education to rebuild the arts in schools. The article attracted both national and international interest and support. Webinars about the use of the arts and a focus on well-being attracted over 30 000 teachers in Australia and New Zealand. As a result, the arts and well-being became the focus for many students as they returned to school in New Zealand and Australia. UNESCO and the World Alliance of Arts Educators picked up a global push for this approach.

## Adaptability to new contexts

The approach is applicable to other contexts. The main necessities are a lot of passion and the willingness to get the work done. In this case, the drivers of the project had many connections they could rely on, which significantly reduced the cost of operations. However, provided more time and (some) more resources – which need not be very high (the total cost of this project is under EUR 20 000) – a less developed network need not be an unsurmountable barrier. Every country that reopens schools could set up a similar platform, or translate some of the resources provided by Te Rito Toi and employ them there.

The scalability of the project in New Zealand is mostly relevant in scope, not reach. The number of resources, particularly the lessons, could be further expanded, provided those writing the lessons have the time and opportunity to do so. However, it is not entirely clear this would be necessary, given this element of the curriculum is meant to take place upon return to schools, not necessarily as a consistently sustained element.

The initiative can be sustained after the COVID-19 crisis. Those elements particularly dealing with trauma and disaster might be less relevant, but dealing with student well-being through art and learning about emotions and communicating feelings retain their applicability. This could be seen as a transformative

practice, wherein art takes a very therapeutic role in learning and helping students make sense of the world around them.

### Box 30.1. Key points to keep in mind for a successful adaptation

1. Build on networks already in place with content creators and website builders – these could take the form of favours and/or as work with some monetary compensation.
2. The resources should be short, simple and actionable. Teachers and principals should not need to spend hours reading materials, but be able to use the guidance and resources on the website with as little time investment as possible.
3. The buy-in from teachers and principals is dependent on how their trusted institutions deal with the resources. Ensuring there are strong connections with those institutions and generating support from them is key.
4. Speaking directly to these groups, e.g. through webinars, could be a great way to answer pressing questions, further foster trust and generate awareness about the resource.

## Acknowledgements

A grateful thanks to Professor Carol Mutch and Professor Peter O'Connor from the University of Auckland.

# 31 Nigeria: Edo-BEST@Home

Alberto Munoz-Najar, Consultant, World Bank

Joan Osa Oviawe, Executive Chairperson, Edo State Universal Basic Education Board

Type of intervention: public-private partnership (led by the government)
Website: http://subeb.edostate.gov.ng/home-school

## General description

Nigeria has the largest population in Africa and even before COVID-19 faced the challenge of having over 13 million children out-of-school, which is approximately 20% of the total out-of-school child population in the world. Moreover, there is a constant threat to schooling, emanating from insurgent activities and attacks on schools that have especially targeted women and girls. On top of these challenges, the COVID-19 pandemic meant that about 38 million students (from pre-primary to secondary) were unable to continue going to school.

To prevent further spread of COVID-19, Nigeria's Federal Ministry of Education closed all schools in mid-March 2020. This decision was accompanied by an education response plan to COVID-19 that was developed by a Task Team set up by the Ministry of Education and the Universal Basic Education Commission. At the same time, states such as Lagos released radio and TV learning programmes to mitigate learning loss as a result of school closures, as did other states.

The state of Edo launched Edo-BEST@Home, a mobile-based remote learning programme that extends the pre-existing Edo Basic Education Sector Transformation (Edo-BEST) programme, a public-private partnership between the Edo State Basic Education Board, the World Bank and Bridge International Academies.

Edo state has a population of over 4 million (half of whom are under 30 years old), and access to devices and connectivity needed for remote learning varies across the state. According to data from the Demographic and Health Survey, 46% of households possess a radio, 69% a television, but 91% have a mobile phone. The Edo-BEST@Home programme therefore decided to focus on the mobile phone as the main medium. Approximately 29% of primary school students in Nigeria frequently accessed the Edo-BEST@Home remote learning solutions.

The remote learning programme enables students to learn from resources that can be downloaded for free from an online repository while at home. The EdoBEST@Home unimodal mobile-based remote learning programme includes interactive audio lessons, digital self-study activity packets, digital storybooks, mobile interactive quizzes, learning guides for parents and virtual classrooms that enable interaction between teachers and students.

To foster effective use of the educational resources provided and to ensure learning, Edo-BEST@Home focused on four key aspects: 1) providing engaging programming focused on content aligned to the curriculum; 2) constant support from teachers and parents to students; 3) formative assessment in the form of interactive quizzes; and 4) ongoing support to teachers through virtual coaching.

## Main problems addressed

The COVID-19 pandemic prevented more than 260 000 primary school students in the Edo-BEST programme from being physically present at school. There were three problems that Edo-BEST@Home wanted to address in this context:

1. the programme had to deliver quality instructional materials to all students in a state where access to the Internet is limited
2. teachers could not be physically present due to social-distancing restrictions
3. parents and caregivers were ill-equipped and had limited time to act as learning facilitators at home.

Edo-BEST officials developed a mobile phone unimodal solution to provide remote education to all students across the state, from pre-primary to junior secondary (middle school). The public-private partnership aimed (and succeeded) to offer the remote learning solution not only to government schools that were already benefiting from Edo-BEST, but also to students from other schools in the state.

## Mobilising and developing resources

Edo-BEST@Home leveraged its existing education model and adapted it to a remote learning solution. At a conceptual level, Edo-BEST's new remote model continues to be based on its five key principles: 1) scientifically based lessons on curriculum-aligned content; 2) ample student practice for each concept; 3) assessment; 4) data-driven focus on reading proficiency; and 5) individual and small group attention for each student. At a practical level, Edo-BEST@Home has been able to leverage existing resources at four main levels:

1. ***Teacher capacity.*** Edo-BEST@Home has capitalised on having more than 11 000 teachers who had already gone through a pedagogical and digital training programme in the past two years. Thus, a good number of teachers were equipped with pedagogical and technical skills to support students remotely while schools are closed.
2. ***Content and learning activities.*** Prior to the COVID-19 pandemic, the Edo-BEST programme had already developed a rich repository of content such as guides for teachers, practice exercises for students, reading activities and quizzes that were distributed for each lesson. These learning activities and content have been adapted for a remote learning environment and are readily

available through the Edo-BEST@Home site for free. Now, students have access to four hours of interactive audio lessons that are aligned to Edo's curriculum, digital self-study activity packets that are distributed through WhatsApp and on line, and mobile interactive quizzes for students to use at home every day.

3. ***Online learning platforms.*** Before the pandemic, Edo-BEST also had an online learning repository, which was further strengthened during the school closures with more content being uploaded for students and teachers in the state. Moreover, MTN, a telecommunication operator in the state, agreed to zero-rate Edo-BEST@Home digital resources so that students and teachers can access all the available educational resources without paying for the bandwidth.
4. ***Strong databases.*** Since 2018, the Edo-BEST programme, with the support of its more than 11 000 teachers across the 900 schools that it operates, has been building a database with the profile and contact information of every student. With this information, teachers were able to contact parents as soon as the government announced school closures, to maintain personal contact, deliver learning materials and provide remote support to ensure that children continued learning while school buildings were closed.

## Fostering effective use and learning

- ***Engaging content aligned to the curriculum.*** All programming focuses on content from the curriculum and has been created to foster constructive play to keep students engaged in the learning process. Content and learning activities are released every week for each grade level. For example, the interactive audio lessons incorporate engaging stories, nonfiction passages, math instruction and practice, and songs and games to provide students with a joyful and robust learning experience. The self-study activity packets include practice problems that help students progress through the core concepts of the Edo curriculum. Similarly, the digital storybooks allow students to practice their reading and comprehension through stories that are accessible for every age group.
- ***Student support.*** Parents, caregivers and teachers are being equipped with tools to help them effectively support students through the remote learning process. For example, friendly learning guides have been designed to be used by a member of the household with the student. These guides have targeted practice exercises and answer keys to allow caregivers and children to reflect on the results.
- ***Automated assessment.*** Students can access interactive quizzes through a mobile phone on a daily basis. Quizzes are effective to help students practice, retain what they learnt that day for each course and receive instant automated feedback through WhatsApp or a text message. All quizzes are also aligned to the Edo state curriculum and the education level, and allow students to practice a wide range of skills, from using vocabulary to solving math equations.
- ***Teacher support.*** Learning and development supervisors and quality assurance officers have been trained to virtually coach teachers and support them while they are using the Edo-BEST@Home platform. This virtual coaching programme has been available to all teachers, but those without smartphones were not able to participate, so the state provided extra face-to-face support for them.

  Teachers that did have the technological devices received approximately three hours of coaching and training per week. Moreover, a virtual helpdesk has been set up to allow teachers and other members of Edo's education community to ask questions or request specific support.

## Implementation challenges

Different challenges emerged as the Edo-BEST@Home programme was being implemented. Among them were changing the delivery channels as well as sustaining student participation in urban areas.

- ***Delivery channels.*** Edo-BEST@Home initially planned to deliver remote learning through interactive radio lessons to reach as many students as possible across the state. This radio learning programme was going to provide four hours of daily content for all education levels. However, late in the planning phase, Edo-BEST officials decided to change this delivery channel, as it was going to be challenging to track participation levels and engagement through the radio programme. The delivery methods that were in fact implemented combine WhatsApp, interactive text messages and the Edo-BEST@Home web platform. As 91% of households possess a mobile phone, this method was considered to be the most effective to reach a large percentage of the student population.
- ***Sustaining student participation.*** Especially in urban areas, it has been a surprise that student participation rates in the remote learning programme were not as high as expected. This is mainly because working-class parents have to use their mobile phones for their job. Moreover, if parents have more than one child, it becomes more complicated to share one device among many children. Edo-BEST officials have run communication campaigns in different markets to sensitise parents regarding the importance of continuing their children's education while schools are closed.

## Monitoring success

Edo-BEST already had a monitoring and evaluation system in place prior to the COVID-19 pandemic. The programme has been monitored carefully since its launch in 2018. The programme leverages modern digital technologies to conduct real-time monitoring of learning inputs, attendance and learning outcomes. Edo-BEST has a Quality Assurance team in charge of monitoring the effectiveness of the programme gathering data to take evidence-based decisions and providing feedback for continuous improvement of the teaching-learning processes. For example, prior to COVID-19, learning and development officers visited schools every two weeks to coach teachers and quality assurance officers visited schools once every three weeks to ensure operations were running smoothly.

During the COVID-19 pandemic, Edo-BEST leveraged its already existing Quality Assurance team to monitor and evaluate the remote learning experience. The monitoring and evaluation process was initially piloted by randomly selecting virtual classrooms and observing the remote teaching and learning processes. Currently, the Edo-BEST@Home programme is reaching approximately 900 out of Edo's 1 000 primary schools, and over 7 000 virtual classrooms out of 9 000 actual classrooms have been created to deliver remote education. Moreover, Edo-BEST@Home mobile interactive quizzes not only help students to practice a wide range of skills, but also provide real-time data on learning achievement to the Quality Assurance team.

Still, the monitoring and evaluation process remains a challenge for the Edo-BEST@Home remote education programme. The Quality Assurance team needs to better understand the actual reach of the channels being used to deliver remote learning and identify those students who lack access to these resources to offer them alternative learning solutions. For those who are actually using the Edo-BEST@Home platform and mobile solutions, it is critical to understand the frequency of use, track engagement levels and verify if students are actually learning.

## Adaptability to new contexts

Edo-BEST@Home's remote learning strategy has successfully managed to leverage its existing education model, which relies on digital technologies to improve teaching and learning, and adapt it to a remote learning solution while schools in the state are closed. This remote education programme has been rapidly scaled at a state level and is also being used by other schools in other states in Nigeria; thus, it is easily scalable at a state or national level in countries with high mobile phone penetration. The state of Edo was able to quickly pivot to a remote education solution because the government has been working to transform the education sector since 2018. Lesson plans and learning activities were already digitised, and teachers were equipped with the digital and pedagogical resources needed to teach remotely. The Edo-BEST@Home remote learning programme has been designed to be sustainable over time, as a complementary resource to the Edo-BEST on-site classroom-based education.

### Box 31.1. Key points to keep in mind for a successful adaptation

1. Assess the penetration of devices needed for remote learning: identify the student population that can be reached through mobile phones and clearly identify households that lack access to mobile phones so that alternative learning solutions can be provided for them.
2. Consider public-private partnerships: Edo-BEST@Home benefits from a public-private partnership between the state of Edo, Bridge International Academies and the World Bank. The private sector provides expertise in school management, teacher training and educational technology. The state provides resources to operate the programme in more than 1 500 public schools. The World Bank supports with technical assistance and results-based financial resources.
3. Support teachers and ensure that they are equipped with the digital and pedagogical resources required to teach remotely. Remember that remote teaching is new for most teachers; thus, complement training provided prior to the COVID-19 pandemic with virtual coaching support to help teachers adapt to the new scenario.
4. Sustain student engagement by producing interactive content, engaging learning activities and automated formative assessments. The state of Edo has been able to offer interactive audio lessons, digital self-study packets and interactive quizzes that are all delivered through WhatsApp or text messages.

## Acknowledgements

Profound gratitude to the following people for their support with this case study. Martin De Simone, Education Specialist, World Bank; Aisha Garba Mohammed, Education Specialist, World Bank; Imonkhuede Okhiran, Quality Assurance Officer, Edo State Universal Basic Education Board; Omonjiade Ogudo, Manager of Government Relations, Edo State Universal Basic Education Board; Joan Osa Oviawe, Executive Chairperson, Edo State Universal Basic Education Board; and Andrew Ragatz, Senior Education Specialist, World Bank.

# 32 Pakistan: TeleSchool and Taleem Ghar (Educational TV at Home)

Sharon Zacharia, Education Technology Analyst (Consultant), World Bank

Type of intervention: governmental (federal Ministry of Education TeleSchool initiative, Punjab provincial government's Taleem Ghar initiative)
Website: TeleSchool | Taleem Ghar

## General description

Pakistan put in place two educational television (TV) programming initiatives as remote learning tools during the COVID-19 school closures. Pakistan's Ministry of Federal Education and Professional Training (MoFEPT) launched an educational TV initiative called TeleSchool and, at a regional level, the Punjab province's School Education Department (SED) launched its own local initiative called Taleem Ghar that is geared towards supporting students in Punjab.

In April 2020, TeleSchool and Taleem Ghar began broadcasting their educational programmes on TV across Pakistan and the province of Punjab to support remote learning. Both of the TV programmes' lessons are also available on demand, either on their respective websites or hosted on the YouTube channels or mobile applications of the broadcasting TV channels.

Both initiatives stand out because the federal and provincial (state) governments deployed educational TV programming as a remote learning tool within a few weeks of school closures on the onset of the COVID-19 pandemic. Both initiatives leveraged existing educational stakeholders as well as resources that were repurposed to ensure that student learning continued during the school closures. The MoFEPT worked closely with private education partners who offered their existing educational content for free for the

emergency TV programming. While some pre-existing resources could be mobilised, the province of Punjab did not have an existing fully functioning educational television programming prior to the health crisis. Punjab's SED leveraged educational content previously created by the provincial government for teacher training and adapted this for educational TV programming for students.

TeleSchool has broadcast programming for Grades 1-12, while Taleem Ghar has programming for Grades 1-10. TeleSchool started with maths, English, Urdu and science lessons while Taleem Ghar began with science-based subjects, maths and general knowledge and is working on adding Urdu and English in the near future. Both initiatives are working on expanding programming beyond these subjects as well as extending it beyond the COVID-19 period.

Television reach stands at roughly 95% of the population across Pakistan and roughly 90% across the province of Punjab, which is much higher than the reach of any other mass media in the country, making TV the viable option for remote learning. Both TeleSchool and Taleem Ghar programming aligns to the national and provincial curriculum, easing equitable continued remote learning for millions of children in Pakistan during the school lockdown.

## Main problems addressed

In March 2020, school closures due to the pandemic left almost 50 million children in Pakistan and 12 million children in the province of Punjab out of school. The MoFEPT's and the provincial SED's main challenge was to support learning for these children. Few of them have access to the Internet or digital devices to access online learning. Internet access in Pakistan stands at 36%; smartphone ownership is around 32%, while computer/laptop ownership is around 27%. Given the reach of TV across Pakistan and Punjab, television education was chosen as one of the appropriate ways to ensure educational continuity for most students.

## Mobilising and developing resources

The MoFEPT and the provincial SED leveraged multiple stakeholders in the ecosystem to ensure a swift response to support widely accessible remote learning for students across the country. The MoFEPT worked closely with private education partners who offered existing educational content for free to be used as part of the emergency TV programming. Punjab's SED leveraged educational content previously created by the provincial government for teacher training and adapted it for educational TV lessons for students. The MoFEPT leveraged TV production equipment and expertise from its tertiary education institution, the Allama Iqbal Open Learning University, while Punjab's SED leveraged the same from its IT board, the Punjab Information Technology Board (PITB).

For example, since Punjab's SED leveraged its own existing video content initially intended for teachers, it created eight new animated characters (Miss Pi, Miss Curie, Mr. Isaac Newton, Miss DNA, Mr. Khwarizmi, Miss Mercury) in order to adapt the content to students. Videographers, content developers and animators from existing government projects were redirected to develop TV lessons for broadcasting. The Taleem Ghar team repurposed an existing mobile app for Punjab school information systems by adding its educational TV programming to the app as a short-term measure while also developing a separate app.

## Fostering effective use and learning

TeleSchool and Taleem Ghar programming has been deployed to help ensure continued development of knowledge and skills as outlined by the national and provincial curricula during the school closures. The

content has been curated and adapted for students of each grade level to make it easily accessible, useable and engaging. For example, to make content more engaging for students, the Taleem Ghar team created eight new animated teacher characters. These animated characters pause during the lessons to ask questions, prompting the students to respond at home, and recreate some level of the teaching interactivity.

Both initiatives leveraged government schoolteachers to develop lessons for TV broadcasting. Both also worked with television operators across the country/province to ensure that TeleSchool and Taleem Ghar channels were broadcast across as many possible TV networks in the country and province, respectively. Government schoolteachers, subject experts and timetabling specialists worked on developing a sequencing of lessons aligned to the national or provincial curriculum and student learning objectives. Existing content was curated and aligned to this sequencing. New lesson plans and TV scripts were developed and formed the basis of the TV broadcast lessons.

Both initiatives aimed to set up websites dedicated to their education TV efforts to ensure that all related resources can be easily accessed by students, parents/caregivers and educators in one place. The Taleem Ghar website hosts its TV broadcast schedules, rebroadcast schedules, links to lessons and feedback forms while the TeleSchool website will be launched in the near future. Currently, the MoFEPT website hosts the TV schedules.

TV broadcast scheduling (e.g. Taleem Ghar schedules, TeleSchool schedules) and communication campaigns were developed by both initiatives to spread awareness regarding programming to students, parents/caregivers and teachers. This involved advertising via print media and television, and leveraging ministers, including the Prime Minister of Pakistan and the Chief Minister of Punjab, to increase awareness on social media. The Taleem Ghar and TeleSchool team made short 30-second teaser videos, and circulated them via WhatsApp and other social media to build excitement and awareness (e.g. TeleSchool). Punjab also made announcements in local mosques to ensure the communication reaches those without access to other media.

Making content available on demand increases and eases access for students, caregivers and educators to these resources. Taleem Ghar hosts its TV lessons as on-demand content on its YouTube channels as well as its mobile app while TeleSchool currently hosts it on the TV provider mobile apps and links it to its upcoming website. The Taleem Ghar mobile app also allows access to related online learning material and practice test questions. Teachers, schools and the administration can use the app to send notifications to parents as well.

Tailored support and communication were also provided to ensure that beneficiaries were able to smoothly access education TV at home and continue student learning. For example, the TeleSchool team set up a telephone helpline to field questions and queries well before the launch. Before and at the start of the TeleSchool launch, many users called the helpline to iron out logistical and technical issues in order to smoothly access TeleSchool programming. They also set up a two-way SMS service where beneficiaries could enrol in SMS-based notifications about TeleSchool scheduling and other related notifications and support.

## Implementation challenges

The key challenges faced by the TeleSchool and Taleem Ghar teams are outlined below.

- ***Co-ordinating across multiple stakeholders, including within the government.*** Co-ordination across multiple government agencies supporting different aspects of the educational TV programming was challenging. This included the IT board supporting the technological related components of programming (e.g. National Information Technology Board of Pakistan/PITB), the institutions supporting TV production (e.g. Allama Iqbal Open Learning University/PITB), teams

supporting the online platforms (e.g. Digital Pakistan initiative/PITB), the media regulation authority working with TV networks (e.g. Pakistan Television), telecommunication authorities supporting mobile-based communication and zero-rating (e.g. Pakistan Telecommunication Authority), ministers raising awareness through communication, the Planning Commission and the National Disaster Committee. The government also needed to co-ordinate with private educational content providers like TV operators, telecom companies and communication agencies, among others.

- ***Student engagement and learning.*** Television is mostly a one-way mode of communication. Hence, using TV programmes to replicate teaching, which inherently involves two-way interaction, has been challenging.
- ***Formative assessment of learning.*** Assessing the programmes' impact in terms of student learning is tricky given this mode of education delivery. The TeleSchool team aims to use text messaging to assess student learning and engagement in the short term. The Taleem Ghar team aims to conduct student assessments once schools reopen.
- ***Technical expertise.*** Educational TV had not been used at this scale in Punjab or across Pakistan to provide learning until COVID-19. Given that the teams were operating under time constraints in order to deploy educational TV quickly as soon as schools were required to close, both the TeleSchool and Taleem Ghar teams leveraged existing TV production and broadcasting expertise within the public domain. The MoFEPT leveraged the expertise of its higher education institution, Allama Iqbal Open Learning University, while Punjab's SED leveraged its PITB.
- ***Reach of programming.*** To deploy TV programming quickly to benefit students, TeleSchool and Taleem Ghar followed a phased approach in launching their TV programming. Initially, it was launched for two weeks for specific subjects and grades (e.g. Punjab launched it for Grades 1-8 initially). After the initial launch, both released more content in subsequent two-week phases while continuing to internally develop further programming to be launched subsequently.

## Monitoring success

Measures have been put in place to monitor the success of the TeleSchool and the Taleem Ghar initiatives thus far over the past few months of its deployment.

The MoFEPT requested Gallup Pakistan to conduct a "Gallup Pakistan Rapid Assessment" to measure the short-term impact of TeleSchool in Pakistan. In May 2020, adults in 1 200 households from over 100 urban and rural districts of Pakistan were surveyed via telephone. They had children in the household aged 5-15. The survey was conducted to understand four metrics: awareness, viewership, perceived quality and loyalty towards TeleSchool programming.

It was found that nearly 32 million adults, that is, 2 in every 5 Pakistanis, were aware of TeleSchool. TV was the most popular source through which 67% of Pakistanis learnt about TeleSchool. Nearly one in three Pakistanis said they have accessed TeleSchool lessons, with the highest proportion of respondents from the province of Punjab with an estimated 7-8 million Pakistani children having accessed it in its first two months of broadcasting and an estimated weekly viewership of 6 million children. Of those surveyed, 77% are either very satisfied or somewhat satisfied with the educational content of TeleSchool, with rural respondents more satisfied than urban respondents. Two-thirds of those surveyed said they would recommend TeleSchool to other parents during the school closure period.

The Taleem Ghar team has been tracking website usage, mobile application downloads and the number of cable TV networks that broadcast the programming in Punjab and has set up an online dashboard to monitor these. In the first month, the Taleem Ghar mobile app was downloaded 72 000 times and the TV content was being broadcast across more than 95% of cable TV operators across Punjab (roughly 850 out

of 890 cable TV operators). The Taleem Ghar website has been accessed more than 180 000 times since its launch.

Formative assessment of students learning from educational TV programming is no easy feat. The TeleSchool team has set up a two-way SMS-based service to communicate with students regarding programming. It aims to send multiple-choice questions to students to assess learning and engagement. The Taleem Ghar team aims to conduct student assessments once schools reopen to assess the programming's impact. Such data will also be used as feedback to further improve programming.

## Adaptability to new contexts

Both TeleSchool and Taleem Ghar managed to ideate as well as to deploy educational television programming across the country/province within a matter of a few weeks of school closures. Both the MoFEPT and the SED leveraged stakeholders within the ecosystem as well as existing resources to ensure a swift response to remote learning. This led to minimal needs of additional financial resources in the short term. Hence, this model is easily scalable and replicable by national as well as state level education ministries/departments looking to rapidly deploy a remote learning strategy.

This is particularly adaptable for countries with limited resources to reallocate towards a TV educational initiative. This is ideal for countries where household TV reach is much greater than access to the Internet and digital devices. This can also be used by higher income countries to support other forms of learning, such as online learning.

Both the TeleSchool and the Taleem Ghar teams aim to extend this programming beyond the short term to provide a form of distance learning, to support out-of-school children as well as a standard operating procedure for education during emergencies. Educational TV lessons are already being used across the world to "support an inadequate supply of secondary education due to a shortage of qualified teachers willing to work in rural/marginalised areas, especially in developing countries" (Banerjee et al., 2013[1]; Calderoni, 1998[2]) as well as in areas with teacher absenteeism (Navarro-Sola, 2019[3]; Zacharia, 2020[4]). Countries can support, train and incentivise teachers to use these educational TV programmes to support classroom teaching as well.

### Box 32.1. Key points to keep in mind for a successful adaptation

1. This model of educational TV programming can be easily scaled and replicated across a country or a state.
2. This model is useful for remote or distance learning during emergencies when household TV reach is higher than Internet access and the digital device ownership or TV broadcasting reaches traditionally hard-to-reach children.
3. Leveraging stakeholders within the ecosystem as well as existing resources is important to ensure that this programming can be deployed quickly. This should involve working with teachers, media regulation authority/TV operators, telecom companies, etc. It is particularly critical to leverage existing video content for developing TV lessons instead of developing this from scratch.
4. A phased roll-out approach is important to ensure that programming is deployed quickly in case countries are still in the process of developing educational TV content. This means releasing some content for some grades in the beginning while continuing to develop more content to be released subsequently. More grades and subjects can be progressively added to increase student outreach.
5. Continuous communication regarding educational TV programming is critical to its success. This must begin before launching the programming and continue throughout to ensure students, parents/caregivers and educators are up to date regarding scheduling and other related resources.
6. It is important to have all related resources and updates in one place (e.g. a website) to ensure that students, parents/caregivers and educators have easy access to all required resources. This allows for a higher engagement rate.
7. Focus on student engagement and learning to overcome the challenge of TV as a one-way mode of communication. For example, this can be done through teachers posing questions during lessons and students responding, leveraging text messaging for formative assessments.
8. Work with telecom companies to zero rate related educational online platforms to ensure that access to data does not limit learning.

Source: (Zacharia, 2020[4])

## Acknowledgements

Deep gratitude to the following people for their support with this case study:

***TeleSchool team:*** Umbreen Arif and Umair Syed Javed from Pakistan's Ministry of Federal Education and Professional Training (MoFEPT).

***Taleem Ghar team:*** Abdal Mufti from Punjab's School Education Department; Kashif Farooq, Adnan Khan and Mahnoor Shakeel Rajput from Punjab Information Technology Board.

## References

Banerjee et al., A. (2013), *Expanding access and increasing student learning in post-primary education in developing countries: A review of the evidence*, Abdul Latif Jameel Poverty Action Lab Post-Primary Education Initiative Review Paper. [1]

Calderoni, J. (1998), "Telesecundaria: Using TV to bring education to rural Mexico", *Education and Technology Technical Notes Series*, Vol. 3/2, https://documents.worldbank.org/en/publication/documents-reports/documentdetail/559251468774647437/telesecundaria-using-tv-to-bring-education-to-rural-mexico. [2]

Navarro-Sola, L. (2019), *Secondary school expansion through televised lessons: The labor market returns of the Mexican Telesecundaria*, https://laianaso.github.io/laianavarrosola.com/Navarro-Sola_JMP.pdf. [3]

Zacharia, S. (2020), "Education TV Knowledge Pack", *Education Television: Knowledge Pack (worldbank.org)*, World Bank, Washington, DC, https://pubdocs.worldbank.org/en/267791593613610668/Education-TV-Knowledge-Pack-WorldBank-Edtech-Team.pdf. [4]

# 33 Peru: I Learn at Home

Alberto Munoz-Najar L, Consultant, World Bank

Type of intervention: governmental
Website: https://aprendoencasa.pe

## General description

Peru's school year runs from mid-March to mid-December. Classes were ready to start on 16 March 2020, but instead, the president announced a strict lockdown. The country only had 86 cases of COVID-19 then, but the government worked quickly to close all 54 000 schools to try to prevent further spread of the virus. Peru's Ministry of Education, with support from non-governmental organisations, technology companies, telecommunication operators and broadcasters launched a multichannel remote learning initiative to mitigate learning loss as a result of school closures: Aprendo en Casa (I Learn at Home).

The initiative is noteworthy because the Ministry of Education planned, developed and launched a comprehensive multimodal strategy to deliver remote learning at scale in just 12 days. The whole programme aligns to Peru's national curriculum and has been designed to provide remote education through four channels: television, radio, web and printed material. Equally important, the Ministry of Education's Monitoring and Evaluation Unit, with the support of Innovations for Poverty Action, began monitoring levels of adoption and satisfaction of the Aprendo en Casa strategy with principals, teachers and families through regular phone calls.

Results of the monitoring process are readily available for anyone to access through an interactive site (see the resources section), ensuring transparency. As of July 2020, data are available for April, May and June 2020.

Access to devices and connectivity needed for remote learning varies across the country. Approximately 85% of households own a TV, 84% a radio, 82% a mobile phone and only 24% have connection to the Internet at home (data from UNICEF and the World Bank). Therefore, Aprendo en Casa's multimodal

strategy was a viable approach to deliver remote learning solutions that could be scaled up rapidly to reach most if not all students while schools were closed.

## Main problems addressed

As Peru's school year starts in mid-March, the COVID-19 pandemic prevented approximately 8 million students (from pre-primary to secondary public and private schools) from starting the 2020 school year. The challenges were twofold: on the one hand, the Ministry of Education had to deliver quality educational resources to all students in a country where household access to resources required for remote learning is highly unequal. For example, while almost 99% of urban homes have access to electricity, only 69% of rural ones do (UNICEF data). On the other hand, although the Ministry of Education curated existing learning material, most of the content and platforms had to be developed from scratch. Ministry of Education officials needed to come up with innovative solutions for this challenge in a short time frame and in the middle of a strict nationwide lockdown.

## Mobilising and developing resources

The Ministry of Education leveraged existing resources and engaged various stakeholders to build a multimodal remote learning solution that could be rapidly scaled at a national level. The ministry officials mobilised and developed resources in three key components of the remote learning strategy: 1) infrastructure and connectivity; 2) content; and 3) delivery platforms.

***Infrastructure and connectivity.*** With support from the Ministry of Transport and Communications, the four major private telecommunication operators in the country agreed to a zero rate for Aprendo en Casa's digital site so that students and teachers could access all of the available educational resources through the website without paying for bandwidth. Moreover, the Ministry of Education leveraged an existing partnership with Microsoft and developed a new one with Amazon Web Services to host the ministry's digital platforms.

***Content.*** A large pedagogical team at the Ministry of Education curated already existing content, which consisted of mainly educational videos and digital workbooks. This team also curated external content that third-party organisations such as Plaza Sesamo (Mexico) and Paka Paka (Argentina) agreed to share for free with Aprendo en Casa. However, most content was created from scratch by a large team of pedagogical experts from the Ministry of Education's Department of Basic Education. Since mid-March, this team has developed lesson plans and scripts and co-ordinated the production for Aprendo en Casa's multimodal strategy.

***Delivery platforms.*** To deliver the content, the Ministry of Education leveraged existing partnerships with TV Peru and Radio Nacional, the government's television and radio platforms. The main private open signal TV channels have also joined this effort to transmit learning sessions for the last years of secondary education. With the support of regional directions of education and local education units, new partnerships have been developed with over 1 100 local radios to reach remote communities. Although the ministry already had PeruEduca, an online training and content repository platform, the Ministry of Education's Department of Educational Technology decided to develop a mobile-responsive digital platform from scratch to deliver Aprendo en Casa content at scale. This new platform can support an unlimited number of simultaneous users and is "web-light" so that users can access its resources even in areas with low bandwidth ("web-light" is a lighter and faster web page technology for people searching on slow mobile connections). Ministry of Education officials also analysed and later partnered with more than 60 mobile applications to allow teachers and students access to free resources related to communication, class management, digital libraries, content management and online learning, among others.

## Fostering effective use and learning

To foster effective use of educational resources and ensure learning, the Ministry of Education focused on three key aspects: 1) align strategies with the national curriculum and education level; 2) select engaging learning facilitators and contextualise content; and 3) support and foster communication between teachers, parents and students.

***Alignment with the national curriculum.*** The remote education strategies implemented are aligned with Peru's national curriculum as well as with the curricular programmes of each education level: pre-school, primary and secondary education. Equally important, Aprendo en Casa's team has developed content for students with special needs and adult alternative education. As Peru has a competency-based curriculum, content can be flexible, as long as students acquire the competencies required for their education level. This flexibility was key because it allowed the ministry to both develop its own content and curate content that had already been developed by other producers.

***Contextualised content.*** Curating and producing contextualised content and activities has been crucial to ensure effective learning. The pedagogical team of the Ministry of Education's Department of Basic Education not only developed lesson plans and scripts for learning sessions according to each education level, but also co-ordinated with the Department of Intercultural Education to translate all content delivered through radio into nine native languages. Additionally, since May, all TV learning sessions are supported with sign language and the website has been adapted for children with disabilities.

***Engaging learning facilitators.*** Equally important was to recruit engaging learning facilitators to introduce TV or radio learning sessions. For example, TV learning sessions for pre-school are introduced by Fatima Saldonid, a journalist, and the ones for primary and secondary are presented by Patricia Barreto, an actress. After receiving feedback from the teacher community, learning facilitators are now joined by experienced teachers who explain the main concepts, and a student, who usually performs a learning activity. For example, in the Maths learning session for 26 May, Patricia Barreto, the learning facilitator, welcomes 5th and 6th grade students and presents the session objectives; Christian, the teacher, introduces the content for a probability class and guides the students through learning activities. A student, Mia, jumps in and participates. Patricia, Christian and Mia interact throughout the session, with the aim of making the class even more engaging.

***The importance of interaction and feedback.*** Even when implementing a remote education programme, it is critical to maintain constant communication and teacher-student interaction. Thus, to complement the content delivered through Aprendo en Casa's channels, the Ministry of Education developed learning activities that students can use to practice what they learn through TV, radio or the Internet. According to the ministry's Monitoring and Evaluation Unit, 80% of students and parents had received support from teachers at least once in the prior week. According to information gathered in May 2020, 96% of teachers who contacted parents have requested their students complete and send their homework every other day. Students complete those activities and send them back to teachers mainly through WhatsApp. According to the survey, of those teachers who had contacted parents and requested students to complete the learning activities, 90% had graded students' homework or provided detailed feedback, thus far.

## Implementation challenges

When the Ministry of Education started implementing the remote learning solutions in mid-March, it had to face several implementation challenges. Among them were reaching students who live in rural areas in the middle of the pandemic, building a new platform, sustaining student engagement and providing guidance to teachers while avoiding burnout.

- ***Reaching rural areas.*** For the Ministry of Education, it was key to ensure that remote learning resources reach all students. It was particularly challenging to reach students in rural areas – 30% of rural households lack access to electricity, almost 20% do not have a radio at home and 40% do not have a mobile phone. In fact, the Ministry of Education's Department of Decentralised Education estimated that over 15% of students were not able to access any of Aprendo en Casa's main remote learning channels – TV, radio and/or web. So how could they communicate with them? A first solution was to distribute printed materials. But Peru's government imposed strict lockdown rules to prevent the spread of COVID-19. Thus, local education units, in co-ordination with local communities, have developed different initiatives, such as retransmitting radio content through powerful loudspeakers in community centres that children can attend while social distancing.
- ***Technical strength.*** Another difficulty was that the Ministry of Education's digital resources were not prepared to deliver remote education at scale. For example, PeruEduca's platform could only support a few thousand users simultaneously; the web was neither mobile-responsive nor user-friendly. This challenge was addressed by building a web-light, mobile-responsive platform from scratch with the support of tech partners. According to Google Analytics, Aprendo en Casa's platform has had a monthly average of 4.5 million unique users, thus far.
- ***Sustaining student engagement.*** Aprendo en Casa's multimodal strategy launched successfully on 6 April 2020 and was praised in the press and social media. The delivery through different platforms allowed the ministry to reach millions of students in the first week. But how could the Ministry of Education sustain this student engagement with content that was mainly delivered through modalities that did not allow for real-time interaction? One of Aprendo en Casa's pillars to maintain engagement was to use actors and actresses as learning facilitators, but this approach began to be criticised by the teacher community. The ministry's Department of Basic Education rapidly adapted the format to learning sessions that now have an expert teacher interacting with both the learning facilitator and a student.
- ***Teacher support.*** When the Ministry of Education started implementing Aprendo en Casa, teachers received guidelines that stressed the importance of observing learning sessions through the channel of their preference, communicating with students and parents, subscribing to online learning courses through PeruEduca, among other activities (see the references section). In addition, regional directions of education elaborated complementary guidelines to accompany what the ministry had developed and local education units in turn designed complementary guidelines to accompany what the regional directions of education had produced. For example, the local education unit in Lambayeque, a region located in the north of Peru, requested teachers to submit daily reports of their remote work with students. Moreover, on 21 May 2020, the Ministry of Education published additional requirements: teachers needed to submit a monthly report with evidence of their remote work and had until the end of May to submit reports from March and April. This whole support system ended up generating teacher burnout and discontent. Peru's National Teacher Union (SUTEP) submitted a formal complaint on 27 May 2020. After listening to teachers' feedback, the ministry reacted quickly and adjusted the guidelines and requirements on 29 May 2020, to reduce the administrative workload.

## Monitoring success

The Ministry of Education's Monitoring and Evaluation Unit has regularly monitored the adoption of Aprendo en Casa; the support given by teachers; and the satisfaction of principals, teachers and parents with the strategy through phone calls once a month (information from principals was only gathered during the first month). This effort started just one week after the strategy was launched. More than 37 000 members of the education system were surveyed between mid-April and early June 2020. Phone calls

gathered data related to Aprendo en Casa's reach, channels used by students to access remote learning and support from teachers to students, among other information. Results of the monitoring process are readily available for anyone to access through an interactive site. Information gathered is based on representative samples; results from April and May 2020 are described below.

- ***Principals.*** In April 2020, 97% of principals surveyed said they were informed about the Ministry of Education's guidance note for the COVID-19 response. Of those contacted, 98% had access to Aprendo en Casa's resources from home, but only 59% had a computer with Internet and 51% a smartphone. Almost three-quarters (73%) received support from the regional directions of education and 78% were satisfied with it. A large majority of principals (84%) had communicated with all teachers from the school at least once.
- ***Teachers.*** In April, 95% of teachers contacted knew about the remote learning guidance note developed by the Ministry of Education. Virtually all of them (99%) said they could access Aprendo en Casa resources from home, but only 53% had a computer with an Internet connection and 74% a smartphone. In May, 92% of teachers said they had communicated with the school principal and with other teachers in the past week. While in April 94% of teachers had communicated with parents and/or students in the past week, in May 98% indicated they had had communication with parents and 94% with students in the previous week.
- ***Parents and students.*** In April, 91% of parents contacted knew about Aprendo en Casa, and of those, 95% said their children were using the resources provided. In May, 95% of those contacted knew about Aprendo en Casa. On average, in April, 74% of students had accessed remote learning through TV four days a week and 59% were satisfied with the strategy. In May, parents' satisfaction with the TV strategy increased to 65% and that of children to 82%. In April, 17% of those contacted accessed learning through the radio three days a week on average and 44% were satisfied with this strategy. Parents' satisfaction with the radio strategy also increased in May to 56%; 64% of children reported they liked it. Finally, in April, 19% of students used the Aprendo en Casa's website four days a week and 68% were satisfied with it. Once again, parents' satisfaction with the website increased in May to 81%; 87% of students reported they liked it.

## Adaptability to new contexts

Aprendo en Casa's multimodal remote learning strategy has successfully managed to reach over 85% of the student population in Peru and aims to serve the remaining students through alternative methods (such as radio transmission through loudspeakers in community centres).

The programme was planned, designed and implemented nationally in 12 days; thus, it is easily scalable at a national level, even in countries with complex geographies and profound gaps in terms of households' accessibility to devices needed for remote learning.

Aprendo en Casa's multimodal remote learning programme has been designed to be sustainable over time as a complementary resource for on-site classroom-based education. To ensure a successful adaptation, ministry officials need to assess the student population they can reach through various channels and clearly identify those who are not able to access resources to provide alternative solutions for them.

### Box 33.1. Key points to keep in mind for a successful adaptation

1. Strong leadership is needed to guarantee a rapid design and implementation of a multimodal remote learning strategy aimed at reaching all students in the country, including those who have limited access to resources, those who speak different native languages and those with disabilities.
2. When designing the remote learning plan, select public and private partners that support the goal of ensuring learning sessions are delivered through different formats at scale and free of charge for all students.
3. When implementing, actively collect and respond to feedback from the education community and be flexible to adapt when needed.
4. Provide guidance and support to teachers and ensure that they are not overburdened with administrative work that inhibits their ability to be pedagogically effective. Remember that remote teaching is new for most teachers and overburdening them can impact their ability to support children, pedagogically as well as socio-emotionally.
5. Sustain student engagement by producing interactive content and complement it with teacher-student interaction.
6. Install a monitoring and evaluation system to track the remote learning programme's reach and effectiveness, as well as to provide relevant data for continuous improvement and further decision making.

## Acknowledgements

Profound gratitude to the following people for their support with this case study.

From the Aprendo en Casa Team and/or Monitoring & Evaluation Unit*:* Cecilia Ramirez, Director of Basic Education; Jose Carlos Vera, Director of Decentralised Education; Ricardo Zapata, Director of Education Technology; and Alfonso Accinelli, Former Director of Education Technology.

# 34 Peru: Teach for Peru

Franco Mosso, CEO and Co-founder, Enseña Peru

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: non-governmental
Website: www.ensenaperu.org

## General description

Enseña Perú is a non-profit organisation founded in 2009 with the mission to organise a movement of collective leadership that catalyses educational transformations across Peru that aim to close gaps in educational opportunity. To pursue its mission, Enseña Perú runs experiential leadership programmes for teachers, school principals, regional and local leaders in education, student leaders, and professionals from various backgrounds. Every participant of the programmes applies their learning to impact the lives of students in their communities, either through teaching or through projects that impact student learning. Enseña Perú is part of Teach For All, a global network of 53 independent partner organisations that collaborate in accelerating the network progress as partners, teachers and alumni exchange innovations across borders. A core programme of all partner organisations includes recruiting diverse and highly qualified college graduates and placing them as teachers in high poverty schools for two years, with the expectation that this will both support the education of the children they serve during those two years, as well as develop leadership capacities among participants that will translate into a long-term commitment to addressing equity gaps in education.

Enseña Perú seeks to catalyse the transformation of education in Peru so that students and participants can achieve results way beyond what would normally be expected, thanks to the collective leadership of a growing network of diverse education leaders encompassing multiple roles and levels. Currently, close to 300 participants are in the leadership programmes. Of these, 130 are professionals from various backgrounds committed to a two-year programme where they teach children and learn about leadership;

120 of them are existing teachers and principals from the public sector who enrol in a one-year programme called “Qué Maestro” (What a Teacher) to strengthen their leadership and pedagogical skills. Moreover, ten local district leaders supervise and provide teachers with professional development opportunities in “Qué Maestro”. Finally, approximately 40 student leaders from 10th to 12th grade go through a three-month student leadership programme. In total, the organisation directly impacts over 10 000 students across 10 regions in the coast, highlands and jungle of Peru. Enseña Perú also hosts a biannual conference called Ayni, which convenes 1 300 leaders from across the country to rethink education and learn together as a way to support collective leadership on behalf of transforming education.

With the advent of the COVID-19 crisis, schools in Peru closed on 12 March and the Ministry of Education led a nationwide strategy called “Aprendo en Casa” (see previous note) in collaboration with several private and non-profit organisations. Enseña Perú was one of those partner organisations. It developed and implemented a four-prong strategy to contribute to educational continuity for marginalised students. These included migrating all the leadership programmes to a virtual learning ecosystem where participants from every programme could continue to grow and support each other in a community of practice, enabling teacher creativity through virtual hackathons of educational projects and agile research-based protocols that teachers can use to help their students develop 21st century competencies using phone calls, text messages and WhatsApp interactions. In addition, Enseña Perú sought to augment its impact beyond the 10 000 students it served directly, partnering with the Ministry of Education to implement four system-wide impact initiatives:

1. The joint creation and production of TV and radio sessions for close to 2.5 million students from Grades 5-12 nationwide.
2. The creation of a virtual programme for 30% of all district leaders across the country on how to develop 21st century competencies from the local policy standpoint. It was offered from 23 April to 10 June.
3. Mobilising 1 000 volunteers to gather data from 15 000 families on emotional well-being, connectivity and quality of learning, and preparing a study to amplify the Peruvian students’ voices about how they are living this crisis so that this information could inform policy decisions.
4. Convening a national “Informed Dialogue” in partnership with Harvard’s Global Education Innovation Initiative to discuss the implications of the GEII-OECD “framework to support a strategy for educational continuity during the COVID-19 pandemic”.

Throughout this strategy, Enseña Perú seeks to design effective education programmes that support educational continuity, grounded on a solid combination of top-down and bottom-up approaches which continue to enable creativity and collective leadership across the country, which remains essential for sustaining quality learning during the pandemic.

The following timeline details some of the most important dates during this case study:

- During the week of 9 March, the ministry announced that students would not be going to school.
- On 11 March, the ministry announced that classes would be suspended in all schools starting on 12 March. Enseña Perú starts planning its internal strategy, stopping national in-person retreats and initiating transportation of staff and participants to safety.
- On 12 March, Enseña Perú initiates co-ordination with the ministry on possible joint efforts.
- On 15 March, authorities announce the national quarantine and that teachers and school principals would also stop going to school.
- On 6 April, classes began for students across the country through the national distance education campaign “Aprendo en Casa” on TV, the radio and the Internet, an initiative of the Ministry of Education.

- On 21 April, the "Informed Dialogue" took place with nearly 300 education leaders in Peru. At the same time, during the following weeks, the task force of volunteers started gathering data from families.
- On 23 April, the virtual programme for district leaders was launched. Attendance of the first sessions was close to 700 district leaders.
- On 4 May, the ministry aired the second season of *"*Aprendo en Casa*"*. The task force of Enseña Peru alumni and the Ministry of Education jointly created the TV and radio education programmes of this second season. The programmes were offered to all Peruvian students from 5th to 12th grade.

The process of strategy development was collaborative. The different initiatives were discussed by representatives of both organisations and once key concepts were developed, Enseña Perú involved alumni from its programmes, teachers on the ground, staff members and allies to develop the specific details of implementation.

For Enseña Peru, this strategy was possible partly through redirecting the resources of its own team to these initiatives, mainly those in charge of relationships with the government both nationally and locally. The course of district leaders was ran by staff using courses developed internally for the participants of the leadership programmes.

## Main problems addressed

This strategy aimed to address several problems:

- ***Reaching students in rural and urban areas without an Internet connection.*** Out of the more than 7.5 million students in Peru, more than 1.3 million live in rural areas, where less than 5% have access to the Internet. There are also many students without access to the Internet in urban areas. The potential risk of the crisis was that these students would be left behind with few learning opportunities. This is why the initiative includes developing high-quality educational materials to be broadcast on national TV and radio.
- ***Making families and students provide information and feedback and contribute to the country's management of the crisis.*** In this rapidly evolving crisis, students' family members became even more important as contributors to the educational process and students' learning outcomes. Moreover, students were rarely asked to contribute their input to be part of the solutions of the COVID-19 strategy. Gathering information from these local actors was a way to inform the Ministry of Education's strategy, and to include these key stakeholders' voice as part of the collective solution.
- ***Supporting teachers in their adaptive challenge.*** Over 500 000 primary and secondary teachers faced this once in a lifetime challenge to teach without being in the presence of their students. In the midst of adapting to an already ongoing curriculum reform (in 2016 Peru launched a 21st century competency-based national curriculum), they now also had to adapt this competency-based teaching and learning through distance education.
- ***Supporting local education district leaders.*** Like teachers, local leaders were also grappling with how to lead their districts to continue to improve their students' competencies during the crisis. They were at the crossroads of the curriculum reform, the ministry's COVID-19 strategy guidelines and teachers' demands. While comprised of valuable master teachers, district leaders have historically not received consistent training to help drive change in their regions.
- ***Developing institutional resources to ensure education continuity.*** As was the case around the world, the ministry needed to expand its capacity through alliances to achieve three goals: 1) sustain the production of TV and radio materials for 7.5 million students; 2) manage the change

with teachers, school principals and local leaders in education; and 3) keep receiving bottom-up feedback to steer the COVID-19 strategy.

The main feature of this strategy is its aim to activate collective leadership at all levels of the system. All actors are viewed as potential leaders who can contribute to finding educational solutions, and are key to generate processes and initiatives that effectively combine each stakeholder's value added. Also, the organisation's strategy was completely integrated with the ministry's strategy. Enseña Perú has strong connections at all levels of the system and that is why the organisation contributed with national priorities in this multi-stakeholder strategy. Furthermore, the crisis also presents opportunities to move forward in changing traditional education paradigms. Enseña Perú's approach to change management allows every initiative to become an opportunity to collectively change education in deep ways (such as how to teach, how to learn, how to collaborate, how to lead local policy).

## Mobilising and developing resources

Across all initiatives, three main factors enabled the strategy: 1) the mindset of collective leadership (cultural); 2) the networks created at all levels around the alumni of the leadership programmes (networks); and 3) previously created content modules of education and leadership and a team already trained to develop more content (knowledge and practice). In each of the initiatives, some resources were already developed and just needed to be enhanced or redirected, but new resources were also developed.

- ***The "Aprendo en Casa" strategy of TV and radio lessons for students.*** The Ministry of Education established a TV and radio production team to turn lessons into TV and radio programmes. They selected a number of theatre and TV drama actors and educators to record the sessions in TV and radio format. For the sessions that started on 4 May, Enseña Perú mobilised a taskforce of 25 education specialists, most of whom were experienced alumni from its leadership programmes: they represented nearly 30% of the overall staff that developed the TV lessons for the entire country (including the TV production team). This Enseña Perú task force creates 30 lessons per week from 5th to 12th grade, so approximately 250 sessions in a 2-month period and nearly 60% of the total lessons produced by the ministry. At this point, the alliance will reassess its course of action with the Aprendo en Casa campaign. The ministry also developed a YouTube channel and a web portal where all the lessons are uploaded for students who have access to the Internet, and where other organisations also upload educational content (such as Khan Academy, Check, ANIA, Fundación Telefónica, among others).
- ***The development of protocols and guidelines to learn and teach during COVID-19.*** Enseña Perú developed research-based policy documents and trainings designed specifically to help teachers lead competency-based education during the quarantine. For example, it developed a four-stage process for teachers to interact with students who have only a phone connection as well as new tools for teachers to constantly monitor the development of students' competencies and agency. A protocol was developed specifically for leading and evaluating 21st century competencies in contexts of large groups that included training teachers in four principles: 1) how to automatise feedback without an Internet connection; 2) how to lead peer-based feedback; 3) how to code qualitative data for large groups; and 4) how to target students who need one on one support (Box 34.1). Teachers in the field reviewed the protocols to ensure they responded to their more pressing needs.
- ***The transformation of all leadership programmes to a virtual ecosystem.*** All of the already existing sessions of the leadership programmes were transformed into virtual formats designed to be ran with Zoom in a highly dynamic and collaborative way. They combined teachers and principals from different regions. The education team at Enseña Perú developed new online sessions and modules of leadership and education, relying on the contributions of alumni from the

programme and other specialists. Enseña Perú invested in expanding its capacity to hold online collaborative learning sessions of 100-300 participants.

- ***The competency-based virtual module for local district leaders.*** Enseña Perú co-ordinated with the Ministry of Education to invite all district leaders to take its training module on how to lead 21st century competency-based education. It is comprised of ten sessions, including personalised feedback on demand, simulations, professional learning communities, focalised lectures and selected readings. Close to 1 000 of the country's 3 000 district leaders responded to the call and signed themselves up, with 22 of the 24 regions represented. To sustain this effort, Enseña Perú invited alumni from the leadership programmes to become teaching assistants of the virtual module, and started to train them virtually before the launch of the course with the local leaders.
- ***The student voice study.*** A group of student leaders, alumni and participants from the leadership programmes and staff members of Enseña Perú are co-ordinating a study that will survey students across the country to understand how they are coping with distance education and to bring their voices to the national discussion.

### Box 34.1. The four-stage process to develop 21st century competencies during COVID-19

1. Connecting with the student and aligning expectations about competency development: this is typically a telephone conversation where the teacher and the student get to know each other and discuss the competencies they will develop. For small children, the conversation may be with the guardian.
2. Agreeing on a project or challenge that mobilises the competencies: both student and teacher clarify expectations and procedures, taking into consideration the Aprendo en Casa content and contextualising to their context.
3. Gathering and analysing competency-based evidence: students, exercising agency in their learning, provide teachers with evidence of their growth, whether by video, pictures, audio or personal interviews. The teacher analyses the evidence and crafts transformational feedback.
4. Joint feedback and reprioritising: teachers deliver feedback to their student to value their progress and further challenge them. The student provides feedback to the teacher about their experience, then they both align again to continue the process (back to Step 1.)

## Fostering effective use and learning

Enseña Perú's strategy includes all levels of leadership. Enseña Perú seeks to help stakeholders feel that they are a part of the creation, implementation or the reshaping of the strategy.

- ***Seeing students, teachers and local districts as shapers of the initiative.*** Examples of this are the co-creation of protocols with teachers in the field, the creation of sessions ran by participants of the leadership programme, the participation of students in the student voice study.
- ***Providing mechanisms for bottom-up feedback to the initiatives.*** Examples of this are the survey to local district leaders to reshape the virtual module they are taking, peer action groups where district leaders are starting to gather to reshape teacher education using the competency-based principles, the communication channel between teachers and designers of the TV and radio lessons.
- ***Highlighting examples from the field.*** Managing change implies a technical aspect and an emotional aspect. Therefore, to continue to inspire adoption and reshaping of new ways of teaching and learning, Enseña Perú regularly highlights examples of best practice from the field through

WhatsApp groups and communications. It also fosters the culture for those examples to be shared spontaneously by members of the movement.

- ***Collaboration and collective creativity with purpose.*** Implementation is enhanced if participants see the initiative as an inspiring and practical way to solve their most pressing problems, whether it is the use of a protocol or a course or a collective action strategy. An example of this is part of the module of 21st century competency-based education, which involves hackathons between teachers from different disciplines creating educational projects to implement with their students during the quarantine.

## Implementation challenges

Learning from the experience, Enseña Perú faced the following challenges:

- ***As the strategy is network-based, changes in peoples' lives lead to turnover.*** When Enseña Perú organised the taskforces to design and deliver the course of district leaders and the production of instructional lessons of Aprendo en Casa, some staff from Enseña Perú and members of the taskforce (alumni from the leadership programmes) who were in charge of designing lessons, recording sessions or providing personalised feedback had to leave the initiative because of changes in their professional or personal lives (e.g. they lost their job, relatives became in need). Replacements came in fast, but without a strong pipeline of leadership at all levels, this would make the solution difficult to implement.
- ***Prioritising within the healthy flow of divergence and convergence in ideas.*** A strategy that combines top-down and bottom-up collaboration naturally spurs a number of creative ideas. While it is important for leaders to allow for creativity, choosing two to four strategic priorities or programmes infused by the collective creativity was essential to remain effective on the ground.
- ***Cost of connectivity.*** Before the launch of Aprendo en Casa, Enseña Perú's leadership programmes included approximately 10-12 sessions per week for teachers, principals and local education leaders. It became clear that this was too costly in data use for people connecting through their personal devices. Some participants of the virtual module for district leaders also had problems engaging due to connectivity problems. The government solved part of the problem by making the virtual platform of Aprendo en Casa free to users in terms of Internet data.

## Monitoring success

The strategy's success is measured through its reach, its use and users' competency growth. For this, Enseña Perú is using data from the ministry and its own data and evaluation and monitoring systems.

- ***Reach:*** It is estimated that 1.5 million out of the 2.5 million students followed the TV or radio sessions and 70% of students are being reached to develop their 21st century competencies.
- ***Quality and satisfaction:*** Students' competency growth is monitored through the use of portfolios of student work. Each teacher enrolled in the leadership programme accumulates evidence in the form of videos, WhatsApp audios and pictures of student work and monitors progress through the four-phase protocol described above. Regarding the quality and use, the training in the leadership programmes and in the virtual module offered to district leaders, Enseña Perú uses a satisfaction survey, teacher portfolios and the performance of district leaders in a simulation.

## Adaptability to new contexts

Some of the ideas of this collective leadership strategy are transferable to countries or states where a significant percentage of students are in rural schools lacking Internet connectivity. However, the ideas of being network-based, becoming learning coalitions of organisations, and combining top-down and bottom-up actions are applicable to all countries.

If programmes, communications and collaboration are designed for a context of distance education, it is highly scalable as long as teachers, principals and local education leaders have an Internet connection.

Enseña Perú will continue to implement the core of the solutions after the COVID-19 crisis is over: virtual trainings; in-person school education combined with WhatsApp materials created from many parts of the country; professional virtual learning communities of district leaders; data and research from the field to inform policy-making decisions.

### Box 34.2. Key points to keep in mind for a successful adaptation

1. Transform programmes to digital experiences, while keeping in touch with connectivity issues of and costs for participants.
2. Mobilise existing networks to catalyse system change projects and provide clear explanations on how they can serve the country.
3. Understand the priorities of the Ministry of Education and regional authorities and create alliances that build on each other's strengths while actively managing the health of the collaboration.
4. Include a solid combination of top-down and bottom-up dynamics in the programmes: provide guidelines, have a feedback mechanism, promote collective creativity and make the programme visible.
5. Sustain relationships at all levels of the system, from the ministry to the student. Collect information to influence design and redesign.
6. Create the conditions for learning across organisations, with shared data input to take decisions.
7. Work with leaders who can manage the programme content, the change management and communication.
8. Understand the variety of school dynamics from the perspective of users and iterate programmes, sessions and protocols quickly.
9. Devote time to thinking about how the strategy will continue in the future.

## Acknowledgements

Thanks to all the students, teachers, parents, principals, local leaders, ministry leaders, participants and alumni from Enseña Perú and staff from Enseña Perú who are joining or rooting for the strategy to be successful.

# 35 Russian Federation: Goonline.2035.University

Polina Zavalina, Education Consultant, World Bank

Ekaterina Lyubimova, Director of Network Programs and Digital Content, University 20.35

Type of intervention: governmental (Agency for Strategic Initiatives, a Russian autonomous non-profit organisation founded by the government of the Russian Federation)
Website: https://2035.university | https://goonline.2035.university | https://steps.2035.university | https://vk.com/go_online_university

## General description

On 16 March 2020, the Ministry of Science and Higher Education of the Russian Federation (MoSHE) recommended that all Russian universities switch to online learning to ensure continuity of teaching and learning during the COVID-19 crisis, using online platforms and modern technologies. This transition seems to have been comparatively straightforward for those universities which had already invested in digitalisation. However, those that had not developed relevant infrastructure and staff competencies faced significant difficulties. Giving lectures on line is a relatively easy aspect of distance learning; implementing teaching methods focused on skills development, such as project-based learning, and keeping students engaged and motivated turned out to be a more challenging task, even for advanced systems.

In particular, the shift to full-time online learning has brought changes and challenges to the teaching of 21st century skills, such as social and emotional skills, communication skills, problem-solving skills, flexibility, adaptability, creativity, critical thinking, and others. During the crisis, such skills may not be a

priority for many faculty members and institutions as they may be understandably focused on technical issues and academic content knowledge.

In this context, University 20.35, the first digital network-based university in the Russian Federation, established in 2018 by the Agency for Strategic Initiatives with the aim to support the digital economy, launched the goonline.2035.university (GO Online) platform. This new digital platform aims to help universities move swiftly to distance learning and to provide students and staff with ready-made solutions for online education.

During the pandemic, the motto of this initiative was “How to increase effectiveness of educational process during the quarantine”. It views the disruption as an opportunity for education systems to improve and become more efficient. The platform aims to help its users update the format and content of their educational programmes and provides tools for organising project-based learning on line.

The main idea was to offer students in Russian universities an intensive online project-based course that would allow them to work on real business problems and develop their practical and communication skills. The University 20.35 Digital Platform brings together on line the educational activities of many universities and online courses from leading online platforms (for example, Coursera and the National Online Education Platform) and provides recommendations about them to support students’ personalised educational path.

Just a month after the shift to online learning as a result of COVID-19, the University 20.35 launched a new educational social service – STEPS. STEPS is addressed to teachers of schools and universities and gives them the opportunity to create their own educational space with various online resources from any platform. Teacher and artificial intelligence (AI) recommendations also help students maintain their personal educational path and/or share their learning experiences with other students.

Moreover, University 20.35 has offered the following activities: webinars on the VKontakte (a social network) channel about available tools, methodology and best practices for online distance learning; a marketplace of services which could help universities switch to online provision; free access to online courses on AI and machine learning.

## Main problems addressed

***A need to build skills and experience in higher education related to online learning.*** The COVID-19 pandemic has transformed the higher education learning environment. Institutions had to rearrange the educational process quickly and this involved facing different challenges. How to retain students’ attention? How to record a lecture at home and make it interesting and catchy? How to support students’ social and emotional learning and well-being from a distance? How to organise efficient group discussion and teamwork with students? How to arrange student practice and performance? University 20.35 provided a suite of materials and tools to support institutions and faculty members in meeting those challenges

***Support for online student teamwork and project-based learning.*** When campuses closed, sufficient resources and information about distance learning were not available and University 20.35 decided to support the higher education system by creating an online user-friendly platform and providing guidelines for teachers and students. The main feature of this initiative is to maintain project-based learning and teamwork for students studying on line. The platform facilitates the use of teamwork, joint project work, discussions and communication between students, which is crucial for the development of 21st century skills.

***Personalised education pathways on the basis of robust digital data.*** Another important priority is to create individual learning pathways for users with the help of AI. The authors of the online platform invite teachers to organise online classes and testing through videoconferences, propose online courses and

digital content to strengthen educational programmes, arrange project work on line, create individual educational trajectories, and analyse group work based on digital data. Students are invited to use online conferences and messages to stay in touch with teachers and classmates, to take free extracurricular online courses from University 20.35's partners, and benefit from personalised education programmes based on their skills and needs during quarantine, when they may have more time to master a new digital profession and even launch a start-up.

## Mobilising and developing resources

University 20.35 has built on previous experience, knowledge and infrastructure for this initiative. Since 2018, it has supported the digital transformation of the Russian higher education system. Together with leading Russian IT companies, it has created the Russian Educational AI and the digital educational platform of University 20.35, which is now integrated with its new GO Online platform.

The institution provides an intensive training programme for university management teams and has developed and implemented various cutting-edge technological solutions at such workshops, including:

- developing individual student pathways with AI assistance
- recording digital footprints: AI analysed the participants' interaction in social networks, the results of completed tasks, geolocation, uploaded photos and videos, etc.
- tracking changes in participants' mindsets through semantic speech analysis
- gathering biometric data to estimate the level of stress and fatigue at different stages of the programme
- creating a competence profile of each participant linked to key national technology development programmes.

In two years, University 20.35 has accumulated extensive experience in organising efficient teamwork, which it has used to inform its new platform and channel for online learning.

## Fostering effective use and learning

***A platform to support online team and project work.*** The new GO Online platform was designed in a way so that universities could engage students in team project work, organise teamwork with distributed participants, give free access to educational content and help students create learning pathways. It allows teachers to receive information about which tasks a team is currently solving and how tasks are being distributed among students. Moreover, the platform gives personalised recommendations for development to each team member and provides universities with aggregated data on students' activities. Thus, the platform fosters interaction by analysing students' data in real time. Due to the COVID-19 pandemic and the resulting challenges facing the higher education system, University 20.35, together with the VKontakte social network, has also launched an online social media video channel for teachers and higher education management.

***Using artificial intelligence to create individualised problem-based intensive programmes for students.*** One of the distinctive features of the initiative is the use of AI technologies and big data for maximum personalisation of the educational programme. University 20.35 can track users' actions and based on the obtained data, the AI provides the participants with personalised recommendations for further training. This is a key strategy to support effective learning.

University 20.35 organises intensive two-month programmes for students where they can co-operate with participants from other regions and even from abroad and form a team to solve a specific task from partner companies. In usual circumstances, such intensive programmes take place offline and in-person at partner

universities and may include some blended online activities. Now that the offline model has become impossible, the GO Online platform proposes intensive online programmes for anyone interested in the project.

First, an applicant goes through a diagnostic phase, where the system, with the help of AI, analyses their skills and psychological characteristics and suggests relevant courses for self-development on the basis of this information. Second, the participant chooses a task among those proposed by a university or a technological business company. There are several available tasks published on line, such as developing a prototype for an energy-saving home, planning a geoinformation system start-up or designing a soil-composition monitoring device. The topics cover various fields and require different skills, from operational to engineering, which makes such projects accessible to students with different backgrounds.

Five to seven students gather around one project and University 20.35 provides tools, master classes and courses and helps them to co-operate effectively as a distributed team. Finally, each team presents the results of their project. University 20.35 has suggested to partner universities that they can replace regular in-class student practice with such intensive online programmes during the COVID-19 pandemic.

***Materials and tools to support teachers to build their knowledge of online learning.*** The GO Online platform has gathered useful materials and tools for teachers and university management on how to conduct online lectures, organise webinars and virtual rooms; how to use online courses and available resources or create their own; and how to implement project-based learning and personal education.

The GO Online channel complements the platform and provides:

- practice-oriented video modules with practical solutions and life hacks about how to start and maintain engagement in distance learning, what to use, what is effective, and what is too complicated and time-consuming
- live streaming of discussions with teachers about improving current practices, eliminating bottlenecks and sharing practices from the field
- guidelines on using laboratories with simulators and organising distance work with the equipment.

The channel also addresses the following topics:

- student practice in new circumstances
- project-based learning and using real tasks from business
- relevant content for teachers to be used in their online lectures
- physical education.

The channel is innovative in several areas. Its developers highlight that, first, there are always two levels of content: that for beginners and that for more experienced users, so the users can easily choose what is relevant to them. Second, the comments under the videos provide not only feedback, but also useful data for the AI, which analyses requests, comments and answers and creates sequences between the videos for each user. The system navigates and personalises the content. Moreover, the developers teach university leaders how to collect digital footprint information and manage the educational process on the basis of these data.

## Implementation challenges

***Demand on student time.*** One challenge was related to the lack of time that students had to spend following a personal learning path. Most Russian universities have switched to training via video conferencing and increased the number of homework assignments for students. The students found themselves in an unfamiliar situation and were not ready to experiment with individual curriculum and

undertake new project assignments. Despite this, 29 universities decided to join the initiative within one month of the start of the lockdown, and there were 4 300 students using the platform in June.

***Lack of university budgets.*** Another challenge was the lack of money. Universities spent a lot of time and money on transferring lectures on line and on measures to combat COVID-19, and could not spend more on personal and project training. As a result, University 20.35 has to cover the costs of online courses mainly from its own budget and this limits the number of students that can be served by these courses. However, numbers remain relatively substantial: in November 2020, University 20.35 had 59 universities and over 10 000 students and offered courses from over 10 educational platforms, including Coursera.

***Moving beyond student audiences.*** It was clear that students were not the only category that could benefit from online learning and University 20.35's platform during the pandemic. University 20.35 therefore designed projects to enable technology and digital content to benefit various audiences. For example, in September 2020, University 20.35, with the financial support of the Russian government, launched a new project for all citizens based on digital certificates: anyone could get a certificate and use it to take online courses from various educational organisations and online platforms. The main goal was to give citizens new competencies in digital professions to improve their professional experience in new circumstances or to get a new job. As a result, 33 000 citizens from 48 regions received a certificate and began training on the University 20.35 platform.

***Transforming existing programmes into new formats.*** University 20.35 had to carefully innovate to ensure that it was able to deliver its existing programmes in new formats that met different needs during the pandemic. For example, in November 2020, University 20.35 successfully implemented a new format of a two-week online programme and the world's first accelerated learning and intensive learning programme for teams and start-ups creating products based on AI technologies. More than 700 teams were selected from 16 000 individual and 1 800 team entries. In the digital space, 11 000 events were held with the participation of more than 800 experts and teachers from 28 universities and 118 industrial companies.

## Monitoring success

In general, in 2020, the number of users of University 20.35's digital platform has increased from 110 000 to 430 000. Thus, over 300 000 people began their personal educational journey using AI-based recommendation systems analysing their digital footprints. The new STEPS service has become a useful tool for teachers and professors of Russian universities – over 1 200 digital spaces have been created. The GO Online platform is still popular in the community of teachers and professionals and is used to find, develop and implement new technologies, but the focus of new innovations has shifted from online technologies to personalisation and student engagement.

## Adaptability to new contexts

The initiative is open to every institution and student in the Russian Federation and all universities could join. Participation requires a certain level of internal culture, openness to cutting-edge solutions such as the use of AI, and readiness for technological changes. The resources created during this crisis are likely to continue to be used after the pandemic and will be developed further.

The experience of University 20.35 and its platforms could be used in any country where digitalisation of higher education is part of the national strategy.

### Box 35.1. Key points to keep in mind for a successful adaptation

1. Build on existing experiences and the resources already developed and make them available to a larger audience.
2. Ensure online platforms and channels are easy to use, by:
   - making the interface user-friendly and informative
   - testing the platform and its content with potential users
   - providing guidelines for teachers and students and rapid help service available on the platform
   - partnering with social media
   - gathering useful materials and tools for students, teachers and university management
   - being open to every institution and student
   - having different levels of content: for beginners and for those who are more experienced.
3. Learn from your experiences to propose rapid solutions to vital problems in an iterative process.
4. Create a community of like-minded partners.
5. Use technology (artificial intelligence, big data) for analysis to inform individualised learning pathways for both students and faculty members and to provide universities with aggregated data on students' activities.
6. Demonstrate benefits to motivate users to change by:
   - showcasing examples and successful stories and sharing the experience of others
   - explaining the necessary steps to achieve goals
   - providing opportunities to develop 21st century skills
   - giving personalised recommendations for development to each team member
   - collecting materials and tools to support teachers to build their knowledge of online learning advantages.
7. Provide necessary support and tools, such as:
   - educational social services for teachers to create their own educational space with various online resources from any platform
   - tools to facilitate teamwork, joint project work, discussions and communication between students
   - online channels on social media
   - lists of free available courses and material
   - a tool to build personalised learning paths.
8. Bring knowledge together and become a communication platform for sharing experience and best practices to support the digitisation of higher education institutions, during and after the pandemic.

## Acknowledgements

Vasily Tretyakov, Strategic Development Advisor, University 20.35

Natalia Kulbiatskaya, Director of the Production Knowledge Center, University 20.35

# 36 Saudi Arabia: Moving high-stakes examinations on line with artificial intelligence technology

Abdullah Al-Qataee, CEO, National Centre for Assessment, Education and Training Evaluation Commission

Nayyaf Aljabri, Director General, Research and Innovation

Laura Gregory, Senior Education Specialist, World Bank

Amira Kazem, Senior Operations Officer, World Bank

Type of intervention: governmental
Website: www.etec.gov.sa

## General description

When Saudi Arabia's schools closed on 9 March 2020 due to the COVID-19 pandemic, the Education and Training Evaluation Commission (ETEC) rapidly brought forward plans to convert its high-stakes Standardised Achievement Admission Test (SAAT) – the Attehseeli – from a paper-and-pencil format to an online format. This move was possible due to investments made over previous decades in infrastructure and expertise for assessments, plus careful planning and communication for the new system and its roll-out. In addition, the switch to online examinations was enabled by new investments in some of the latest artificial intelligence (AI) technology.

ETEC is an autonomous governmental entity responsible for evaluating, assessing and accrediting education and training in Saudi Arabia. It reports directly to the prime minister. Within ETEC, the National Centre for Assessment (QIYAS), which has operated for almost two decades, is responsible for developing and implementing over 90 standardised and professional tests for the public and private sectors, having over 1 500 test models and an item bank of over 230 000 questions.

The announcement to move the SAAT on line was received with apprehension by students and universities, mostly because they were concerned about potential unfairness, cheating and technical problems. ETEC put in place measures to prepare students and universities, including a mock SAAT one week before the final SAAT; provide options for every student to sit the SAAT, including on line or in QIYAS computerised testing centres; and guard against abuses of the system with automated proctoring through AI technology. ETEC's communication of these measures was wide-reaching and pre-emptive, making students and universities feel more assured of the new processes, and enabling successful administration of the SAAT on 8-9 June 2020, just four weeks behind the usual schedule. At that time, around 218 000 students downloaded the SAAT at home on their computers, completed the examination offline with camera monitoring and uploaded their responses within the required time, with AI technology flagging potential violations for human review. A further 117 000 students went to an ETEC computerised testing centre or mobile testing unit to sit the online version of the SAAT.

This experience has encouraged ETEC to accelerate its previous timelines for moving other tests and assessments on line, making better use of the latest technologies and thereby bringing efficiency savings in the long term. In the short turnaround time brought about by the COVID-19 pandemic, much has been learnt by ETEC and by the students and universities in Saudi Arabia affected by this switch to online assessments, which will help to further enhance the online examination system in the future.

## Main problems addressed

The SAAT is one of three requirements for university entrance in Saudi Arabia, along with the secondary school grade point average, which is calculated by schools across the three grades of secondary school, and the General Aptitude Test, known as "Qudorat". Each university decides its own way of weighing these three scores, but universities tend to give SAAT greater weight for several reasons. First, the SAAT correlates with university grade point average more than the General Aptitude Test and the secondary school grade point average. Second, compared to the secondary school grade point average, the SAAT has the advantage of being standardised, overcoming the possible problem of grade inflation and harmonisation for grades awarded by teachers across different schools in secondary education. Finally, the SAAT is curriculum-based, unlike the General Aptitude Test. The science-track SAAT tests knowledge of mathematics, chemistry, physics and biology based on curriculum content in the three grades of secondary school. The arts-track SAAT tests knowledge of religious education, Arabic and social studies over the three grades of secondary school.

The main problem addressed by this solution was to allow students to graduate on time and generate fair and comparable information about students' academic achievement for the university entrance and selection process. With the closures brought about by the COVID-19 pandemic, few options were available to allow final grade secondary school students to complete their studies and apply for university and college. Relying on the teacher-awarded secondary school grade point average to measure achievement was unsatisfactory given that it is not subject to a moderation process for standardising grades across schools, and because grade inflation may not allow discriminating between students. Delaying to the next school year would have caused significant disruptions for students, schools and universities. Given that ETEC had already begun investigating a move from paper-and-pencil to online testing, a decision was taken to seize this opportunity to accelerate the move on line for the SAAT. As a high-stakes and

wide-ranging examination, this required careful planning for well-managed change, affecting a large number of students.

Several other related problems needed to be addressed to make the move to online SAAT possible. One key challenge was to ensure that all students had access to the SAAT, regardless of their location; their digital skills; or the types of devices, software or connectivity they had access to (if any). Another challenge was to ensure the safety of students and their data, while also embedding measures to verify the identity of the students and any violations of expected behaviours during the SAAT. Advanced technologies, including AI, are now available to tackle these issues. Procuring these technologies with efficiency, flexibility, relevance and cultural sensitivities was a key consideration for ETEC as it moved quickly to prepare for the new mode of SAAT.

## Mobilising and developing resources

As one of the six biggest assessment centres in the world, QIYAS is well established, with testing centres across the country, mobile testing units, advanced security systems, and a vast array of specialist staff and training facilities. The investments made over the last two decades enabled ETEC to respond rapidly to the challenges brought about by the COVID-19 pandemic.

As another important condition that made the examination possible, the Ministry of Education provided remote learning opportunities on multiple platforms so students could continue to study for their examinations. These included an online portal, a YouTube channel and satellite TV channels.

A key decision to take was whether to use live proctoring or automatic proctoring of the online SAAT to guard against cheating. Live proctoring involves trained proctors monitoring examinees' behaviours through live video and audio, such as their eye movements or interruptions. This is the more expensive option and requires continuous Internet connection throughout the examination period. Automated proctoring involves recording the examinee through video and audio and using AI technology to flag suspicious activity. The AI proctoring can take place live or be activated once a recording is uploaded, thereby minimising connectivity requirements during the examination. The AI technology identifies patterns associated with cheating such as sounds and voices, facial recognition to ensure the authenticity of the examinee or identify other faces in the room, identification of prohibited objects, patterns of eye movement, etc. Any violations flagged by the AI proctoring can be reviewed by humans for decision and action.

A new examination platform needed to be procured by ETEC for the SAAT to go on line. ETEC developed the following selection criteria prior to reviewing the solutions available on the market:

1. ***Encryption.*** The platform should follow the international encryption standards AES256 to exchange data with examinees; use encrypted email protocols for sending passwords; and encrypt content after uploading of answers and expiration of the examination.
2. ***Compatibility.*** The platform should support Microsoft Windows and Apple Mac operating systems.
3. ***Device activity.*** The platform should disable access to all files, programmes and networks during the examination, as well as close all video and audio data access ports to, and from, the examinee's device; detect and close any unlawful access to the examinee's device and any transmission points before starting the examination; and use time-restricted downloading, starting, monitoring and uploading of the examination with the lowest possible Internet data consumption.
4. ***Examinee's behaviour.*** The platform should prohibit taking screenshots and monitor common examination violations, and use AI technology to monitor the examinee's behaviour during the examination and flag exceptions for later investigation.

5. ***Cybersecurity.*** The platform should ensure privacy of download and upload for each examinee; apply technical standards for cybersecurity in protecting and implementing the examination; and apply quality standards in data governance, storage and distribution.

Five of the most common platforms were compared and found to have similar features, though a couple of them did not allow large numbers of examinees to take the examination in each session, or did not allow the examination to be taken offline, or did not include AI proctoring and monitoring.

To ensure equitable access for all students, ETEC prioritised the platforms that had minimum technical requirements and for which an Internet connection was required only to upload and download. In addition, ETEC made arrangements for a version of the SAAT to be available at computerised examination centres across the country. While students previously sat the SAAT using a paper and pencil in halls with in-person proctors, the computerised centres already existed for other ETEC testing services. When registering for the SAAT, students were asked whether they wanted to take the examination at home or in one of the centres (with safety precautions for COVID-19 in place). Around two out of three students elected to take the SAAT on line at home. The mobile testing units were moved to various locations more frequently than usual to make sure that students in remote areas had access to the computerised SAAT if needed.

Existing ETEC proctors were trained to take on new roles, including investigating violations raised by the AI proctoring. With state-of-the-art training facilities and trainers on hand, ETEC was able to mobilise all training quickly and at little additional cost.

Some changes needed to be made to the design of the SAAT. For example, the length of the SAAT was reduced by 50% to minimise time without losing test reliability. An analysis undertaken by ETEC using previous years' data found that the shortened SAAT remained highly reliable. In addition, the test questions were amended so that examinees did not need to use "scratch" paper, since paper for note-taking was not allowed (to minimise opportunities for cheating). Finally, the examinations were adapted to remove content from the sixth term of the final year of school, since that term was affected by COVID-19 related school closures.

In terms of regulations, the only changes that were needed to implement the new online SAAT were those related to student privacy and disclaimers. All other regulations remained unchanged.

## Fostering effective use and learning

Students needed to be prepared with information about the necessary conditions for completing the examination on line at home. Clear communication of the requirements and expectations was crucial for a successful move to online examinations. ETEC prepared and disseminated a brochure informing students of the minimum requirements for equipment, including Windows 10, a stable Internet connection, and video and audio capabilities, for example. The brochure also informed students that the examination would be recorded to check for cheating, and described what they should and should not do during the examination. The information disseminated to students made it clear that they needed to take these requirements seriously or else invalidate their results.

Naturally, students were anxious and concerned about the new processes and had questions. ETEC provided several ways to answer their questions: a telephone line operating from 8 a.m. to 8 p.m.; an interactive web chat feature; ETEC's Twitter account; and a WhatsApp number for texting. Brochures, infographics and videos were prepared to help explain all of the processes and requirements.

To pilot the new system and give students a chance to practice the new examination conditions, a mandatory "mock" SAAT was held one week in advance of the final SAAT (between 29 May and 3 June 2020). Without a mock examination experience, students may have inadvertently invalidated their final examination result. For example, they may not have taken seriously the need for a quiet place with no interruptions, which would have been flagged by the AI proctoring as a violation. Students were sent a

detailed report about their performance in the mock SAAT both in terms of their manoeuvring through the platform and their behaviour during the examination (whether there were any violations). The report provided advice to students on what they needed to do differently if violations had been noted. Therefore, the mock SAAT was considered an important learning experience for the students in sitting this type of examination. In addition, ETEC provided an online portal with access to previous tests and learning materials for basic subject matter content for students to use when preparing for the SAAT.

The mock SAAT also allowed improvements to be identified that needed to be made by ETEC before the final version, including to address an initially slow identification verification process and to provide clearer information to students to avoid technical problems. Those students who had technical problems with the mock SAAT (such as not accepting the invitation or not downloading the test or not uploading their answers) were contacted directly by SMS and email. The mock SAAT period was extended for a day and exemptions were made to allow those students experiencing technical problems to take the SAAT at the designated centre.

Universities needed to be kept informed about the changes to the SAAT, so ETEC arranged informational meetings with university management. At these meetings, ETEC explained all the aspects of the new online system and presented the results of an analysis of the SAAT results compared to previous years, including simulations of various weights for the General Aptitude Test, secondary school grade point average and the SAAT. Sharing this information allowed any concerns to be pre-empted and ensured that the universities felt confident in the reliability of the new online system. ETEC made it clear that universities had the right to decide on the weight to be given to the SAAT. If any university felt uncomfortable with the new online SAAT, it could reduce the weight of the SAAT in its selection criteria. However, ETEC explained that the SAAT would be implemented because it was the only available standardised curriculum-based admission examination.

## Implementation challenges

The situation caused by the COVID-19 pandemic called for urgent and decisive actions on the high-stakes examinations and university entrance criteria for students graduating from school in 2020. Under normal circumstances, some of the choices that were made in rolling out the new online SAAT may have been a bit different; however, most of the implementation challenges would have existed regardless of the timing. Any reform of high-stakes examinations is highly contentious and likely to raise understandable concerns from students, parents and universities. As a result, the implementation challenges outlined here and their solutions are not restricted to the COVID-19 response alone.

***Making online proctoring acceptable.*** After taking the decision to move the SAAT on line, the first implementation challenge related to the use online proctoring. With most people being unfamiliar with this type of technology, efforts were needed to alleviate any fears over data privacy, especially with regard to the video-recording of students at their computers for the duration of the examination. QIYAS took two pre-emptive measures to allay these fears: 1) ETEC involved the government agency responsible for regulating data control; and 2) ETEC communicated clearly with students on who would have access to their data, how they would be used and how they would be stored. Ultimately, significant public concerns about cheating meant that there was general acceptance that the online proctoring offered more advantages than disadvantages. After students experienced the mock SAAT and received reports warning of any violations they had made, it appears that there were far fewer concerns expressed about the online proctoring, possibly because students could see its advantages in terms of fairness and tackling cheating.

***Selecting an online platform.*** The second implementation challenge related to the selection of an online platform for the examination. With more time, ETEC may have been more stringent in terms of the selection or adaptation of existing platforms. However, given the limited time, ETEC prioritised the most important elements, which were fairness, robustness and security. Some issues arose during the mock examinations

that needed to be addressed before the final examinations. These included the handling of the identification verification process during registration; the process was slow and the image recognition sensitivity needed to be increased. In addition, better links between the registration process and the platform were needed. ETEC is in a better position to make or request such changes, having gained significant knowledge of its needs and the platforms' abilities.

***Informing students about new examination rules.*** A third implementation challenge was ensuring students fully understood the technical and behavioural requirements of the online examination. To overcome this, ETEC put significant efforts into relaying clear messaging through brochures, videos, social media and "help desks" (telephone, website and WhatsApp). This approach proved to be generally successful, with most students able to complete the online mock SAAT as intended. However, some students still encountered technical difficulties during the final SAAT and were contacted through SMS and email and rescheduled to take their test at a designated ETEC computerised centre.

Last, while training of staff to review the reports of the AI proctoring and investigate flagged violations could be an implementation challenge in other settings, ETEC had staff and training facilities ready and only needed the training materials to be developed, so this was not considered an implementation challenge.

## Monitoring success

Implementation of the new online SAAT was monitored by ETEC throughout the process – from the mock SAAT to the final SAAT and beyond – in terms of students' adherence to the technical and behavioural requirements, the students' results, and their attitudes toward the new format.

Quality procedures were put in place for monitoring violations of the online SAAT. These processes included: an AI proctoring report, human review, a violation audit, statistical assessment reports and an examination review committee for regulations-based decision making. During the SAAT, the AI proctoring report found that 88% of examination submissions had no flags, while 10% had potential violations that needed re-examination and 2% had explicit violations.

All indications suggest that students coped well with the new online SAAT, and that students generally considered the experience fair and that their level of trust in the system increased. Before the mock SAAT, students had generally wanted the examination to be waived this year. Attitudes toward online testing were measured before and after the mock and final SAAT. Results show that only 28% of students felt confident about taking an online examination before the mock SAAT. However, this rose to 31% after the mock SAAT and 38% after the final SAAT. Likewise, before the mock SAAT, 36% of students felt that their home environment was comfortable, calm and helped them to focus on the examination, but this rose to 43% after the mock SAAT and 48% after the final SAAT.

To ascertain the reliability of the new format, ETEC analysed the results of those students who had taken the SAAT last year and this year. The results were generally comparable, indicating that the new format produced results similar to the previous year's paper-and-pencil format.

Further monitoring and evaluation of the experience of moving high-stakes examinations to an online format with AI technology will take place in Saudi Arabia in the coming months and years. However, the results to date suggest a successful implementation without loss of fairness, reliability or quality.

## Adaptability to new contexts

Saudi Arabia was able to make this rapid change from paper-and-pencil high-stakes examinations for university entrance due, in part, to investments made in previous years. In particular, the infrastructure was available in terms of widespread connectivity and high levels of ownership of digital devices and familiarity

with using the Internet among young people. For countries without this type of infrastructure and experience, the move to online examinations would require greater investments and time.

Having computerised testing centres with trained proctors across the country and mobile units for very remote locations for equitable access also allowed this to be a successful experience. In other contexts, variations could be made, such as using computer facilities in universities and in-person proctoring as per traditional examinations for those who are unable to access the required technology at home.

While the costs were high, the investment is a long-term one: the high initial cost is expected to lead to lower overheads in the longer term. As a result, the online SAAT is now a part of Saudi Arabia's strategic plans for digital transformation, and there are plans to expand remote and computer-based testing for other high-stakes assessments to increase convenience for the examinees, produce faster results and realise cost-effectiveness for the education system.

### Box 36.1. Key points to keep in mind for a successful adaptation

To move high-stakes examinations on line:

1. Decide the most suitable type of online examination, leveraging the existing infrastructure to the extent possible, and bearing in mind the technological requirements (which should be minimised as much as possible) and whether live or automatic proctoring is preferred.
2. Assess the required legislative or regulatory changes, which should be minimised as much as possible.
3. Develop criteria for selecting the online platform and carefully compare solutions available on the market. Be sure to request changes for the local situation as needed.
4. Provide alternative arrangements for students who do not have the required technology or who have special needs or are in remote locations.
5. Adapt the content of the examinations to meet the requirements for online implementation and to reflect the curriculum coverage for the year.
6. Provide help desks in various forms (telephone, on line and text, for example).
7. Publicise the experience as much as possible through effective communication with all those affected by the change – mostly students, proctors, schools and universities – to keep them well informed with guidance, rationales, evidence and precise scheduling information.
8. Provide the necessary training for all relevant stakeholders, including proctors and markers.
9. Give students a chance to practise the new format and to test the new system through a mock examination.
10. Expect problems and challenges along the way, and apprehensive students or negative public responses at times, but address them, continue to communicate, monitor closely and share information to allay fears and raise trust in the new system.

## Acknowledgements

Dr. Husam Zaman, President of ETEC; and ETEC staff involved in the initiative.

# 37 Sierra Leone and Liberia: Rising Academy Network on air

Keya Lamba, International Education Policy student and Zaentz Early Childhood Education fellow, Harvard Graduate School of Education

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: public-private partnership
Website: https://www.risingacademies.com

## General description

Rising Academy Network is a school network in Sierra Leone and Liberia with the mission to create schools that open doors and change lives. Founded in Sierra Leone in 2014, Rising provided emergency education to children kept out of school by the Ebola epidemic before opening its first school in April 2015. In Sierra Leone, Rising innovates through schools it owns and operates itself on a low-cost private school model. It then shares the lessons and work with the government and other partners. In Liberia, Rising is in a public-private partnership with the government, providing high-quality structured curriculum content, intensive teacher coaching and rapid feedback loops to its partner schools. Before the COVID-19 epidemic, it was serving 50 000 students in more than 160 schools.

Rising responded to the school closures in March 2020 due to the COVID-19 pandemic by adapting its curriculum content to create a radio programme meant to strengthen and build students' foundational skills even when they are out of school. Rising On Air is a 20-week programme of free, ready-to-air, radio scripts and SMS content made available to partner organisations around the world. The programme leverages Rising's high-quality structured curriculum content, redesigned for delivery via existing, widely available technologies: radio, phone and SMS.

The solution also builds on key lessons learnt from the Ebola epidemic: the importance of deploying a solution quickly to keep children anchored to the education system; the value of being able to access high-quality, engaging content rather than trying to start from scratch; and the need to weave health and safeguarding messages into the approach. Interwoven throughout the content are messages designed to help keep children safe from COVID-19 and also from the broader array of heightened safeguarding risks they will be exposed to while out of school.

Because the Ministry of Education in both countries had been through school closures once before during the Ebola epidemic, they were both able to get the radio school infrastructure up and running quickly. Rising had written and recorded the first radio lesson script within one week of schools closing and aired it on national radio within two weeks of the school closures.

The Rising On Air content covers literacy, language arts and numeracy at five different levels across K-12, from early childhood education to senior secondary school, with complementary content supporting teachers' professional development and safeguarding and health messages. The programme is currently in English and French, with an upcoming Arabic translation. Rising has broadcast these radio lessons in partnership with the governments in Sierra Leone and Liberia as well as in partnership with 25 providers across 16 other countries. The hope is for these radio lessons to reach 10 million children.

## Main problems addressed

Rising On Air addresses several problems:

- ***Providing education to students in remote rural areas who do not have access to the Internet.*** This is the first and most urgent problem. For most children in Liberia and Sierra Leone, low Internet penetration and weak infrastructure makes online learning neither a realistic nor an equitable solution. In Sierra Leone, for example, 81% of Internet users are in urban areas, and 67% are men. By contrast, access to radio and phones is better distributed, with a 51/49 men to women ratio, and a 62/38 rural to urban ratio. In both countries, only one out of eight people have access to the Internet. Without an alternative mode of distance learning that leverages existing widely available technology, a huge number of students will be left behind during the COVID-19 crisis.
- ***Lack of learning resources at home.*** Most children in Liberia and Sierra Leone do not have access to any learning materials at home, digital or physical. In addition, in many households, adults cannot support their children in their at-home learning. There is a great risk that during the COVID-19 pandemic, students will become completely disconnected from school and that drop-out rates will increase once schools reopen.
- ***Supporting teacher development during the crisis.*** Students are not the only group who are disconnected from school during this time. A critical issue is how to grow and develop teachers in their own learning, especially as radio does not allow for much teacher-student interaction.

## Mobilising and developing resources

Rising could move fast as it could mobilise existing resources:

- ***Past experience.*** The Rising On Air initiative was able to get up and running within a few weeks because both Liberia and Sierra Leone had implemented radio school during the Ebola crisis. The Ministry of Education in both countries mobilised quickly to re-establish the infrastructure for a national education radio station.

- ***Partnership with the Ministry of Education.*** Because Rising already had existing relationships with the Ministry of Education in both countries, this nationwide initiative could be implemented quickly.
- ***Existing Rising curriculum.*** Rising redesigned its foundational reading and numeracy curriculum for radio delivery. Levering the already existing in-school curriculum and frameworks enabled Rising to quickly adapt and create content for radio lessons. Rising also had a small curriculum team in place that deeply understood the Rising model and could rapidly redesign the already written lessons.

Rising still had to develop new partnerships and resources:

- ***Adapting the curriculum for other providers.*** Although Rising did have a curriculum to build on, a new standardised foundational curriculum had to be created for radio so the content could be adapted for other countries and contexts. Rising knew from the onset that its intention was to share these radio scripts widely so other organisations could adapt and use them locally. This required the Rising curriculum team to create "standardised" lesson scripts, keeping the lessons as generic as possible while highlighting what might need to be contextualised for partner organisations. A new website was created to house these standardised lesson scripts and example audio recordings so partner organisations can download and use them. In addition, Rising has created a slack platform for all of its partner organisations to collaborate and share tips, recordings and feedback about the radio lessons.
- ***Recording studio.*** The Rising team in Liberia has set up an audio recording studio within its offices. A small team of three school performance managers and one operations assistant work on recording the lessons full time. An outside consultant was brought in to support the technology, editing and recording equipment. The Rising team downloads and adapts the scripts, works with the consultant to record the lesson, then uploads the audio to YouTube and the Rising Google Drive.
- ***Wraparound services.*** Rising recognised that radio alone is unlikely to be enough to support students. To enhance the effectiveness of its radio programming, it developed a complementary 20-week series of SMS content. This SMS content targets and focuses on parents and the role they play in supporting children as regular, engaged radio listeners and learners. To develop the specific content of the messages, Rising is taking an iterative approach that incorporates feedback from parents to inform subsequent messaging. New SMS content will be shared as the development process progresses. Box 37.1 shows some examples of those messages.

### Box 37.1. Sample SMS messages for parents

| | |
|---|---|
| Schedule reminder | Radio lesson schedule:<br>Mon. 10 a.m. 95.3 - G1-G2 Reading<br>Tuesday 10 a.m. 95.3 - G1-G2 Math<br>Wednesday 10 a.m. 95.3 - G1-G2 Reading |
| Radio prep tip | Write down the radio schedule and get batteries for your radio. |
| Radio listening tip | Assign a “special helper” to listen to the radio with your child. The first ten minutes are the most important to listen to together. |
| After the lesson tip | After the lesson, ask “How did you enjoy today’s lesson? Can you teach me a word you practiced? Can you tell me about the story you heard? Can you count your numbers for me?” |
| Friendly encouragement | Your principal, Mr. XXXXX sends greetings to the family. Thank you for everything you are doing to help your child learn. |
| Positive parenting | Telling stories about your family history can help children feel connected, communicate better, do better in school, and help them cope with stress and anxiety! |

## Fostering effective use and learning

Rising has always sought feedback from its key stakeholders: students, parents and teachers. For Rising On Air, it created feedback loops to understand how lessons are being received and how to improve them.

In Liberia and Sierra Leone, a hotline number given is provided at the end of each radio lesson encouraging parents and students to call and give feedback.

The Rising team and teachers also call different parents each day to check in and understand what they thought of the lessons. Parents and students also provide feedback through the complimentary SMS programme.

## Implementation challenges

Rising has learnt a lot about implementing a radio programme in a short amount of time. Initially, Rising hoped to provide basic physical handouts to children to accompany the lessons. The first radio scripts were written as if students would have the handouts in front of them. Rising even explored printing these handouts as two pages on a newspaper for easier access. Ultimately, it was not feasible to reach all students, so the lessons had to be rewritten so they could work without any supporting printed materials.

An early implementation challenge was spreading the word about the radio programme. Although the national radio programme has a far reach, the Rising SMS programme showed that a large number of families did not know about the existence of the education radio programme. Engaging with community stakeholders and WhatsApp campaigns worked well to inform families about the programme so they can engage with it.

Another consideration is that the broadcasts on the national radio station do not reach every community in the country. Rising is working on building more community radio partnerships to air the lessons to a wider audience more frequently.

A last challenge Rising is currently thinking about is how to reach “off-the-grid” communities, as the national radio does not reach these families. Rising is exploring whether audio recordings could be provided to these families or whether other solutions would work better for them. In Liberia, Rising is responsible for delivering audio files to six of the country’s most remote regions. It is also in talks with Orange Telecom about how to use interactive voice recording systems to distribute radio lessons through phone calls for free.

## Monitoring success

First, Rising monitors several implementation measures to understand the use and frequency of the radio programme: the number of broadcasts aired versus the number scheduled to air (to ensure broadcasts are aired as planned); the number of teacher phone calls to students to confirm they heard the lessons; the number of SMS sent and received.

Second, Rising wants to understand the reach of the programme, both within their countries or origin and beyond. In Liberia and Sierra Leone, Rising tracks their reach by estimating the number of listeners on the national education radio. This station reaches 70% of the population in both countries, or around 1.4 million children.

Rising is also keeping track of how partner organisations are using the radio lessons and how many students they are reaching in their local communities.

A future measure Rising will capture is return to school rates to determine whether the radio programme maintained a connection to school and encouraged students to return.

An external randomised control trial by the Centre for Global Development is in place to understand the effectiveness of these strategies. The evaluation follows a small group of students through different grade levels and districts, with an additional sub-group of students who are randomly selected at predetermined checkpoints for assessments. Student learning was assessed just before schools closed, which will be used as the baseline assessment. The ideal plan is to reassess students again in August.

## Adaptability to new contexts

The Rising On Air programme is very adaptable and has been used in a range of ways by partner organisations.

Part of the reason partners have been able to adapt the Rising content so quickly is because Rising had to formalise the lessons and structures early on to share them with other providers who wanted to translate them. Rising provides an overview and structure of the lessons for each grade level and subject area so partner organisations can quickly understand the components of each lesson and choose which they want to use. The lesson frameworks were created in a consistent way with color-coded highlighting for timing and contextualisation to make it quick and easy for partners to adapt.

A partner organisation in Pakistan was able to download, edit and translate the first radio lesson within two days. Partner organisations have noted that the numeracy lessons are easier to translate than the literacy lessons because foundational phonics is hard to translate into other languages.

The use of the lessons has been extremely diverse. Some partner organisations have used the lessons as is and purely translated them (particularly for numeracy lessons). Other partner organisations used the content of the lessons but changed the medium of instruction from radio to WhatsApp voice messages or interactive voice response messages. Organisations in other sectors used the structure and approach to develop their own content, such as myAgro, that provides radio lessons aimed at 400 000 farmers in Senegal and Mali.

Rising plans to continue using the radio lessons after the COVID-19 pandemic as complementary and additive material to Rising's core curriculum. For example, the teacher professional development lessons can be used as consistent refresher or extension courses after the less frequent in-person teacher training sessions. These lessons allow for revision and review and cover more than what Rising can in the limited time it has with teachers in person. A new feature of Rising On Air is the SMS programme, which will also be used in the long term as a new medium of communication with families.

There is also potential for these radio scripts to be used in the informal learning sector to reach out-of-school children around the world. They have the power to address an ongoing problem that existed long before the COVID-19 pandemic. For example, the radio lessons are currently being translated into Arabic for use in refugee camps. As extended school closures or intermittent school closures around the world have become likely during the COVID-19 pandemic, the Rising On Air radio programme has the potential to support the most remote rural students both during the pandemic and after to ensure they have access to education.

### Box 37.2. Key points to keep in mind for a successful adaptation

1. Start by focusing your radio lessons on a few subject areas or grade levels, get them to a high quality and build from there.
2. Create a team within your organisation focused on developing and recording the radio scripts: they should use a standard structure for each lesson, have a quiet space to record audio and practice the timing before recording.
3. Be mindful of other challenges in the current situation, such as risks to family health or to children's safety in the home. Clear and practical health messaging is essential: these short messages could come at the beginning of the radio lessons to increase the likelihood that they will be heard and understood by more than just the students.
4. Collaborate with local community leaders, your Ministry of Education and other key stakeholders to spread the reach of your radio programme.
5. Radio alone is unlikely to be enough. Consider other strategies that might make radio more effective.
6. Understand what parents and students think by creating feedback loops to improve the lessons. This can be done through SMS, phone calls, a hotline, etc.

## Acknowledgements

Thanks to the Rising Academy Network team; Rising teachers, families and students; the Ministry of Education in Liberia and Sierra Leone; and partner organisations using the Rising On Air lessons.

# 38 Spain: #SeeYouInDigital (Ensuring the continuity of learning)

Marta Encinas-Martin, Counsellor, OECD

Type of intervention: non-governmental (no public organisation in lead role)
Website: https://profuturo.education/en |
https://profuturo.education/en/resources |
https://profuturo.education/en/recursos-estudiantes |
https://profuturo.education/en/resources-institutions

## General description

To help mitigate the consequences of the closure of schools across the world triggered by the COVID-19 crisis, the digital education programme ProFuturo put in place a contingency plan ensuring the continuity of teacher training and student learning away from classrooms: #SeeYouInDigital. As part of this contingency plan, ProFuturo opened its training courses and educational resources to everybody, free of charge, regardless of whether they were enrolled in its programme or not. Additionally, methodologies and content have been adjusted to reach students without access to technology or the Internet, ensuring that no one is left behind.

ProFuturo is a digital education programme launched in 2016 by the Telefónica Foundation and “La Caixa” Foundation (based in Spain) to narrow the education gap in the world by providing quality digital education to children in vulnerable environments in Latin America, the Caribbean, Africa and Asia. To do so, ProFuturo relies on digital technology to reach more people in less time and provide more personalised

education and innovative teaching-learning experiences. The health crisis has made the value of these tools more obvious as ways to take education beyond classroom walls and ensure the continuity of learning. ProFuturo wants to put its resources and expertise to good use in a crisis that at its peak left over 1.5 billion children and youth out of school (UNESCO, 2020[1]).

ProFuturo's contingency plan comprises the following actions:

1. ***Opening of ProFuturo's digital learning platform.*** In mid-April, ProFuturo opened its digital learning platform to teachers and students across the world so they could continue learning from home. The platform offers:
   - More than 160 online training courses and digital resources for teachers, focused on the development of their pedagogical and digital skills.
   - More than 7 000 digital interactive resources for students, focused on strengthening specific skills in language, science and technology, maths, and skills for life, while developing competences that are needed to respond to 21st century challenges (digital and communication abilities, teamwork, creativity, problem-solving and decision making).

   This content is available in four languages (English, Spanish, Portuguese and French). ProFuturo also opened a collaborative network where educators can browse a catalogue of curated educational resources and online content. More than 1 600 educational resources can be filtered by subject, difficulty level and type of activity. Teachers can also curate and upload their own content to the network.
2. ***Building strong public-private partnerships to reach more teachers and children.*** Ministries of Education and institutions that wish to include the ProFuturo content in their school educational platforms or use them in radio or TV broadcasts can do it free of charge and with no difficult legal process. To date, ProFuturo has reached agreements with the governments of Chile, Colombia, Costa Rica, Ecuador, Mexico, Nicaragua, Panama and Peru. In addition, together with the African Union, it has offered technical assistance to Ministries of Education in several African countries to develop an offline learning management system or app to reach students without an Internet connection.
3. ***Adjusting content and methodologies to reach people without access to the Internet.*** During the pandemic, ProFuturo adapted its blended training methodology (usually a mix of online and face-to-face) to fully remote training. To reach teachers and students with no Internet connection or access to a technological device, the programme used alternative content and formats, including printed workbooks that were distributed door to door, interactive presentations, podcasts, audio and video lessons for radio and TV broadcasting, WhatsApp forums, and an offline app for teacher training.
4. ***Strengthening training to local partners.*** ProFuturo has reinforced training on innovation, information and communication technology (ICT), and digital competences to its local coaches to ensure they can become virtual tutors supporting teachers and students remotely.
5. ***Equipment donation.*** To mitigate the effects of the digital gap on education during the COVID-19 crisis, ProFuturo made a donation of technological equipment in Spain. Through regional governments and social organisations, 10 000 tablets were delivered to socially vulnerable children and teenagers so they could continue their education from home during school closures.

## Main problems addressed

- This public broadcasting service's initiative aims to support national and regional education authorities as most schools are not prepared to offer students distance education. The programme has opened its learning platform to all students and teachers for free, to ensure wide access and

support schools in organising distance learning and teaching. The platform can be accessed from anywhere and by all, regardless of whether they are part of the programme or not. Moreover, technological equipment (server, router, laptop, tablets, projector, etc.) was also provided where needed.

- Not all teachers are familiar with the use of online platforms nor have the skills to teach remotely. The programme addresses the need for continuity in teacher training through a number of actions to provide teachers with the pedagogical and digital skills they need to integrate technology into their lessons and teach remotely.
- Disparities in access to technology and connectivity of students from different socio-economic backgrounds exacerbate inequalities in education and disproportionally affect the most vulnerable. The programme contributes to ensuring students can count on quality educational resources and the technology required to continue learning from home.

## Mobilising and developing resources

ProFuturo was designed as a digital education programme. It relies on technology and innovative teaching-learning experiences to improve the quality of education of boys and girls living in vulnerable environments and aims to narrow the education gap across the globe. In this sense, the programme continued doing what it has been doing for the past four years. However, given that ProFuturo's natural operating environment has always been schools, the COVID-19 crisis has forced the programme to adapt to support teaching and learning outside classrooms. ProFuturo's digital learning platform was mostly used in schools, where the programme also provided technological equipment (server, router, laptop, tablets, projector, etc.) where needed. Changing this model required some new developments:

- Opening the educational resources required technological adjustments to the learning platform. ProFuturo had to triple the size of the platform's infrastructure, open additional service nodes to improve users' experience, and reinforce the technical support service to assist the growing number of teachers and coaches that accessed the platform and could experience technical difficulties.
- ProFuturo has widened its scope of intervention by including families (in their role as supporters of their children's education), governments and institutions as potential beneficiaries of the programme's educational resources. This required modifications to the platform to enable the sharing of ProFuturo's resources.
- Some resources that were only available locally have been adapted so that they can now be used at a global scale. This is, for example, the case of Oráculo Matemágico, an app that gamifies maths that was created by Telefónica Foundation Peru and used by the programme in that country.[16] The app was launched globally in mid-April and adapted to all Spanish-speaking contexts. By the end of 2020, ProFuturo will complete the development of an app to provide free educational content that can be used offline.
- ProFuturo has invested significant time and resources to develop new content and formats to reach those with no or limited connectivity. These include printed workbooks that are being distributed door to door, interactive presentations, podcasts, audio and video lessons for radio and TV broadcasting, Whatsapp forums, and an offline app for teachers and students. These tools have successfully been used in English, for instance in Liberia, Nigeria and the United Republic of Tanzania, where ProFuturo is implementing a Teacher Development Project together with several members of the Teach For All network to train 15 000 teachers by the end of 2020.

16 In Peru, ProFuturo is called Comprometidos con la Educación.

- ProFuturo expanded the online use of its class management tool used by teachers of the programme to create and plan their lessons. Before the health crisis, most teachers could only use the tool offline, through the software installed on teachers' computers at school. An online version for all of ProFuturo's teachers is now available so they can prepare their classes anytime, anywhere, as long as they have an Internet connection.
- In Peru, ProFuturo and the Peruvian Ministry of Education have developed an online platform, Aula Digital en Casa (Digital Classroom at Home), that not only offers educational resources, but also digital tools to facilitate communication between teachers, students and families, such as messaging systems or debate spaces. By mid-September, 113 000 children had already been impacted directly by this joint project.

## Fostering effective use and learning

ProFuturo's educational resources are designed to give students an active role in the learning process; in other words, to enable "learning by doing". They are interactive and recommend a number of practical activities to help them better assimilate certain concepts. Stimulating student involvement is meant to motivate them to learn and result in higher attainment of knowledge, values and skills. At the same time, non-linear teaching inspires the methodology, which seeks new ways for students to access knowledge. It aims to enhance critical thinking and active learning, as opposed to memory-based learning.

In terms of teacher resources, ProFuturo's training courses have an important practical component. They not only teach knowledge and skills, but they focus on how to incorporate them into the classroom dynamic. Teachers not only learn to use technology and digital tools, but how to teach differently, using innovative teaching methodologies.

## Implementation challenges

Implementing the contingency plan posed greater challenges in Africa and Asia than in Latin America. In Latin America, digital education is more developed and Internet connectivity more widespread, facilitating families' and students' access to the online resources. In addition, ProFuturo benefits from the legacy of Fundación Telefónica in the region, where it has worked for many years building strong relationships with institutional and governmental partners who have helped disseminate the contingency plan and reach more people. ProFuturo signed collaboration agreements for this purpose with the governments of Chile, Colombia, Costa Rica, Ecuador, Mexico, Nicaragua, Panama and Peru, as well as with the Organization of American States and the Organization of Ibero-American States.

In the case of Africa and Asia, the possibility for teachers and students to continue training and learning remotely through online content was limited, given that only 17.8% of households and 28.2% of the population in Africa have access to the Internet (ITU, 2019[2]). To solve this problem, ProFuturo decided to further develop its contingency plan, which initially only contemplated the opening of its learning platform, creating alternative formats to deliver its content to the unconnected. In addition, together with the African Union, it has offered Ministries of Education in several African countries ProFuturo's learning management system for free or collaboration to develop an app, for offline use, to reach those with little or no connection to the Internet.

Before the pandemic, teacher training, the core of the ProFuturo programme, was delivered by ProFuturo's team and local partners through a coach following a blended methodology (online and face-to-face). Given the sanitary restrictions put in place, the training had to become 100% on line. This posed a big challenge, as ProFuturo operates in remote areas where teachers do not always have access to the Internet and, in many cases, do not own a computer or even a smartphone. To bridge this gap and ensure the continuity

of training, ProFuturo has invested much of its time and resources in developing new content and formats to reach teachers and students with no access to the Internet. To resolve this, as mentioned above, the resources were printed and distributed door to door, and complemented by interactive presentations, podcasts, audio and video lessons for radio and TV broadcasting, Whatsapp forums (and soon an offline app for teachers and students).

## Monitoring success

ProFuturo seeks to learn from its own intervention. To this end, it implements a monitoring and evaluation system to measure and assess the progress, scope and performance of the programme, as well as of its intermediate outcomes.

Through different research tools, it collects information about the effects the programme has on the life of its beneficiaries and improving their skills. In addition, ProFuturo has developed learning analytics tools based on advanced statistical and mathematical methods. This monitoring and evaluation system allows them to take decisions about the future of the programme, predicting new scenarios and detecting opportunities for improvement.

To quantify the success of the opening of its learning platform, ProFuturo has monitored the access to the platform's educational resources and the registration in training courses. The data show an exponential increase in the use of the platform compared to the pre-COVID period.

After opening the learning platform, the number of users accessing the content for teachers reached a peak of 254 000, up from an average of 28 000 users in March. In terms of course registration, from an annual average of 50 000-100 000 teachers registering for courses, there was a jump to 492 120 teachers. Some have registered in more than one course, raising the number of current course registrations to 1 042 000.

Regarding students' and families' access to the educational resources, the platform has had 6 million visits from 170 000 users.

The Math app Oráculo Matemágico has registered 41 700 downloads from 20 countries, a 225% increase compared to when it was only available in Peru.

## Adaptability to new contexts

The COVID-19 crisis has only accelerated a long due need to transform education. ProFuturo believes that the transformation underway is irreversible and that hybrid learning will become the new norm, meaning that the demand for quality online educational resources and for digital native teachers will only grow. ProFuturo has a lot to bring to the table and will therefore extend these actions beyond the health crisis.

ProFuturo's digital learning platform was opened at a global scale in April. In a matter of weeks following school closures, teachers and students from different parts of the world were already using the resources made available. However, the data on platform use collected by ProFuturo show that access to the resources is greater in those countries where ProFuturo operates as a programme. To expand the impact of this initiative in countries other than the 38 in which it currently operates, ProFuturo has deepened its partnerships with organisations such as UNESCO, the World Bank, the United Nations High Commissioner for Refugees, the Organization of American States, the Organization of Ibero-American States, and the Inter-agency Network for Education in Emergencies. They have helped to disseminate ProFuturo's resources and to reach more people. In the coming months, ProFuturo will continue to work with its allies and build new partnerships to expand to new contexts.

In terms of scalability, the solution has no real limits given that the educational resources are accessible for free on line. In addition to reinforcing the outreach and dissemination strategy, ProFuturo wants to continue working on the development of content for students and teachers without access to the Internet.

### Box 38.1. Key points to keep in mind for a successful adaptation

1. Organise educational resources by topic, language and level of difficulty to facilitate use by students and families.
2. Curate, filter and catalogue content to help teachers navigate through the immense number of resources available.
3. Share the resources with governments and institutions so they can be accessed from as many resource banks as possible and reach more people.
4. Build partnerships that complement your work to offer holistic proposals that guarantee the continuity of learning in various contexts.
5. Broaden your target group to include other possible beneficiaries (i.e. families).
6. Invest time and resources in strengthening your local partners. Continue to train teachers on the use of technology. Facilitate and moderate those trainings.
7. Develop alternative approaches to reach the unconnected (i.e. printed materials) and invest in technology needed for this purpose (apps, offline software).
8. Collect data to monitor the progress of the project.
9. Be flexible to make strategical changes to the project in a timely manner to ensure that established goals and results are reached.
10. Pay special attention to legal issues related to using and sharing content.

## Acknowledgements

The author would like to thank ProFuturo for providing information for this story.

## References

ITU (2019), *Measuring Digital Development Facts and Figures 2019*, International Telecommunication Union, Geneva, https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf. [2]

UNESCO (2020), *Responding to COVID-19 and Beyond: The Global Education Coalition in Action*, United Nations Educational, Scientific and Cultural Organization, https://unesdoc.unesco.org/ark:/48223/pf0000374364. [1]

# 39 Spain: Learn at home

Marta Encinas-Martin, Counsellor, OECD

Type of intervention: governmental
Website: https://aprendoencasa.educacion.es

## General description

Aprendo en Casa (Learn at home) is an initiative launched by the Spanish Ministry of Education and Vocational Training as a result of the temporary suspension of face-to-face teaching activity. It is a web portal that was developed in ten days which brings together quality educational resources, online training, and tools and apps for teachers, families and students. One of its innovative features is a partnership with the national television broadcaster. Aprendo en Casa is a flexible website that is constantly updated with new initiatives and which provides for needs that existed but that were not initially detected.

## Main problems addressed

The main problem was to provide all teachers, families and students in Spain with quality resources for school-age students' learning during the COVID-related lockdown. This federal initiative supplements other initiatives by the regional education authorities.

## Mobilising and developing resources

The Ministry of Education and Vocational Training, through the National Institute for Educational Technologies and Teacher Training, has been working on the production of open educational resources, training teachers on the use of ICT for educational purposes by means of online and on-site courses. The

National Institute for Educational Technologies and Teacher Training has also helped teachers create their own teaching resources and co-ordinated ICT projects in which teachers can participate.

The existing resources that made this initiative possible were:

- A wide collection of open educational resources, created by teachers and readily available for them to share under the umbrella of Project Procomún. Likewise, Project EDIA offers a variety of proposals connected to active methodologies and the development of digital competence, in addition to being a repository of images and sounds. The CIDEAD, the department of the Ministry of Education devoted to distance learning, also developed and provided materials.
- A free and open authoring tool for teachers to design their own resources: ExeLearning.
- A collection of open online training courses (MOOC, NOOC and Edupills) with different lengths and topics to respond to the needs of any member of the educational community interested in teaching and learning with ICT support.
- An expert team at the National Institute for Educational Technologies and Teacher Training, which designs online training for teachers to support their digital teaching.
- A collection of good practices from different sources such as Inspiring Educational Experiences or the Observatory of Educational Technologies.
- The new features that the new web portal had to develop were:
  - A new way of organising resources, taking into account: the fact that students are learning from home; teachers' demands to cope with the current challenges; the wide range of resources offered by the Spanish regional educational authorities; the possibilities that television can offer to all learners from diverse socio-economic backgrounds and its capacity to reach students across the country for educational purposes.
  - A curation of high-quality content so that it is manageable for teachers.
  - Content that caters to the needs of all compulsory educational stages, all subjects, types of students and that also takes into account the lack of online service at home.
  - Regular updating of resources for as long as the current situation lasts.
  - A schedule that summarises the educational content of weekly TV broadcasts, along with the link to access them on demand after they have been aired.

## Fostering effective use and learning

The web platform is organised in clear sections addressed to the whole educational community. The fact that users can find a considerable number of resources and services in the same way in a clear manner is an effective way to support teachers, students and families. In fact, the portal includes:

- A section labelled "Docentes" (teachers), which shares resources, training, support and initiatives from various private and public entities, as well as teachers. The materials in this section link to the site "Resources for online learning" from the National Institute for Educational Technologies and Teacher Training.
- A section labelled "Familias" (families), which collects information on tools, websites and applications for children's learning and leisure activities. The activities are organised by educational stage and subject. This section also includes information about educational apps (with a sub-section focused on catering for educational needs), resources shared by teachers, mostly YouTube channels, that can be used at home as a support, and a list of museums that offer virtual visits.

- A section labelled “Comunidades autónomas” (regions) shares the websites that regional educational authorities provide as a reference for publishing information of an educational nature during the temporary school closures (regulations, resources, applications, etc.).

## Implementation challenges

The main implementation challenge has been the short notice with which the website had to be up and running. Since the school closures began, the educational authorities realised teachers’ need for sufficient resources to continue the teaching process. Providing a solid and co-ordinated offer of resources in only ten days, with an attractive and accessible format for all students, including those in vulnerable situations, required a great effort from everyone.

To overcome these difficulties, collaboration between different actors (public and private institutions, teachers, staff from the National Institute for Educational Technologies and Teacher Training, and other departments of the Ministry of Education and Vocational Training) was necessary due to the time pressure.

The main reason for success is the organisation and accessibility of the resources for teachers and families. The most innovative feature is the organisation of the web portal into four large main sections: teachers, families, regions and, what is probably the newest feature, “We learn at home”, aimed at 6-16 year-old students.

“We learn at home” was created thanks to the collaboration of the Ministry of Education and Vocational Training with the national television broadcaster, and aims to facilitate learning during the suspension of face-to-face teaching. This is quite a new innovative feature for several reasons:

- The time span of its special programming: Five hours a day of educational content, which is broadcast in the morning from Monday to Friday.
- It is aimed at the entire age range of students in compulsory education: Three one-hour programmes for primary education students (6-12 years old) and two one-hour programmes for secondary education students (12-16 years old).
- The educational videos have been provided by publishers, institutions, organisations and teachers who have offered them for free and non-profit.
- The content distribution has been organised according to school subjects, so that each day of the week is devoted to a different area (maths, languages, social science, natural science, arts and crafts, and physical education).

To keep up the pace of innovation, the possibility to hold a videoconference is being explored so that all those schools and teachers who do not have an alternative to communicate with students and families are able to find an easy and accessible solution. Moreover, devices and an Internet connection are offered to students that lack these services and who are from disadvantaged backgrounds.

## Monitoring success

The measure of success used are data from Google Analytics for the web portal and the audience share in the case of the TV programmes. Regarding the website, the audience in the last 20 days has been 99 830 users and 267 940 pages visited, keeping in mind that the Easter break was during this time period.

## Adaptability to new contexts

This portal could be used and shared for educational initiatives aimed at improving education in places where accessibility to schools and teachers is not easy. It can also be an example for other areas, such as health, as a unique site where professionals and users can find information, resources, etc. curated by the corresponding administrative department and the collaboration of different actors.

### Box 39.1. Key points to keep in mind for a successful adaptation

1. It can be implemented nationwide.
2. Cater to all compulsory levels of education (6-16 years old) and post-compulsory secondary education, both academic and vocational.
3. Curate resources and high-quality online training.
4. Target special needs and students in difficult situations.
5. Organise content and make it easy to search.
6. Have a unique site for all agents in the educational community.
7. Collaborate with national TV, public and private institutions, and organisations.
8. Foster teacher collaboration.

## Acknowledgements

Thank you to the Spanish Ministry of Education and Vocational Training.

# 40 Chinese Taipei: Contingency plans for hybrid models of learning

Yi-Hwa Liou, Associate Professor, National Taipei University of Education

Christopher Petrie, Head of Global Research, HundrED

Type of intervention: Governmental and Non-governmental
Website: BEEP Lab | City Wandering Challenge | Co-Publishing Project

## General description

Chinese Taipei has been successful in containing its number of COVID-19 infections to one of the lowest levels in the world. It has used many of the precautions, strategies and systems developed in prior experiences with the 2003 SARS outbreak and the 2009 H1N1 swine flu pandemic. It prioritised and implemented prevention strategies in the early stages of the COVID-19 crisis at the end of December 2019. As a result, there was minimal disruption to the regular operation of society and education at large in Chinese Taipei.

However, responding to the pandemic necessitated developing a number of policies, plans and central authority initiatives in relation to primary and secondary education. These included, but were not limited to: delaying the start of the spring semester by two weeks, developing class suspension plans if cases were suspected, school entry and exit controls for teachers and students, planning for continuity of teaching and learning, on-site health and safety protocols, and producing a contingency plan for the national assessment.

Alongside central authority initiatives, a number of non-governmental organisations also developed contingency plans. The focus of this education continuity story is the central authority action taken to ensure education continuity, but it also discusses three non-governmental organisation (NGO) initiatives

working to support students to engage with their local and built environments during the crisis as examples of non-governmental engagement:

- BEEP (Build Environment Experiential Program) Lab aims to enrich and engage the minds of students and educators through the lens of architecture. BEEP uses design thinking to nurture mastery in creativity, confidence and collaboration to prepare students to be responsible users and designers.
- City Wandering Challenge designs programmes for teams of 3 students who challenge themselves to complete 30 missions within 3 weeks. The missions encourage students to make the city their classroom and create meaningful growth through interactions with society.
- The Co-Publishing Project inspires children from remote schools to use smartphones combined with a "photography formula". It aims to motivate students' learning by publishing books of stories with visuals depicting cultural elements from their local area and families.

All three of these NGOs moved to remote activities by providing physical learning kits to students, developing online alternatives to regular events and using free local applications. They all took place in the context of widespread central authority policies to support hybrid and distance learning and to ensure the system was prepared for school closures during the health crisis.

## Main problems addressed

***Ensuring safe classroom environments.*** From early in the crisis, the central authority created and promoted health and safety practices and protocols, such as handwashing, social distancing, personal hygiene, avoiding being in crowded and closed spaces, and other positive health-related behaviours. Teachers and students were required to wear a face mask in the classroom and keep a social distance of at least 1.5 metres indoors and 1 metre outdoors. No maximum class sizes were set as long as the classroom windows were kept opened to allow air to flow. The distance between desks was also increased, meal times were staggered and teachers moved between classrooms rather than students moving between classrooms. Schools were expected to clean and disinfect school and classroom environments regularly.

***Continued learning during class or school suspensions*.** On 20 February 2020, before the start of the spring semester, the Ministry of Education issued a set of standards and procedures for the suspension of in-person classes in the event of confirmed cases of COVID-19, in accordance with the recommendations of the Central Epidemic Command Centre and health experts. If individual schools had two or more positive COVID cases, all classes and instruction provided on that campus had to be suspended for two weeks. If more than a third of educational institutions in one township, county or city were subject to class suspension due to COVID-19, then all the K-12 schools and higher education institutions in that township, county or city had to cease all in-person classes for two weeks. During the suspension, schools and universities needed to continue teaching and learning, as well as create a plan for in-person classes to resume with the safety of the students, staff and surrounding community members at the fore.

***Contingency planning for national assessment.*** As the national high school entry examination for junior high school graduates took place in April and May, the central authority worked with the Central Epidemic Command Centre and testing experts on developing guidelines to facilitate the implementation of this nationwide assessment, including: wearing a face mask at all times during the test; checking temperature at the entrance of the test site; no parent or guardian being allowed into the testing site; keeping all windows open 10 centimetres to allow air to flow in each room with air conditioning on; frequently cleaning and sanitising all sites and rest areas; restricting entry and exit to all test sites; and monitoring the health status of those students who were in self-quarantine or self-isolation and ensuring their assessment rights.

***Alternatives to in-person NGO programmes*.** Despite the minimal disruption to the normal running of society in Chines Taipei, the COVID-19 crisis has nevertheless been described as a "roller-coaster ride" for NGOs in education. It became clear early on that any in-person interaction needed to be significantly modified or suspended, which made the health crisis particularly disruptive for NGO educational programmes.

## Mobilising and developing resources

***Distributing disease prevention resources to all primary and secondary schools*.** Prior to the start of the spring semester, the central authority made sure that each school received the following equipment and resources: infrared forehead thermometer, face masks and alcohol-based sanitiser. During the semester, the central authority continued to supply these resources to schools and particularly provided large schools (700 or more students) with infrared thermal imaging cameras to reduce the time it took to perform the temperature checks as students and educators entered their schools. School-wide surveillance was also strengthened to support early detection and the reporting of suspected cases to local health authorities.

***Developing a disease prevention team*.** Each primary and secondary school was required to create a strategic team of staff from across departments to implement health and safety policies. Each team had a designated spokesperson.

***Ensuring students had access to devices and connectivity for learning*.** Schools were required to check their inventory of usable and loadable technological devices such as tablets, laptops, smartphones, etc., as well as the devices students have available at home, and prioritise the distribution of these devices in support of learning and instruction. If schools were in short supply of some of these devices, they could report to the local authorities and apply for more. If the local authorities were short of these supplies, they could apply for loanable devices from the Ministry of Education. In addition to the equipment/devices needed for online/remote learning, the Ministry of Education also built a budget to provide families with discounted data plans or free SIM deals.

***Providing flexible leave policies*** for working parents or guardians with children under 12 years old or with disabilities.

Despite measures in public school classrooms, the three NGOs had to create and implement contingency plans to be able to continue their learning activities. NGOs tend to be smaller in scale, and as such, are often more agile to experiment, pivot and adapt quickly due to their size compared to the public school system. They came up with several innovative ways to deliver their programmes in a socially distanced manner.

***Providing guidance for setting up home studios*.** Teachers at BEEP Lab set up a technically advanced home studio to deliver their architecture programme on line, although this was an initial challenge. They in turn needed to provide clear guidance to parents and children for setting up their own home studios and provide the necessary materials for families.

***Delivering physical learning kits to students*.** City Wanderer Challenge created kits personalised to each student's role in the challenge (e.g. developing self-confidence to speak in front of people in public spaces). The task assigned for each team member encourages co-operation in unique ways, which also utilises the local region (e.g. public spaces and institutions). A key difficulty with this approach was experimenting with different configurations and processes for making, co-ordinating and delivering these kits efficiently.

***Hiring additional staff and "guides".*** City Wanderer Challenge hired an intern with the specific task of designing solutions to organise online opening and closing ceremonies for each challenge. To help

manage the running of their three-week challenges, they also had the help of "spirit guides", who guided and managed three groups each.

***Using free local applications*.** The Co-Publishing Project used free local applications LINE and WebEx for communications. They provided additional professional development time for teachers to build their confidence with these technologies.

## Fostering effective use and learning

***A mix of synchronous and asynchronous learning*.** School contingency plans outline several action items in response to class suspension, including stay-at-home learning and makeup classes. For instance, high school teachers were able to use weekends or summer vacation to make up for any missed classes using remote or online learning. Following the online instruction and learning guidelines issued by the Ministry of Education, elementary and middle schools were encouraged to provide synchronous instruction, asynchronous online personalised learning and other learning resources for students so they could conduct stay-at-home learning.

***Teaching from interesting locations*.** Some teachers used remote learning to engage their students in learning experiences. For instance, one elementary school social studies teacher provided synchronous instruction via a live streaming from one of the historical places related to her lessons to engage her students with real-time learning and experiences of the actual historical site.

***Supporting a range of learning platforms*.** Central and local authorities made sure schools, parents and students were able to access and use online resources such as the CloudEducation learning site developed by the Ministry of Education and other online courses provided by local Departments of Education such as Taipei CooC-Cloud, Cooc Teaching Platform, etc. (more resources from the Ministry of Education are available online). Some schools have adopted additional learning platform technologies; some are best used for asynchronous learning, classroom management and communications (e.g. Classting, Adaptive Learning from the CloudEducation site, Juiker, LINE, LearnMode, PagamO, etc.), while others are suited for a mixture of synchronous and asynchronous instruction (Google Meet, Jitsi Meet, Microsoft Teams, Cisco WebEx, YouTube, etc.).

***Providing teacher training*.** Teachers were provided with training that helped them understand what and how to use each of these platforms. In addition, teachers were also able to select the kind of platform that they felt the most comfortable and confident using with students and parents.

***Addressing achievement gaps*.** In facilitating (a)synchronous online or remote learning, schools needed to attend to the learning needs of all students, and thus developed remedial education programmes for higher and lower achievers. These programmes offer additional short-term courses on core school subjects (language and mathematics) which took place in-between class periods, after school and/or during the summer. The courses were designed in a way that imbued learning with fun activities through differentiated teaching strategies, co-teaching, team learning and mobile learning to ensure the additional learning needs of students were met.

***NGOs delivering hybrid-learning modules*.** BEEP Lab developed self-paced "hybrid" learning modules in addition to synchronous teaching where students have the opportunity to ask questions. They offered not only synchronous video streaming that addressed students' learning needs in real time, but also channels such as Facebook Messenger, which allowed students to send messages with questions about their project. This helped students have time to focus on mastering the knowledge and skills required in each stage of learning for their project.

***Involvement of parents/guardians*.** The intentional involvement of parents became a major silver lining of the implementation strategy for BEEP Lab and the Co-Publishing Project. Before the pandemic, the

majority of parents rarely got involved with their children's learning. However, because adult help was now required to ensure the smooth operation of lessons, the opportunity to deepen the relationship between the educator, parent and student arose, which also supported social and emotional learning.

***Finding alternative learning challenges.*** The City Wanderer Challenge experimented with alternative ways to help students to grow and overcome personal boundaries on their missions without the presence of a live audience or group of people. One example of this is for students to broadcast a live video on line to demonstrate how they have managed to develop their own way of active participation and connection with the society in initiating change. However, this process comes with unique challenges, such as privacy concerns and the potential permanence of a digital footprint, and limited scale of change that can be accomplished without the in-person support of teammates.

## Implementation challenges

### Central authority and school level

Several challenges arose while implementing the policies and measures for public schools to ensure educational continuity:

1. Co-ordinating efforts between central and local authorities in prioritising the distribution of learning resources, such as technology equipment/devices, and at the same time working together with major telecommunication service carriers to provide smart devices, 4G and home networking packages.
2. Integrating online learning resources provided by the public and private sectors, and making these resources accessible to students and teachers.
3. Planning nationwide operational exercises and drills for online teaching and learning, and ensuring all schools have access to online learning resources and were able to execute them.
4. Although there have been structural procedures in place for case reporting, health screening, resource distributions, etc., some of these procedures can be further simplified at the school level, not only to reduce the workflow of school administrators, but also to increase efficiency and effectiveness in preventive practices. "We do not want to overwhelm our schools during this crisis, but we made sure not to take shortcuts that may lead to an outbreak", said the Director-General of K-12 Education Administration (Ministry of Education).
5. Despite these efforts, teachers expressed the need for more direct guidance and professional development to equip them with the skills and competencies necessary for the implementation of a fully student-centred, self-directed learning approach.

### Non-governmental organisations

The pressure to quickly adapt to sudden restrictions and notify parents about their plans was a stressful experience for NGOs, particularly because there were no assurances that any experimentation to overcome these restrictions would work. The initial planning stage involved addressing learning challenges, which included:

1. Fostering social-emotional skills like empathy, co-operation and collaboration between students as core to the value they deliver.
2. Facilitating spontaneous interactions.
3. Developing 21st century skills like design thinking, architecture education.
4. Providing activities that involved overcoming personal barriers.
5. Promoting team building and deep reflection.

6. Logistics: packaging and delivering learning kits to students' homes; managing different types of channels to communicate with parents; moving and purchasing equipment to build a home studio; etc.

## Monitoring success

At the central authority level, measures have been taken since February 2020 to ensure preventive practices were carried out at the local school level as mandated. The initial strategy included establishing strategic teams of central authority officials to supervise primary and secondary schools' implementation of health and safety procedures. Between February and April 2020, the teams visited 187 public schools in person and made telephone supervision arrangements with 38 schools across approximately 22 cities and counties. Regional superintendents exercised supervision over the schools in their region to evaluate the effectiveness of their preventive practices.

From the NGO perspective, monitoring and assessing progress was supported through increased interactions and check-ins with parents. Some of the significant action taken during this time to monitor the preventive practices includes: check and record the temperature of students and staff three times a day (self-reporting temperature for the City Wanderer), disinfecting learning tools and environments multiple times a day, etc. However, no additional barriers were reported in assessing progress that were not in place prior to the pandemic.

## Adaptability to new contexts

These solutions can be implemented in any setting and provide several lessons that can inform their adaptability to new contexts. As the COVID-19 pandemic and economic disruptions are changing the landscape for education globally, it is important to use co-operation, communication and the exchange of ideas to understand what this means for schools, practitioners, families and communities, and policy makers and how each of these parties can respond and evolve during this crisis.

***Ensuring equity in online and distance learning.*** The COVID-19 outbreak has made equity an even more central concern when it comes to remote education. As schools prepare themselves for remote education, it is imperative to address any equity issues, such as access to technology or online tools, and consistent high-speed Internet. Resources need to be prioritised accordingly so that the inequalities exposed by the COVID-19 crisis are not exacerbated.

***Ensuring the social and emotional well-being of teachers and students*.** When preparing for or transitioning to online or remote learning models, the social and emotional well-being of students and teachers should also be of the highest priority. Structures that can be put in place to address the well-being of students and teachers include:

- making sure the basic needs of students (stable home environments, health and access to education) and teachers (safe workplace, access to technology and digital tools and being able to use them, etc.) are met
- establishing clear routines for communications and encouraging prosocial behaviours
- providing social and counselling services to students, staff and communities
- prioritising relationship building and psychosocial well-being over tasks and assignments
- creating innovative ways to increase connectivity among and between students, teachers and parents/guardians.

***Ensuring efficiency and effectiveness in the operation of health and safety practices*.** The central authority has been able to effectively minimise the spread of COVID-19 by issuing sets of well-planned

national policy mandates and prioritising the distribution of resources needed for health and safety practices.

***Design of self-paced/-directed learning and instruction*.** The use of tech-supported, self-directed learning has become one of the core instructional practices for teachers during this pandemic. However, adopting this style of education systematically across the school is not simple. Together, teachers and parents can help students to be independent learners by giving them more time to self-discover learning opportunities from daily life, such as running scientific observations with the objects around their home. In some schools, teachers are encouraged to provide (asynchronous or synchronous) online learning opportunities to their students over the weekend as a way to simulate the lockdown situation, hone their skills in making personalised assignments and ensure their students have access to online resources in support of their learning.

***Changes in student learning assessments*.** When schools work towards adopting remote education or blended learning strategies, they often face a challenge of differentiation in instruction, learning and assessments. As with face-to-face instruction, teachers need to attend to students' different learning styles, preferences, levels and needs in the remote learning space. Some students may fall off the grid, while others face barriers to accessing course content or completing course assignments on line, such as a lack of Internet access or unstable home environments. These challenges require teachers to create alternative learning assessments that can effectively diagnose students' learning progress.

***Integration of virtual and in-person professional collaboration*.** Such changes to teaching and learning create a pressing need for teacher professional development. One of the strategies that was widely used globally before the outbreak for capacity building is collegial collaboration. In the new teaching context, many teachers realise they cannot do it alone, so a shift towards a more collaborative mindset to learn from colleagues, plan together and share resources via virtual professional communities has been witnessed.

### Box 40.1. Key points to keep in mind for a successful adaptation

1. Develop contingency plans in response to the pandemic that are made in accordance with the recommendations of health experts, including requiring all schools to implement on-site health and safety measures.
2. Distribute disease prevention resources to all schools and continue to do so during and after the outbreak.
3. Create a disease prevention team at the school level to promote and implement health and safety protocols, and to be a focal point in disseminating disease prevention information, monitoring the health status of students and staff, and reporting suspected cases.
4. Complete an inventory of the existing learning resources available to teachers and students in their home, and prioritise the distribution of these resources in support of learning and instruction.
5. Develop and implement flexible leave policies for working parents or guardians with children under 12 or with disabilities so that they can provide immediate support for their children's learning at home.
6. Provide timely and adequate training that teachers need to be ready for planning, designing and implementing high-quality online courses and learning assessments.
7. Continue to monitor the social and emotional well-being of school staff and students.
8. Decrease cash flow dependence on physical face-to-face events for educational non-governmental organisations. One way to achieve this is to build the capacity for hybrid teaching methods; for example, self-paced blended learning where students can progress with a mastery style of learning. Another example is to deliver home learning kits to students.

## Acknowledgements

The authors acknowledge the contributions of the Director-General of K-12 Education Administration (Ministry of Education), the selected schools and the non-governmental organisations for their invaluable and unique perspectives and practices that informed this report. They would also like to acknowledge the support of HundrED.org (a Finland-based education non-profit) and Sayling Wen Cultural and Educational Foundation (a Chinese Taipei non-governmental and non-profit organisation), without which this report would not have been possible.

## Further reading

Basham, J.D. et al. (2015), *Equity Matters: Digital & Online Learning for Students with Disabilities*, Center on Online Learning and Students with Disabilities, Lawrence, KS, https://centerononlinelearning.ku.edu/wp-content/uploads/2017/04/2015_COLSD_Annual-Publication_FULL.pdf.

Foundation for International Cooperation in Higher Education of Taiwan (2020), "Responding to COVID-19: Government-led actions and policies on course delivery", *The New Southbound Talent Development Program*, https://www.edunsbp.moe.gov.tw/news_en1048.htm.

Guernsey, L., K. Ishmael and S. Prescott (2020), "Online learning in the wake of COVID-19: Tips and resources for preK-12 with equity in mind", *New America*, https://www.newamerica.org/education-policy/edcentral/online-learning-wake-covid-19.

Honigsfeld, A. and J. Nordmeyer (2020), “Teacher collaboration during a global pandemic”, *ASCD*, Vol. 77, pp. 47-50, https://www.ascd.org/el/articles/teacher-collaboration-during-a-global-pandemic.

Melnick, H. et al. (2020), *Reopening Schools in the Context of COVID-19: Health and Safety Guidelines from Other Countries*, policy brief, Learning Policy Institute, Palo Alto, CA, https://learningpolicyinstitute.org/sites/default/files/product-files/Reopening_Schools_COVID-19_BRIEF.pdf.

Ministry of Education (Chinese Taipei) (2020), “Overseas students Q&A”, Ministry of Education (Chinese Taipei), https://english.moe.gov.tw/cp-117-23014-1429f-1.html.

Ng, C.Y. and R.H. Brook (2020), “Response to COVID-19 in Taiwan: Big data analytics, new technology, and proactive testing”, *JAMA*, Vol. 323/14, pp. 1341-1342, http://dx.doi.org/10.1001/jama.2020.3151.

Noonoo, S. (2020), “Here’s what schools can do for the millions of students without internet access”, *EdSurge*, https://www.edsurge.com/news/2020-03-20-here-s-what-schools-can-do-for-the-millions-of-students-without-internet-access.

OECD (2020), “A framework to guide an education response to the COVID-19 pandemic of 2020”, *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/6ae21003-en.

OECD (2020), “Social economy and the COVID-19 crisis: Current and future roles”, *OECD Policy Responses to Coronavirus (COVID-19)*, OECD, Paris, https://www.oecd.org/coronavirus/policy-responses/social-economy-and-the-covid-19-crisis-current-and-future-roles-f904b89f.

Our World in Data (2020), “Economic decline in the second quarter of 2020”, *Our World in Data*, https://ourworldindata.org/grapher/economic-decline-in-the-second-quarter-of-2020 (accessed in September 2020).

Rose, R. (2014), “Access and equity for all learners in blended and online education”, International Association for K–12 Online Learning, https://files.eric.ed.gov/fulltext/ED561307.pdf.

Taiwan Centers for Disease Control (2020), “In response to the outbreak of 2019 novel coronavirus (2019-nCoV) in China, Central Epidemic Command Center (CECC) decides that all primary and secondary schools postpone first day of spring semester until 2 weeks later”, Taiwan Centers for Disease Control, https://www.cdc.gov.tw/En/Bulletin/Detail/ZXg7cwUw7JlpVwftHatGKw?typeid=158.

Taiwan Centers for Disease Control (2020), “Prevention and control of COVID-19 in Taiwan”, Taiwan Centers for Disease Control, https://www.cdc.gov.tw/En/Category/Page/0vq8rsAob_9HCi5GQ5jH1Q.

Teaching Tolerance Staff (2020), “A trauma-informed approach to teaching through coronavirus”, *Teaching Tolerance*,https://www.tolerance.org/magazine/a-trauma-informed-approach-to-teaching-through-coronavirus.

Tsai, J.-K. (2020), “Prepare now for online education”, *Taipei Times*, https://www.taipeitimes.com/News/editorials/archives/2020/03/17/2003732829.

# 41 Turkey: I am special, I am in education

Quentin Vidal, Consultant, OECD

Type of intervention: governmental
Website: https://www.meb.gov.tr/ozel-cocuklara-ozel-ilgi-gosteren-mobil-uygulama/haber/20785/tr | Özelim Eğitimdeyim on google play | Özelim Eğitimdeyim on App store

## General description

At the outset of the COVID-19 crisis, the Turkish Ministry of National Education established a series of policy actions to maintain educational services and meet the wider needs of the society as a whole. When schools closed on 17 March 2020, Turkey could rely on a strengthened distance education environment to provide teachers, students and parents with an extensive variety of solutions for pedagogical continuity. The deployed solutions immediately covered all classes from primary to secondary education (including vocational education and training) and partly consisted of a package of academic, social and psychological support delivered through online teaching, radio, TV broadcast (e.g. TRT Okul) and telephone (Özer, M., 2020[1]).

As early as 23 March 2020, Turkey was able to provide distance education nationwide to its 18 million students through the Educational Information Network (EBA), the country's official platform for online education. Supported by Turkey's top three mobile operators that offered all students 8 gigabytes of free data, 12 million K-12 students and 900 000 teachers could immediately access the 1 600 lessons and 20 000 interactive contents curated on the platform, making it the second-largest state-owned platform for online education at that time, behind the People's Republic of China's. The EBA has served as a generic hub for distance learning, as it hosted several TV programmes, integrated psychological support centres

and allowed up to 2.7 million users to hold virtual classrooms at the same time. In June 2020, Turkey further invested in a project on Safe Schooling and Distance Education with support from the World Bank. This longer term strategy will notably finance the development and rollout of a New Digital Education System and the expansion of the EBA, as the aim is to enhance the capacity, reach and resilience of Turkey's education system during and beyond the COVID-19 pandemic and future shocks.

As part of this multimodal toolkit to mitigate school closures, the Turkish Ministry of National Education has developed a mobile application to support the participation of students with special needs in distance education. Called Özelim Eğitimdeyim (I am special, I am in education), the application essentially consists of a mobile adaptation of the generic EBA platform specifically designed for students with all sorts of special needs, from learning difficulties through to sensory and cognitive impairments.

The I am special, I am in education application provides an intuitive portal for students with special needs and their families to access the hundreds of educational resources, activities, videos and lessons that have been prepared and uploaded to the EBA platform mostly before, but also during, the pandemic. It works as a bridge for people who would otherwise be left out of the usual distance education solutions as they sometimes neglect visual or hearing impairments, assume learners' autonomy, and only rarely put interaction and personalisation at the core of their learning strategy. Because its development mainly consisted of redeploying existing resources, the implementation of the application was particularly cost-effective.

The application has the following functionalities:

- Providing easy access to the curated subset of learning resources available on the national EBA platform that was designed or is appropriate for students with different types of special needs.
- Giving access to specific resources for parents and caregivers to support their children with special needs; for example, guidance and training to help them set up an appropriate environment for home-based teaching and learning, or a calendar helping them structure their children's learning activities over time.
- Providing technical functionalities and services as well as following standards for the selected resources to make them appropriate for different types of impairments (for example loud text reading from screen, sign language, dyslexia-friendly fonts, etc.).
- Providing inter-operability with major external technology devices supporting children with special needs, so the learning resources can also be used on those devices.
- Embedding a social network for users (students, parents, teachers), allowing them to upload homemade creations (images, videos and learning activities) and share them publicly with the application user community.

The ministry started to develop the application one week before schools closed in Turkey, and it took only three weeks to make it available free of charge on Google Play and Apple Store. Within the first two weeks of deployment, the number of special education resources channelled from the EBA platform to students with special needs at home had doubled. As of September 2020, the application had been downloaded over 350 000 times across Turkey and counted 117 000 active users.

## Main problems addressed

The application explicitly aimed to ensure education continuity for students with special needs, whether they were enrolled in schools or not. Those students faced some specific problems:

- ***Education discontinuity*** when they either normally attend a public school but have special needs or attend a special education school.
- ***Social and psychological distress*** for some of those students and their family in the face of the pandemic and the entailing social crisis.
- ***Limitations of the generic solution of distance education*** (web platform, TV, radio) for people with special needs, most evidently when they are physically impaired (deafness or blindness for instance) or when they suffer from troubles such as autism, dyspraxia or attention deficit.

In essence, the application aims at inclusiveness at a time when school closures were likely more detrimental to students with special needs (or from disadvantaged backgrounds or deprived areas), effectively increasing the equity gap in education. Education for students with special needs is a process that continues largely beyond schools, often at home in day-to-day life. The application thus provided video training to support the relatives of students with special needs and all bound to spend time with them during the lockdown, including medical assistants or caregivers.

In Turkey, special education teachers working for the public sector have to prepare annual lesson plans for each student with special needs. Thanks to the application, they could follow the yearly planning and monitor their students' development during and after school buildings closed.

## Mobilising and developing resources

The government initiative mostly built on specific educational resources that pre-dated the health crisis. Before the pandemic, the Turkish Ministry for National Education, in co-operation with non-governmental institutions and foundations for disabled people, had made a variety of learning resources available for special education on the EBA portal, Turkey's official platform for distance education. These resources consisted of video recordings of courses taught in special education schools, educational activities and games created by teachers in those schools, or simply traditional learning materials targeting students with special needs.

The initiative mostly developed the mobile application itself, and mobilised existing resources to suit the special needs of its users, including some new adaptations and developments.

A governmental team of 237 experts, academics and civil society members worked under the guidance of the Turkish Ministry of National Education's Department of Programmes and Teaching Materials to develop the I am special, I am in education application. Their objectives were twofold:

1. gather all special education contents under one roof
2. ensure the highest accessibility and usability for each different group of people with special needs and talents.

In total, the experts gathered around 400 education activities prepared in diverse disciplines to target different audiences. Among them are 19 education programmes for students with different levels of autism, 97 video trainings for special talents students, 51 audiobooks for visually impaired students, 17 external educational mobile applications, 11 stories in sign language, 35 audio description stories, and dozens of videos accessible targeting tutors and relatives.

Mobilising a variety of relevant special education resources was only half of the development work for the Ministry of National Education. In a second phase, all efforts were directed towards making those resources accessible and usable by all app users, regardless of their disabilities. These efforts led the ministry's Development Unit to implement innovative contents and features that targeted, but were not limited to, the following special needs:

- ***Visually impaired students:*** the app embeds a technical architecture that is fit for screen-reading programmes and other external devices dedicated to the reading out loud of digital text, and includes audiobooks and textbooks used to teach visually impaired students in school.
- ***Hearing impaired students*****:** most curated contents include sign language and the app proposes additional learning resources on Turkish sign language.
- ***Cognitively impaired students*****:** a sample of activities are designed to be conducted at home for children with mild to moderate through to severe mental disabilities.
- ***Individuals with autism spectrum disorder*****:** appropriate activities are available for students with a low to high level of autism.
- ***Individuals with special talents*****:** practical presentations of educational and social development contents were added at their intention.
- ***Individuals with attention deficit and hyperactivity disorder, Down syndrome, dyspraxia, etc.***

From learning difficulties through to sensory and cognitive impairments, the application also aimed to allow a good level of autonomous use for students with special needs. As students were locked down at home and thus often on their own, priority was given to create an interface that was appealing, fluid, easy to use and functional for all students, despite the likely absence of their tutors or teachers.

## Fostering effective use and learning

Turkey's strategy was to extend its distance education solutions to all Turkish students, including those with special education needs. To that end, the I am special, I am in education application was geared to ensure maximum engagement not only from these students, but also from their families and caregivers.

Evidence has shown that students with special needs are not only more vulnerable in times of crisis, but also less reachable (ECW, 2020[2]). In addition, students with special needs, by essence, do not form a united body: it is precisely the variety of impairments and disabilities that makes special education so specific to each individual.

The challenge was thus to adapt the application and its content to replicate learning conditions that are usual for students with special needs and put interactivity and personalisation at the centre of their teaching and learning strategy.

To ensure effective use and learning for all users, the application was designed not merely as a content repository, but also as a potential daily companion for students with special needs and, perhaps as importantly, for their caregivers. Indeed, depending on the targeted needs, an app intended for children with special needs must include their parents and tutors in the process. To that end, a few sections of the application are entirely dedicated to caregivers, as they provide clear communication, guidance and instruction on how to have their children engage with the app's content at home. For instance, the calendar and events sections were designed to help families set up an appropriate environment for home-based teaching and learning. As students with special needs often thrive more with structure and routines, the application incentivises parents and teachers to work together at establishing home learning activities that resemble the school day.

As much as fostering effective use partly consists in engaging students' caregivers with the app resources, fostering effective learning goes beyond this engagement. Many of the learning resources had initially been designed to be used and taught in-person by expert teachers in dedicated schools. Fostering effective learning translated into adapting these special resources for online learning and physical distance. The ministry's team tried to overcome those barriers through its curation and by implementing the series of innovative features that address the variety of special needs of their targeted users. In addition to those content features, several technical characteristics distinguish the application from other applications hosting online learning resources, such as a content size editor, a system of bridges between educational units or the user message network.

One feature that has been particularly appreciated by the app users is the data entry panel. This panel offers users the possibility of uploading content directly to the application and sharing it with other users. Very quickly, teachers, students and their family started to publish pictures, videos and activity materials that they prepared at home. All this homemade content, hosted on the ministry's servers, is published in the "From you" section of the application and made publicly available. Combined with continuous feedback from the user community, this iterative loop of resources has enriched the user experience over the weeks as it responded to both the supply and demand of people with special needs, and attracted more users to the application.

## Implementation challenges

Gathering a team of experts, mobilising the appropriate resources and developing the application were demanding tasks, but they were seamlessly overcome thanks to consistent support from Turkey's Ministry of National Education, trust among stakeholders and strong human competence on those topics.

Once the application was released, reaching students with special needs at home became the most challenging part of the implementation.

Students with special needs do not always fall on the radar of traditional schooling. Although a share of them are enrolled in public schools, many others are enrolled in special private schools or benefit from home-based education.

To mitigate this issue and foster a large take-up among all students and their families, the Ministry of National Education promoted the application through various channels as soon as it was approved by mobile application platforms (Google Play and Apple Store). Public and private institutions involved in education for kids with special needs were officially notified of the app release, so were all potential users (students, parents and teachers) of the generic EBA platform – Turkey's official platform for distance education – efficiently targeting those with special education needs.

On 25 April, Ziya Selçuk, Turkey's Minister of National Education, presented the application to the public. Several other ministry officials followed on via interviews on national TV channels and state advertisement on the Internet. On Twitter, the hashtag #ÖzelimEğitimdeyim generated thousands of interactions (tweets, retweets and likes), echoing the immediate surge in the number of app downloads across the country.

Since then, the Ministry of National Education has appointed five staff to work full-time on the application maintenance. They are in charge of addressing the day-to-day technical and conceptual problems that emerge given that the initiative has been implemented at a national scale.

## Monitoring success

One week after the Turkish government started to communicate about it, the application had been downloaded 150 000 times, free of charge. This figure grew to reach 353 000 downloads as of September 2020. The application received 335 reviews averaging a 4.6/5 rating on Google Play and a 4.5/5 rating from 165 reviews on Apple Store.

Considering that there are around 2 million people in Turkey listed with all sorts of sensory or cognitive impairments and disabilities, the government set itself a medium-term objective of 500 000 downloads.

As of September 2020, the application counted 117 000 active users. Anyone with an Android or Apple device (mobile, tablet, computer) can download the application and access its full content for free, even if they are not based in Turkey – although all navigation menus and resources are presented in Turkish.

## Adaptability to new contexts

The I am special, I am in education application has several assets that make it potentially scalable and sustainable regardless of the response to school closures.

*International replicability*

Turkey's initiative consists of a mobile application designed to improve access to certain education resources to individuals with all sorts of special needs. Provided that such resources are available or developed, all it needs to operate is a mobile device and a decent Internet connection.

Foreign developers can draw from Turkey's application to replicate its innovative architecture and features to suit the needs of people with various types of sensory and cognitive impairments.

Whether they predate the COVID-19 crisis or whether it was a response to school closures, an increasing number of countries now curate an ever-increasing number of education resources on line. While generic platforms for distance education make these contents accessible to most students at home, special education resources need special attention, especially during lockdown periods. Applications replicating the purpose and design of Turkey's initiative could help mitigate this equity problem for a very reasonable cost and time investment.

*Sustainability beyond the COVID-19 crisis*

Six months after its release and even though schools started to reopen, the application still counted 117 000 active users across Turkey, with thousands of new downloads every week. It is probable that the application will continue to grow, as new sections and content continue to be added and adapted for mobile devices.

On the one hand, schools might soon close again if there is a resurgence of infections, thus reinforcing the need to provide distance education to every student in the country. On the other hand, the application can also be sustained as a lasting supplement to education for students with special needs.

Because education, and in particular special education, does not stop at the classroom door, the I am special, I am in education initiative could set a transformative trend for the inclusion of students with special needs in (distance) education. The application now runs at a low cost and benefits from extensive support and trust within and beyond education systems, so it could, in principle, continue to thrive in the coming months and years.

### Box 41.1. Key points to keep in mind for a successful adaptation

1. Build on existing infrastructures and resources to facilitate the application development. If possible, and if relevant, make use of government's capacity to deal with legal issues, build trust among stakeholders and mobilise existing resources.
2. Involve a multifaceted team of experts comprising educational experts, developers, academics, ministry officials and civil society members to produce the right output for the right audience.
3. Collect, prepare and curate resources taking a user perspective at all stages of the process.
4. Convert and adapt existing resources rather than creating new ones. The wealth of quality education resources curated on line has skyrocketed in the past months, and was often already abundant before schools closed. Gear your efforts to give priority to inclusive delivery rather than piling up content.
5. Design an application that can be accessed, navigated and effectively used by individuals with all sorts of impairments. To that end, collaborate with teachers and education experts for students with special needs to propose an exhaustive list of technical features that allow for the largest possible engagement and take-up through one complete application rather than several specific platforms.
6. Engage parents and caretakers to ensure effective use and learning. Provide them with clear guidance as to how they can set up an appropriate learning environment at home, ideally one that replicates the school day.
7. Promote the application through official communications and advertise its release to all relevant public and private institutions to foster a wide and rapid adoption across your territory when people have to stay at home.
8. Leave room for collective appropriation of the tool. Allow users (students, parents and teachers) to exchange with each other and upload homemade contents publicly for the benefit of all.
9. Provide maintenance services to ensure a scalable and lasting experience for users.

## Acknowledgements

Thank you to Muhittin Delihasan from Turkey's Ministry of National Education who provided all the information on the application. Deep gratitude to Mehmet Nezir Gül, General Manager of the ministry's Directorate for Special Education and Guidance Services, and to Kürşat Dulkadir, Head of the ministry's Department of Programmes and Teaching Materials, and to all the teams that contributed to the application development. Profound thanks to Ziya Selçuk, Turkey's Minister of National Education, and to Mahmut Özer, Deputy Minister, who supervised the initiative and made this note possible.

## References

ECW (2020), *The Fierce Urgency of Now!: Education in Emergency Response to COVID-19*, Education Cannot Wait (ECW) Policy Reports, https://www.educationcannotwait.org/download/covid-19. [2]

Özer, M. (2020), “Educational policy actions by the Ministry of National Education in the times of COVID 19 pandemic in Turkey”, *Kastamonu Eğitim Dergisi*, Vol. 28/3, pp. 1124-1129, https://dx.doi.org/10.24106/kefdergi.722280. [1]

# 42 Uganda: Popow's radio response to COVID-19

Paulette Kaiser Schuster, AB Candidate, Harvard University

Florence Ringe, CEO, Prince of Peace Orphans and Widows (POPOW)

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: non-governmental
Website: https://www.popow-vision.org

## General description

Prince of Peace Orphans and Widows (POPOW) is a community-based non-profit organisation founded in 2009. Based in Kaberamaido, Uganda, its mission is to empower community youth, orphans and vulnerable children to realise their full potential and achieve sustainable livelihoods. POPOW works to uplift communities and to improve livelihoods in seven domains: 1) access to clean and safe drinking water, good hygiene, and sanitation; 2) household economic empowerment; 3) protecting children; 4) education; 5) life skills for youth; 6) mitigating domestic violence; and 7) psychosocial support.

In response to the COVID-19 crisis and subsequent school closures, the Ugandan Ministry of Education and Sports approved and sponsored educational radio broadcasts. None of them is in Kumam, the main language in Kaberamaido, a rural agricultural district in North-Central Uganda. While Kuman is the main language in the city of Kaberamaido and its neighbouring areas, it is not a widely spoken language in Uganda.

Most students in Kaberamaido lack access to television sets or smartphones to engage with educational materials, but over 80% can access radios. Limited government resources have prevented Kumam-speaking radio stations from receiving financial support to broadcast educational shows. For younger Kumam-speaking learners, the non-Kumam broadcasts hold a double challenge in learning material and deciphering a language they are not yet fluent in.

To fill in this gap, POPOW sponsored educational radio talk shows for teachers to broadcast their lessons in Kuman to reinforce learning. This intervention aims to provide additional radio broadcasts to keep Kumam-speaking students learning in academic and socio-emotional domains. Moreover, these radio broadcasts contain flexibility for teachers to calibrate lessons in Kumam to the needs of the community.

Beginning the week of 12 April 2020, POPOW sponsored teachers to broadcast weekly Monday through Friday for five hours a day in Kumam. For primary school students, the radio broadcast included maths, science, social studies and English lessons. Teachers also broadcast these subjects on a secondary school level, with science further broken down into chemistry, biology and physics, and other subjects including geography and religion. The content is not based on curricula designed by education district officers. So far, POPOW has sponsored 10 teacher broadcasts, resulting in 80 hours of radio time. Furthermore, these broadcasts include interactive components such as student panels, simultaneous self-study work (including facilitated notes or questions) and call-in questions. For socio-emotional development, POPOW hosted a talk show with a student panel on COVID-19 and the lockdown.

The intervention followed the following phases

- Phase 1: Initial radio talk shows

  POPOW hosted two talk shows. For the first broadcast, POPOW and partner teachers created an interactive talk show featuring student perspectives on COVID-19 and the lockdown. POPOW featured four students aged 11-16 from across Kaberamaido. Teachers moderated the talk show while other students called in with questions. Students expressed concerns about their education while at home and the challenges of balancing schoolwork and household responsibilities. The inclusion of student voices was meant to engage learners across the district, created comradery among students at home, and exposed community members to students' opinions and challenges that they face in studying during the COVID-19 crisis.

  The next talk shows brought in teachers to teach in various subjects. The next series of talk shows engaged school management committees, parent-teacher associations, community elders and teachers to discuss various stakeholder roles and responsibilities in the education sector during this time.

- Phase 2: Continued talk shows and distribution of learning materials

  POPOW met with school management committees, head teachers and school inspectors to deliver learning materials to learners in primary Levels 3-7. They also worked to inform parents and communities about their roles in supporting students. Meanwhile, POPOW sponsored regular educational radio talk shows hosted by teachers aimed for primary Levels 1-3.

- Phase 3: Follow up and monitoring

  POPOW continues its radio lessons and the distribution of its learning materials while devising plans to assess the outcomes of radio learning.

## Main problems addressed

- On 20 March 2020, Uganda closed all schools in response to the COVID-19 outbreak. The closure particularly affects poor and rural students who lack resources such as television and smartphones to engage in the Ministry of Education's new education framework for education continuity. The government of Uganda approved 38 radio stations to broadcast educational shows in addition to television and smartphone programming. With approval, stations receive funding and resources for educational broadcasts, widening access to educational information for students without televisions, computers or smartphones. Two of these stations are in neighbouring districts to Kaberamaido, Dokoto and Soroti, but broadcast in Lango and Ateso respectively. While listeners in Kaberamaido can listen in, many young students lack fluency in Lango or Ateso. While Kaberamaido's local radio station, Dwanwa F.M. Radio Station, did not receive funding or learning materials provided to the approved radio broadcasts, it was a good partner to broadcast lessons in Kumam.
- In Kaberamaido, in-person learning solutions the lack of learning materials outside the classroom (i.e. newspapers, books, televisions and smartphones) resulting from limited educational infrastructure, particularly in rural communities. POPOW's intervention expanded Kumam-speaking youth's access to understandable educational materials during the COVID-19 lockdown. This intervention is innovative through its focus on community needs, which assists in improving learning engagement throughout the lockdown. If students lose previous knowledge, they are at risk of falling behind and failing to meet benchmarks, which in turn could translate into being held back and/or dropping out. Through this continued learning engagement, the intervention aims to help students more seamlessly transition back to in-person schooling.
- Finally, the radio format allows students with visual impairments to participate in school since physical reading materials fail to accommodate their learning needs. Students with visual impairments can listen to the programmes, while students with auditory impairments are given reading materials.

## Mobilising and developing resources

- Over 80% of Ugandans have access to a radio. POPOW capitalised on this infrastructure to engage learners remotely and reinforce previous learning while at home. POPOW partnered with the local radio station, Dwanwa F.M. Radio Station, to broadcast shows.
- Another resource that could be mobilised were district officers: they designed some of the education content that POPOW broadcast. The radio lessons are based on the school year curriculum designed by district officers. The Ministry of Education and Sports employs officers in each district. The district education officers in Kaberamadio designed the curriculum after an educational exchange visit in another district with excellent academic performance on national standards. The officers chose the successful practices and learning materials from those schools and merged them with the practices and materials in Kaberamaido schools to form the curriculum in Kumam. This work exceeds the scope of the officer's position, but the Kaberamaido district officers acted to additionally benefit learners. POPOW is working closely with district officers to bring these materials to learners through the radio broadcast.
- POPOW also collected and co-ordinated the development of resources from schools and teachers that could be taught through radio.

## Implementation challenges

The main implementation challenges relate to budget:

- The largest cost is to secure radio airtime. The reach of the project depends on those budget constraints. Airtime for radio talk shows charge per hour, which is unaffordable for many schools and teachers without government or outside support. Dwanwa F.M. Radio Station has alleviated some financial burden by offering 2 hours free for every 3 hours of airtime purchased.
- A second challenge related to fundraising. Since education is a domain of the organisation's mission, POPOW leveraged existing networks to raise funds for the broadcasts. However, fundraising proves more challenging than usual given the economic crisis linked to the COVID-19 health crisis. POPOW has also advocated to include Dwanwa F.M. Radio Station as an approved educational broadcast station, but has so far failed to gain approval due to limited government resources.
- POPOW, therefore, funded airtime using organisational funds. Sustainability remains one of its challenges. The district follows the quarter system to break up the school year, and so far, POPOW has sponsored shows for the second civil quarter. Given the changing landscape, POPOW will assess funding and needs for coming quarters.

## Fostering effective use and learning

This initiative engages students and teachers in a number of ways.

First, teachers and students are engaged in panels in which they can speak about their experiences and share multiple perspectives and approaches while creating a sense of community among listeners. These panels cover a variety of issues and further help establish a community approach to learning. These panels focus on students' socio-emotional development through the opportunity to publicly share their opinions and relate to peers and teachers through challenges. These facets of the initiative aim to engage family members and the larger community in their responsibilities to students during remote schooling and increase community exposure to education challenges during this time.

Second, the intervention allows teachers to continue interacting and building relationships with their students remotely and allows students to engage with their peers through call-ins and synchronous work. Unfortunately, it does not involve direct student-teacher interactions due to limited mobility.

Third, these radio shows are designed to be simultaneously educational and accessible to a range of listeners, particularly young Kumam-speakers who lack fluency in other languages. The shows teach previous content in the district curriculum to reinforce learning.

## Monitoring success

- While monitoring has been minimal, POPOW collected listener demographics for the student panel on COVID-19 reactions based on those who called in. Ninety-seven per cent of respondents attended school and are currently home due to the lockdown. The majority of student callers were in primary Grades 6 or 7. Girls were the main contributors, making up approximately 70% of callers. While these data reveal pertinent demographic information, they only cover those who called in, not the overall listeners.
- Teachers do not currently follow up with students listening to the broadcast. Limited mobility due to rural infrastructure and transit restrictions relating to the COVID-19 lockdown prevent teachers

from collecting homework. Teachers plan to follow up with students upon returning to school and will review homework from the broadcasts.

- Informally, parents have reached out to POPOW requesting more broadcasts and many teachers have asked to partner future broadcasts.
- While the message has reached students across the district, difficulty remains in determining the number of students listening and to pinpoint the intervention's overall benefit. However, POPOW plans to work directly with the head teachers (principals) and school management committees to follow up to find out how many learners are benefiting from the radio talk shows.

## Adaptability to new contexts

- Educational radio broadcasts hold promise for communities without access to other infrastructure (such as computers, televisions and smartphones) to distribute educational information given the widespread availability of radios relative to TVs and smartphones. This solution should be considered in other rural areas in which a sizable portion of the population has access to a radio.
- Moreover, this solution resonates in rural regions with high linguistic diversity. Uganda, for example, has 44 official languages.
- The scaling of this solution depends on the affordability of radio airtime, and communication and partnership with schools, teachers, parents and other stakeholders.
- Community organisations hold a unique position to address community-specific problems. Educational radio broadcasts led by community organisations such as POPOW allow more specificity than broad government interventions and allow all students to learn in their most comfortable language.
- While POPOW designed this intervention to address learning during the COVID-19 pandemic, this initiative is workable after the crisis to engage students outside of the classroom and reinforce classroom content, and to reach students not enrolled in formal schooling.
- Going forward, POPOW's strategy is to continue radio talk shows for children in primary Levels 1-3 who learn best in Kumam and continue working with stakeholders and community members for feedback and monitoring.
- POPOW plans to scale up this intervention by increasing the frequency of current radio programming and expanding its reach to the Kalaki district, the Kaberamaido district's eastern neighbour.
- When it is safe to return to in-person schooling, POPOW will shift attention to supporting schools in instituting proper social distancing measures and sanitary practices. POPOW is also considering developing new content should schools continue to be remote in the coming semesters.

### Box 42.1. Key points to keep in mind for a successful adaptation

1. Successful responses to remote learning can repurpose existing infrastructure, such as radios, to avoid wasted energy on establishing new distribution channels.
2. Educational radio talk shows can incorporate the specific learning needs of the community that is listening, such as rural Kumam-speaking students in Kaberamaido.
3. Community organisations offer insight to specific community needs that larger government bodies may not be equipped to address, for example accounting for linguistic diversity.
4. Successful education radio talk shows depend on budgeting for radio airtime, planning lessons that lend to broadcasts, and teacher and school communication.
5. Even though students and teachers are separated, educational radio talk shows can include interactive components (i.e. student guests or call-in questions).

# 43 United Kingdom: BBC Bitesize

Koen van Lieshout, Analyst, OECD

Type of intervention: governmental (autonomous public broadcaster)
Website: https://www.bbc.co.uk/bitesize

## General description

BBC Bitesize is a learner-focused online study support platform that serves as a repository with materials specifically created for the individual education systems and grades represented in UK education. The initiative was started in 1998 and currently has materials available in English, Welsh and Gaelic. The platform is tailored to the respective curricula of Wales, Northern Ireland, England and Scotland, covering 65 subjects in total. There is a complementary application for students aged 14-16 focusing on revision through flashcards (memory aids) to use on the go. The content on the website is available for free, although a TV license is needed to access the complementary shows in iPlayer and Red Button. Prior to the COVID crisis, BBC Bitesize intentionally did not provide “lessons”, given that the platform’s purpose is not to teach the curriculum. In addition to these features, there is also Bitesize Support, which features advice on various student life experiences, including moving to secondary school, jumping into the world of work, starting a new relationship or issues around mental health. Bitesize Careers explains the world of work, with advice from people who have found the right path for them, by advising on what to study, on taking exams or planning a career.

Since the COVID-19 outbreak, coverage has been expanded to support the distance education of students by providing daily lessons for 3-18 year-olds starting 20 April. This is a completely new service, set up in response to the school closures. These daily lessons cover maths, English and science, and consist of videos, practice tests, educational games and articles. They represent a distinct shift from the platform’s normal content, and feature both BBC content and content from partners (e.g. educational publishers, cultural institutions). Outside these lessons, the Bitesize lesson plan varies week to week for each grade, with weekly lessons posted on subjects including history, geography, music and art, as well as support

guides for students with special educational needs. For parents, advice on supporting their children's education, study schedules and other tools for home learning are also posted. Though the platform does not cover the entire range of material provided to students through their schools' online learning portals, they complement the learning experience with lessons and materials on the website.

A Bitesize daily lesson for secondary school students on specialised cells (biology), for example, provides a summary of the different cells and their functions using bullets and bold fonts to highlight key points. The lesson includes a video on a sports therapist, detailing how they use this knowledge in practice. There is also an activity (matching the cell types to the image that represents them), and a quiz to test the knowledge covered. For younger students, the basics of the lesson are more frequently put in video format rather than text, where short clips (usually cartoons) help students understand, for example, how to use expanded noun phrases. Lessons are typically complemented by a video of a person using this in practice – for example a poet talking about onomatopoeia and alliteration in the case of the noun phrases lesson. There are also activities and a quiz to test knowledge.

Besides the weekly programme of videos, there are "teacher talks" videos (commissioned for iPlayer, but also available on the website) that support students struggling with some of the concepts introduced by teachers in the regular videos. These five-minute clips cover key concepts in each subject and are designed to help parents with some tricky questions their kids might ask them. There is also BBC4/iPlayer support for secondary school examinations (GCSE and A levels) with specific programming such as documentaries in science and history and Shakespeare plays performed by the Royal Shakespeare Company.

Bitesize is a platform created by a reputable public media organisation, designed for students and their families. It provides supplementary learning resources aligned with curriculum content while also encompassing the overall school experience, being particularly mindful of ensuring representation of the diversity of the UK population. The COVID response of the platform entailed expanding its focus on curriculum content and expanding the teaching aspect of its educational resources.

## Main problems addressed

BBC Bitesize addresses a number of key issues around education continuity.

- ***Access to online educational resources.*** Since its inception, BBC Bitesize has provided learning materials for students across the United Kingdom in the form of videos, practice tests, educational games and articles related to the UK curricula. With these materials, the platform can support distance education. Students can find multimodal learning resources, allowing them to find mediums or pedagogical approaches that work the best for them. Students can delve deeper into materials at their own learning pace, and "catch up" on particular subjects. The platform represents an opportunity for students who do not have easy access to other educational resources. BBC Bitesize helps reduce some of this gap by providing its online materials for free. Only for the supplementary shows on iPlayer and RedButton is a TV license required, which around 95% of UK households possess. The materials, including worksheets, are available on laptop, phone and tablet to further increase accessibility of content.
- ***Support for students with special educational needs and disabilities (SEND) students.*** Moreover, the need for specific study support for SEND students has been an issue, which was has tried to be addressed by providing resources for parents in supporting SEND students in the form of toolkits and information. Subtitles have made materials more accessible to students with hearing impairments, and to support dyslexic students; video clips and animated content are used to illustrate points wherever this is possible.

- ***Diversity and inclusion in educational materials.*** Bitesize also works towards addressing limited diversity and inclusion in educational materials. Content is tested in different schools, and users with different abilities and demographics. Particular attention is paid to the inclusion of young people in content, and representation of black, Asian and minority ethnic communities; LGBT+ individuals; SEND students; and students of different socio-economic backgrounds, while reflecting the curriculum as it is taught. All of this is reflected in "Diversity and Inclusion Commissioning Guidelines" that need to be followed for all content featured on the platform.

## Mobilising and developing resources

This platform has been a popular study support tool for a while, being used by 40% of primary school students and 80% of secondary school students in 2018. In particular, the materials preparing for the compulsory high school exams (GCSE) were well-developed, which is underlined by the particular popularity for secondary school coverage. Yet, the expansion of the platform since COVID-19 in terms of the amount of materials, number of users, and duration and frequency of visits, has been significant.

The provision of new materials has been ensured by:

- Expanding the team for editorial content.
- Co-operating with partners, either by using their content (credited) or by developing the programme of study or authoring special projects. Such agreements are in place with a number of commercial (e.g. educational publishers, book publishers) and not-for-profit (e.g. museums, cultural institutions, sporting organisations) partners. This co-operation was unprecedented, as a number of these partners could be considered competitors to the platform.
- Support from teachers and other education stakeholders to help. The platform has worked with a large number of specialist education or teacher content authors for a number of years, and has used a lot of them to author content and write scripts. Some of the many teachers who have offered to work with Bitesize have been used to deliver Teacher Talks.
- Making the systems robust enough to handle increased traffic, including very high peak usage numbers. Given the growth in traffic and in the platform itself, there has been a lot of upgrading of systems, and building the networks to help users navigate the expanded space.
- Asking celebrities to present elements of lessons and people with experience in different careers, disciplines and learning styles to share their stories with students. For example, Sergio Aguero, the Manchester City striker, shows learners how to count to 12 in Spanish, and David Attenborough, a natural history presenter, has presented geography lessons for BBC Bitesize Daily Lessons. Overall, the recognisability of the platform has been a key factor in gathering these resources.

## Fostering effective use and learning

The platform has developed a number of approaches to increase student engagement:

- ***Multimodal access, brevity and diversity of materials.*** The multimodal access to materials allows students to find the mode most suited to their devices, learning needs and their study time. There are videos, practice tests, educational games and articles on the website that allow for diverse learning activities. They are generally quite short. In addition to online materials, there is an application, materials on iPlayer and Red Button, and the BBC Bitesize Daily TV show. The Instagram account features social quizzes, interactive and peer-led content, and weekly teacher questions and answers. Moreover, BBC Four will devote a block of programming each weekday evening to shows that support upper-secondary curricula, including broadcast versions of various Shakespeare plays, reruns of classic drama adaptations, and science and nature documentaries.

- ***Diversity of teachers.*** Teachers are diverse and also include celebrities, experts and "everyday people" sharing their experiences.
- ***Engaging and age-appropriate resources.*** The resources themselves try to be both engaging to students (e.g. with use of videos) and designed with a good understanding of learning science. The amount and complexity of the reading for different lessons and tasks are tied to the grade level of students, for example. The platform makes use of the "learn – practise – activity" format, and frequently employs interactive games at the primary level, and (smart) quizzes to check understanding of the content. The materials are also thoroughly tested to ensure they are well-suited to, and well-received by, their target audience. The platform tracks attainment and engagement of students on the platform, with particular attention to "target segments" of students for whom this is particularly important (e.g. students from disadvantaged backgrounds). This way it can adapt strategies or materials where needed.
- ***Visibility.*** Materials can be easily found and referred to by teachers, as the platform is comprehensive and well-known by students and parents. Teachers can easily refer to materials suiting the content covered that week in class, both complementing the learning they seek to foster and making it easier to tailor to students' learning interests. However, student progress on the platform cannot be saved, and teachers cannot provide feedback.
- ***Supporting parents.*** Parental toolkits and guides are provided to support the learning of SEND students, help organise the school day, and focus on other academic and non-academic areas, such as mental health.

## Implementation challenges

Besides the general difficulty of changing the purpose of the platform, and expanding it to allow for daily content, a number of practical implementation challenges were experienced during this process.

First, the restrictions have posed challenges for the broadcast team that could not film as usual. The team had to adapt most of the "regular" processes, including its use of the studio and green screens (backdrops in Chroma key photography, which is a process that replaces a solid-coloured background from behind the subject of a photo (or video) with a new background) in the filming process.

Enabling access for hearing impaired and visually impaired students has been a challenge, especially due to an increasing reliance on worksheets. There are continued and strengthened efforts towards facilitating access for SEND students to as many resources as possible, but given the (much) quicker turnaround to publication of resources, this poses a continued challenge for the platform.

There was also a particular challenge around managing resources. The expansion of the resources meant that it is increasingly difficult to maintain the same quality of production, and that there is additional strain on ensuring the content is well-suited and well-received by the target audience. Moreover, the navigation of the different parties involved and all the requests to help and for help posed challenges to a team already facing a peak demand. Increasing the network size and content volume has also put additional strain on the engineering and design teams.

Managing trust, in particular, has been a challenge. There are a number of parties for whom this trust is crucial:

- The change in the role of Bitesize can be perceived as stepping on the toes of teachers. It has always been a study support resource and has not been involved in teaching the curriculum, so it has been key to ensure that teachers' concerns are mitigated. BBC Teach, the sister site of Bitesize, has provided support and resources for teachers throughout the process.

- Moreover, private sector partners, particularly those considered competitors, have shown significant trust towards Bitesize by providing their resources free of charge on the platform. Ensuring these parties continue to be involved with and content with this arrangement is key.
- Similar management is required for parents, who now increasingly rely on this platform.
- The government, to some extent, is also part of this list, given that the platform's current role stretches beyond what it is normally expected to do, and there might be concerns over the preservation of market competition. It is important to note that Bitesize has put mitigating steps in place to avoid competition issues. They operate under partnership agreements with a number of commercial (e.g. educational publishers, book publishers) and not-for-profit (e.g. museums, cultural institutions, sporting organisations) partners to ensure the market is not distorted, and clear agreements are in place around credit given to partners and the limits of the use of their content.

There were also some linguistic challenges. Bitesize's pre-COVID resources are available in Gaelic and Welsh in addition to English. However, providing all or most of the new material in those languages is, due to the limited time to do so and increased volume of material, a significant challenge. The daily lessons created during the pandemic have not been provided in Gaelic, whereas the Welsh team has put significant additional effort towards providing (some of) this content in Welsh.

## Monitoring success

Bitesize monitors a number of measures for success:

- Reach of the platform, time spent on it and frequency of use are key indicators. Most of these indicators have shown significant increases, but whether the continued usage will be maintained during the crisis is a question that is closely examined.
- The audience reach team focuses on teachers and parents, and uses qualitative and quantitative surveys that generate ratings for specific elements or for the entire platform, and gets feedback on how they can be improved.
- There is monitoring of social media, email feedback and a survey on the website through which comments or suggestions can be provided.

The platform was already popular before COVID-19, and has the ability to improve and differentiate learning support. It could particularly be valuable to students for whom non-traditional learning styles work better, SEND students and students who do not normally have access to (paid) learning support. Moreover, the solution is, beyond the initial investment, relatively cost-effective over time, given that materials can be used over multiple years. This, in part, is a product of being a BBC-led initiative, as a public broadcaster already possesses much of the infrastructure, which makes the cost for producing the materials more marginal than it would be otherwise.

## Adaptability to new contexts

The BBC Bitesize model should be scalable to international contexts, although the development period might stretch beyond the lockdown periods. Supporting learning through a free online platform that allows students to complement learning done at school seems valuable for personalisation and equity, both in socio-economic terms, for SEND students, and by providing platforms for role models to students with minority backgrounds. Yet, on the whole, at this point, Bitesize is a platform with strong specificities: it is well-established and pre-existed the COVID-19 outbreak, with already significant usage, and is run by the public broadcasting service. In this sense, it seems that an initiative at this scale is hard to replicate during the crisis. Moreover, as discussed before, the wide coverage implies that it is at or very nearly at scale already in the United Kingdom.

Importantly, the way in which Bitesize is utilised now will not be sustained, given that for-profit companies are providing materials for free, and that – as schools will reopen – the daily lessons will be outside of the scope of the platform again. However, there could be a role for the platform in its expanded format during a potentially prolonged need for virtual or blended learning into the next academic year. Moreover, it could serve as a model through its ability to reach underprivileged students, and play a role in increasing diversity and integration. The "Teacher Talks" and "Bitesize Careers & Support" also allow for visibility of different perspectives, might help popularise particular careers, or the choice for particular careers by certain target groups of students, and so forth.

### Box 43.1. Key points to keep in mind for a successful adaptation

1. Involve teachers, education consultants and other experts to develop daily lessons and other educational resources (e.g. the Teacher Talks) tailored to support online teaching of the (national) curriculum, preferably in different forms (videos, games, etc.). It is important to engage enough people to ensure coverage across all courses, age groups, regular lessons and extra-curricular matters.
2. Involve the national broadcast service in the development of the resource given it has the ability to reach national coverage easily across different mediums, and is a trusted source of information to most citizens. Consider giving them the lead over resource curation and/or co-ordination, or choose another institution – know-how of pedagogy and education policy is key.
3. Develop a platform that can support large-scale engagement, and a good design so that resources are easy to find for families and teachers.
4. Resources need to be provided with subtitles and sufficient audiovisual content to ensure accessibility for students with special education needs and disabilities.
5. Ensure that low-income students can access the resources by providing free access to the platform and devote part of the efforts to providing them with the technology infrastructure and devices needed to use the content.
6. Propose daily schedules and regular content that balances key subjects with the rest of the curriculum, as well as varying mediums of communication and platforms to host content on. Moreover, it is key to supply tips on how to use the resources and be productive during learning time while in lockdown.
7. Support parents with guides and toolkits to support learning, both to structure the "school day", to support students with special educational needs and disabilities, and to guide non-academic aspects relevant to the well-being and learning process of their children.
8. Engage celebrities and public figures in the initiative: make them work with teachers and present content in engaging ways, and match them along their strengths to support learning for each respective subject.

## Acknowledgements

Thank you to Oonagh Jaquest, Editor BBC Bitesize, BBC Education.

# 44 United States: Central Falls public schools

Sergio Paez, Director of English Language Learning, Central Falls District

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: governmental (public school district)
Website: https://www.cfschools.net

## General description

Central Falls is a small urban school district located ten minutes from Providence, Rhode Island, in the United States. Historically an immigrant community, the Central Falls public schools serve about 2 900 students, 82% of whom speak a language other than English at home, the majority Spanish speakers. Almost half (48%) of enrolled students from pre-school until the last year of high school are English language learners. Moreover, the vast majority of students are eligible for the free and reduced National School Lunch Program, which is an entitlement programme in the United States designed to support nutrition for all children.

After the Governor of the state of Rhode Island closed schools on 18 March 2020, ensuring education continuity involved overcoming several challenges, including: language barriers, need for special education services, lack of technology and other resources at home, and lack of peer learning and direct teaching interaction. In addition to those academic barriers, family support is limited. Students also faced significant social and emotional needs. Aside from the intrinsic academic challenges, additional challenges related to living in poverty were factored in, such as lack of food, shelter and safety, which significantly contribute to the risk of falling behind academically during school closures.

Thanks to a determined and collaborative leadership, and support from the city government, the district was able to implement a strategy for online learning within about ten days of school closures. The programme has successfully engaged a majority of the low-income students within the district and keeps growing. The solution includes distributing digital devices, and a strong support policy for families through communicating in their language; providing a compiled list of educational resources to teachers and families, and training teachers to use the learning resources; and arranging to provide food to families.

## Main problems addressed

When the city of Central Falls decided to close schools, the school district leaders' main priority was to prevent the already existing academic gaps among students from increasing. Many of the students arrived in the Central Falls district already with significant academic gaps and unmet social and emotional needs. Trying to meet their needs represented the biggest challenge for the district.

First, the district leadership focused on procuring devices for every household in the district. But ensuring that each family had at least one computer was only part of the issue. Making sure that the families could connect and learn how to use these resources was another. Families faced not only a lack of financial resources to pay for the cable services, but it was difficult for them to learn how to use the hotspots quickly, which would allow them to connect to the Internet and access the online resources.

It took at least three weeks to distribute all of the equipment. The district initially provided printed materials and other resources to make sure students had an option in case families could not connect to the Internet. Six weeks following school closures, some families still had trouble with the technology or did not have the skills to use it. It appeared that a small number of families preferred printed materials to the digital distance-learning platform. As a result, the district is working on continuing to provide those families with printed materials from which they can learn without direct guidance from teachers or classmates.

After ensuring that students were equipped with the appropriate technology and were able to connect to the Internet, the second priority was to maintain student engagement. A priority for educators in the district is to support families so they can support their children. A big hurdle in this respect is teaching them to navigate distance learning, which is the first time for many of them, in a language they do not often understand.

The third priority was to compile a list of online sites and resources that teachers could use, such as distance-learning guidelines for multilingual learners. Given the characteristics of the population, these resources had to be multilingual and use a multi-tiered approach to address the needs of every student. For instance, the resources that were adopted included sites in Spanish to support families who spoke that language and had limited proficiency in English so they could be more directly involved in supporting their children's learning. One example is this full Spanish curriculum for learners over 15 provided by Mexico's National Institute for Adult Education.

## Mobilising and developing resources

To procure devices for all students and ensure that they could connect to the Internet, the district created a plan to distribute laptops and Chromebooks to each household. This process took time to research and then to distribute all of the materials needed to the identified families. The district's technology department prepared an inventory of all the available computers in the district and who was assigned to them. It also sent staff to each of the buildings on school campuses to search for more available laptops and Chromebooks. A list was then generated to provide at least one computer per household. It soon became clear that the district was short of equipment and additional computers and laptops needed to be purchased in order to provide each family with technology. As the district's budget could not cover all of the cost, the

district leadership requested additional support from the city. The district arranged to distribute computers at one of the schools twice a week and offer technical assistance to help parents resolve their technical problems.

It was essential to identify multiple online educational resources that were reliable and useful to support teachers teaching on line. The district leadership discovered an over-abundance of online resources. The challenge was to evaluate what was relevant for the district. They assigned a team that included directors, central office staff, teachers, principals and other specialists to assess the appropriateness and quality of the sites and resources available. Teachers have also been collaborating, sharing websites that they think are the most appropriate for students. In particular, they look at multilingual sites and multi-tier components to address different grade levels and language proficiency needs.

The whole process has mobilised all the human resources in the district: the technology team and two employees tracked and tallied all resources, and worked with central office staff (four to six staff members) to map out a distribution plan to ensure that every house was receiving the resources needed. The superintendent, the assistant superintendent, the school principals and the directors met daily in the beginning to review plans and ensure alignment and co-ordination. These meetings have continued after the initial stage, but have become less frequent (two to three times a week). At the school level, principals are leading the curriculum implementation and the co-ordination of grade-appropriate standards and schedules, including frequent meetings with all teachers and support staff to align support and co-ordinate implementation.

## Fostering effective use and learning

After ensuring everyone received their devices, the district provided appropriate professional development to support teachers. They created Google classrooms for teachers to share resources and support and learn from each other. They also engaged distance-learning consultants to provide some research-based guidance and support. The experience that staff are gaining teaching on line may influence their teaching after the pandemic.

To support families, the district organised multiple family meetings to address their questions, bringing together families, students and teachers. Over time, the district has increased its focus on academic learning to balance it out with its focus on social and emotional learning. As a way to support students (and families) to focus on their learning engagement, the district developed an engagement rubric (Box 44.1).

### Box 44.1. Engagement rubric (supporting students in their learning engagement)

1. Made contact with teacher (at least once a week).
2. Actively engaged in distance-learning activity.
3. Produced evidence of work.
4. Completed assignments for class.
5. Participated in reading challenge.

It also became essential to establish a different relationship with parents and families. Connecting students with resources and staff support is not enough; students also require the support of their parents, siblings, uncles and/or whoever is at home. Communicating with families using trusted school staff was key. The traditional phone call with a voice message, a flyer or a letter was not sufficient to communicate effectively with all families. The district relied on home-school liaisons to convey the message and to point parents in the right direction. The main way to communicate announcements was through Facebook and the district's

website. The district instructed parents to check those platforms frequently for announcements. A team also contacts families, carefully recording phone calls, communicating via Class DoJo, Facebook messages and conversations. The objective is to guide parents through the distance-learning protocols and make sure every household has full access to online learning.

Finally, to address the severe needs of some families for food and nutrition, a crucial prerequisite to learning, the district organised meal distributions for families twice a week where they can pick up enough free food until the next distribution. District leaders understand that not only students, but also their families, are in need of food during the crisis.

## Implementation challenges

As mentioned above, a key implementation challenge was related to technology equipment, connectivity and IT skills. Four other implementation challenges are noteworthy: 1) dealing with teacher unions; 2) balancing academic, and social and emotional needs; 3) communicating with non-English-speaking families; and 4) keeping students engaged with learning.

The delivery of school curriculum on line made some staff positions redundant or unnecessary. For example, substitutes, cafeterias workers, bus drivers and other positions needed to be modified or changed to meet the new demands. This was a challenge for multiple staff and their union representatives, for whom the priority was to secure continuity of employment. District leaders made a commitment to keep as many staff employed as possible. They created new schedules, routines and practices for hundreds of employees. They also maintained open communication with state and union leaders to make sure everyone worked together to support every employee. Under the guidelines of the state Department of Education, teachers received additional professional development days to support them in teaching remotely and in implementing the district's strategy.

Finding a balance between academic, and social and emotional needs was another challenge. Not only did students and their families require social and emotional support, but so did every staff member in the district. District leaders needed to be flexible regarding the job situation and at the same time provide social, emotional and professional support to staff, students and families. They created a collaborative environment and pushed each other to maintain high expectations for the district, for its students and their families. Staff communicated daily to co-ordinate how to move forward in every aspect of the organisation.

Reaching all families who speak a different language at home was another challenge. The Director of English Language Learning co-ordinated the academic and language support that teaching assistants would need to provide to monolingual teachers. School principals also created schedules and structures to make sure that multilingual staff was available to other staff when reaching out to families. The district is also compiling a list of online learning resources that meet the needs of multilingual learners and all students: it aims to identify appropriate sites that are multilingual and multi-tiered; rank the best sites; and gradually disregard or eliminate sites that are considered less appropriate given the students' context.

Finally, teachers and all the staff made a significant effort to motivate students to stay engaged with learning. As mentioned above, they developed an engagement rubric for students and regularly communicated with families to ensure that students remain on task, but this remains a challenge. Realistically, this is an experimental process and the real impact this crisis will have on students' academic experience is still unknown. This is even truer for at-risk communities that absolutely need optimum conditions to succeed.

## Monitoring success

The fact that many students are able to learn on line is a great success story already. District leaders are confident that within 2-3 months of school closures, 80-90% of students in the district will be able to engage with distance learning. District leaders have set specific targets to make sure that 100% of students are brought to the level of engagement necessary for actual learning to happen.

Teachers are doing their best to support their students. The challenge is to offer them the necessary support to do their job effectively. The teachers demonstrated great professionalism in engaging with this teaching method, for which most were not prepared. One indicator of success is that not a single teacher refused to work during this time. They teamed up and collaborated to meet the children's needs.

The district leaders and educators accepted the fact that when in the middle of a crisis, they need to be flexible towards how ready the students and families are to learn.

## Adaptability to new contexts

This case in a district in the United States is in some ways similar to many other communities across the globe that experience a shortage of resources and a challenging poverty context. The district managed to pull resources together to provide teachers and students with the basic elements to adjust to distance learning.

The ability to mobilise resources makes the difference in this context, which may be different in lower income countries. However, this experience in the United States may be of interest to many other world communities, because the district serves a very poor community with limited resources. The opportunity gap will most likely be exacerbated during this time, and recovery programmes to catch up academically when the crisis is finally over are already being prepared.

At this stage, organising distance learning does not appear to be desirable or optimal for the concerned communities, but lessons can be drawn, especially for teacher professional development and collaboration after the crisis.

### Box 44.2. Key points to keep in mind for a successful adaptation

1. Communicate challenges effectively to all stakeholders to make sure everyone is involved in the decision-making process.
2. Allow experts to provide feedback on the needs of each school. Experts are curriculum leaders, special education directors, language directors, teachers, principals, etc.
3. Maximise human capital to reach everyone in the district. Home-school liaisons, multilingual staff, teachers, leaders and anyone else who has a relationship with parents are key to share a clear vision to manage the initial stages of the response to the pandemic.
4. Connect with community organisations like the health department, mayor's office, city council and other community leaders to collaborate in a coherent way and to make sure communication flows to all stakeholders, in particular students and their families.
5. Continue to send messages of support and understanding ("we are in this together and we are going to succeed"). Providing positive support to teachers, students, community, leaders and other stakeholders allows for a positive dynamic progression towards better implementation of high-quality education. Every day is a new challenge, but it needs to be confronted, as a team, allowing for growth and supporting creative decisions every step of the way.
6. Continue to create opportunities to grow. The state has allocated additional professional development days to support teachers during this process.
7. Continue to look at protocols and procedures to identify future potential needs, like summer schools, additional distance-learning opportunities and other opportunities for students to catch up and make up for the academic gaps created by the pandemic.

# 45 United States: George and Veronica Phalen Leadership Academies

Earl Martin Phalen, CEO and Founder of PLA

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: non-governmental
Website: https://www.phalenacademies.org/GVPLA

## General description

The George and Veronica Phalen Leadership Academies ("PLA") is a non-profit organisation, founded in 2013. PLA started as a network of charter schools, but evolved to include public schools in a turnaround model (school improvement model). In its short seven-year history, PLA has transformed 7 schools rated as "failing" by local accountability standards into "excellent" schools; the network has grown to 22 schools across 5 diverse states – Indiana, Michigan, Florida, Ohio and Texas – serving nearly 10 000 children and is the fastest growing black-led school turnaround network. Ninety-three per cent of students (called "scholars") are black or Latino, and 89% of them live in poverty.

The school leadership team followed scientists' advice closely in order to anticipate future scenarios. They concluded from learning about the various models predicting the evolution of the COVID-19 pandemic that schools would most likely be closed for the remainder of the school year, the summer months and possibly would not open next fall. Recognising the severity of the crisis early on enabled them to focus wholeheartedly on a plan that would maximise learning opportunities for children through alternative delivery methods.

The strategy for educational continuity during the period of physical distancing rests on four pillars: 1) nutrition; 2) emotional support; 3) academic learning; and 4) staff's needs for support.

1. ***Nutrition:*** 93% of the PLA sites had up and running "grab and go" locations for families to get food within the first week of schools shutting down.
2. ***Emotional support:*** Each school in the network developed a plan to reach out to every student so that they remained connected to their teachers – even though few of the 10 000 students initially had devices and connectivity. Teachers hold virtual pizza parties, virtual "dance offs" and have simply gotten in touch with each of the scholars and their family through bi-weekly one-on-one calls, among other initiatives.
3. ***Academic learning:*** PLA developed a three-part plan to ensure that students continued to have high-level, quality touchpoints with the content that they were learning before the crisis. The plan was rolled out in phases, which allowed time to secure the necessary infrastructure and gain more of an understanding of what the duration period of mandated social distancing would look like.
    - Phase I: All scholars were distributed three to four weeks' worth of paper-based, standards-aligned learning materials packets with the same "grab and go" method as for nutrition. Staff made home visits to families for the few remaining students who did not take their materials at school.
    - Phase II: Scholars have access to PLA's newly developed e-learning website. As scholars worked through Phase I, the PLA leadership team worked vigorously to ideate, create and launch an e-learning website that featured over 400 short video lessons. Each video comes with worksheets that students can download and work through while watching the videos. The e-learning site serves all students from kindergarten through 12th grade.
    - Phase III (within two months of school building closures): Scholars will be given one-to-one devices with connectivity, and academic instruction will be provided virtually by their teachers. Students will participate in real time in virtual lessons; they will have access to instruction in small groups, and will submit assignments and receive feedback and grades virtually. Devices will be procured through: reallocation of Title I funds (a grant from the federal government to schools serving students from low-income families); financial donations from foundations, corporations and individuals; and donations of devices by corporate partners.
4. ***Support to staff:*** Staff were trained to teach on line and were fully engaged in all the other aspects of the strategic plan. Staff participated in ten hours of professional development to support the transition to e-learning. Ongoing training is also available virtually. PLA also has an online training platform called PLA University. Training models are available for staff to access at any time. A helpdesk was set up to help families and students use the technology and lessen the burden on staff for some aspects of the e-learning journey.

## Main problems addressed

The PLA strategy had to address several types of problems given that the communities serviced by PLA include:

- Limited personal devices: Most of children do not have access to devices that could help deliver e-learning (iPads or Chromebooks).
- Limited connectivity: Most families do not have an Internet connection at home.
- Difficult studying conditions: Most scholars do not have "a quiet place" to go to focus during e-learning instruction.
- Limited teacher self-efficacy with online teaching: Most teachers are not comfortable with delivering virtual instruction.

- Unfamiliarity with online teaching features: There is little capacity to provide wraparound support for all the added technological features implemented.
- Family grievance support: Black and low-income communities are experiencing a disproportionate death toll in the midst of the COVID-19 crisis in the United States, so helping families who are grieving due to the loss of a family member has also become a priority.
- Parental stress: Many parents are dealing with increased stress – many have lost their job early in the crisis and are now thrown into the world of providing instructional support to their children. Many are uncomfortable in their role in a virtual learning environment.
- Support for younger students: Delivering e-learning to younger scholars (five- and six-year-olds) is an added challenge, especially as they typically do not have the support at home.
- Measuring success: Determining the right way to monitor progress and measure success in the new implemented model: what is the "right" and new measure of success?

## Mobilising and developing resources

PLA relies on several existing resources to implement this alternative "education continuity" plan.

At the top of the list was a dedicated team that is deeply committed to caring for and supporting PLA children and their families during the transition.

To ensure food security, PLA normally relies on a US federal nutrition programme designed to serve the children that PLA serves. This programme continued during the physical distancing period and eased some restrictions, because of a government decision that enabled PLA to care for families, not just the children who attend the school.

To provide social and emotional support to children and families, schools relied on the availability of mobile phones, which most of the students (of a certain age) in the schools have. Using this communication method, teachers were able to stay connected via text messages and FaceTime. The teachers themselves used Google to call their students to maintain privacy on their personal phone numbers.

## Fostering effective use and learning

The very first step in the strategy of ensuring educational continuity was providing paper-based packets to the scholars. It was challenging, but implemented successfully. And even though it is positive to give three to four weeks' worth of learning packets to children, paper-based packets do not replace instruction. Some children do not engage with learning. Even those who do will do so without opportunities for correction and feedback, so they may complete the work but do all of it wrong. This first step was necessary to buy time to address the challenge while ensuring students continued to have learning opportunities in the meantime.

PLA uses an "assets-based" approach to serving children, looking for strengths in students and their communities rather than shortfalls. This same philosophy guided the development of the strategy for educational continuity.

- Technology: While many PLA children initially had no access to iPads or Chromebooks, most have a smartphone. Thus, the e-learning platform was designed to work on any device and to be Mifi enabled. Within two weeks, the leadership team raised funds to purchase 32% of the PLA technology needs and reallocated some of its funds towards technology. Funds were raised from dedicated PLA supporters and from key connections at some of the largest technology companies, such as Microsoft. PLA negotiated with local Internet providers so that eligible PLA families could access free services for 90 days – and worked with families who had a past balance to secure donations to help pay them off; in some cases past due fees were waived.

- Academic learning: PLA's new e-learning site includes 12-minute videos of excellent PLA teachers from around the network delivering instruction. Over 400 direct instruction videos were developed: 30 for English language arts and 30 for maths for every grade. Older scholars also have access to virtual classes. The learning resources were all created in less than three weeks by the PLA academic team and teachers.
- Studying conditions: PLA provided headphones to all scholars to help them focus on their lesson and ignore distractions, such as noise from multiple siblings now that everyone is home together and/or very little available quiet space dedicated to learning.
- Student engagement through celebrity support: PLA engaged well-known stars and leaders, including the Indianapolis Colt's Super Bowl player Marlin Jackson, Heisman Trophy winner Ricky Williams and Indianapolis Pacers basketball star Victor Oladipo. These celebrities and other leaders (i.e. black and Latino judges, doctors, scientists, business leaders) deliver positive messages during homeroom, encouraging children to continue to work hard, expressing how proud they are of them and encouraging them to focus on their education. This appears to be extremely motivating for the scholars.
- Enrichment. The e-learning site also includes numerous enrichment opportunities, which is highly appreciated by scholars and families: arts, physical education and virtual field trips. New fun enrichment clubs are being developed and offered daily.
- Teacher training. A suite of training videos was developed for PLA teachers to access at any time, and PLA's academic team provided real-time "in person" virtual training sessions for all staff. PLA developed a "mentoring" programme that supports peer-to-peer assistance in navigating this new delivery system. It also purchased the Blackboard platform, which is used in colleges and universities across the United States.
- Helpdesk. PLA has set up a 40-person helpdesk team trained to support students and parents experiencing challenges with e-learning. The team has access to step-by-step guides to support them in addressing parents' concerns. This was made possible thanks to the full funding the schools continue to receive and the fact that some positions are no longer necessary, as students do not come to school.
- Paid teaching assistant role: The youngest scholars need the help of an adult to access and understand their assignments. To engage their parents, PLA offers a paid virtual teaching assistant role to parents, offering those who lost their job or are experiencing additional financial stress during the crisis some additional financial security while enabling them to focus on supporting their child.
- Family grievance support: PLA has partnered with several churches, social work agencies, family services agencies and counsellors to ensure that they appropriately support children, families and staff.

## Monitoring success

The PLA team asked themselves: what is the "right" and new measure of success? Their answer was: "progress, not perfection" and "commitment to share challenges and setbacks honestly", so that they can address them and become stronger in their efforts to serve their scholars.

The first measure of success is the high percentage of families that have participated in the weekly "grab and go" meal programme. Since its inception, over 93% of PLA families have used this service. PLA has thus provided opportunities for students to continue receiving nutritious meals.

A second measure of success is that PLA children and families feel loved and maintain a sense of connectedness to PLA. This is evident by the number of touchpoints that teachers record having had with

each of their students on a weekly basis: 83% of PLA scholars have spoken with their teachers at least twice a week, and 91% have connected with their teacher or administrator at least once a week.

Traffic to the new PLA e-learning platform increased by 1 000% between the first week and the second week, and the percentage of student engagement more than doubled. Some of the ways engagement is measured include daily logins, assignment completion rates, number of student questions and content mastery.

## Adaptability to new contexts

The essential elements of the strategy followed by PLA are transferable across certain contexts. They will work well in high-income countries for students from lower socio-economic backgrounds, and in some places in low- and middle-income countries. They require a context where IT infrastructure and devices are affordable to most, if not lower income families. It will work best in situations where teaching staff and leadership are extremely competent and dedicated in normal times, and willing to continue to fulfil their mission during times of crisis.

### Box 45.1. Key points to keep in mind for a successful adaptation

1. Build on your existing values and mission, and build your strategy and actions based on them.
2. Lead by example at all levels of staff, with a highly involved and collaborative leadership that engages a team in a “roll up your sleeves” attitude.
3. Design a strategic plan with a clear set of priorities and a sequence of several steps that allow flexibility to respond to additional information about the duration of the physical isolation.
4. Promote a mindset to think outside the box in looking for ways to build an alternative delivery chain to implement the plan’s priorities.
5. Be able to communicate rapidly across all stakeholders in the organisation to quickly obtain feedback and use it to adjust implementation.
6. Establish solid partnerships with federal programmes and local authorities to have the flexibility to create new delivery mechanisms (for example, flexibility in the rules used to fund school meals to include families in addition to students).
7. Invite national and local celebrities to make learning more engaging for students, and provide social and emotional support.
8. Support families to help their children, including through monetary rewards.
9. Provide robust online training for staff and set up a helpdesk for families and staff to support e-learning.

# 46 United States: Wide Open School

Stéphan Vincent-Lancrin, Senior Analyst, OECD

Type of intervention: non-governmental
Website: www.wideopenschool.org

## General description

Wide Open School is a web platform co-ordinated by a not-for-profit private organisation, Common Sense Media, which curates and makes available online educational resources provided by a partnership of 25 organisations willing to contribute resources free of charge during the COVID-19 crisis. The platform was set up in two weeks. It offers resources for educators and families for all grades, from pre-school to upper secondary education. Part of those resources aim to develop disciplinary technical skills, but also creativity, critical thinking and social-emotional skills, while others just support family and informal learning activities. Beyond offering access to curated resources, the platform also suggests a daily schedule to help students and families have a good balance of activities, provides live events and classes delivered by artists, as well as tips and guidelines for teachers to teach on line and navigate online resources.

The platform also addresses IT infrastructure issues by partnering with major mobile and Internet provider companies and embedding software such as videoconference solutions and educational suites. It also facilitates access to services to help lower income families get devices and better broadband, switch to mobile solutions, as well as other practical information, such as where to get a free lunch in their district.

## Main problems addressed

The initiative's general objective is to ensure education continuity with an emphasis on family schedule and a supplementary approach to e-learning with school support during the COVID crisis.

As parents and children spend a lot of time together during the lockdown, how can families be supported to guide their school-age children's learning? How can teachers also be supported during this time? The initiative assumes that most students will receive guidance from their teachers, and is thus not a home-schooling initiative. This supplementary approach to school and teacher guidance materialises in a broad diversity of learning experiences of different length and depth.

A second objective is to support students from lower socio-economic backgrounds and students with special needs, both in terms of infrastructure (getting appropriate connectivity and digital devices) and of learning resources.

This combination of infrastructure dimensions and of curated resources aimed at families and educators marks the originality of the initiative.

## Mobilising and developing resources

The initiative draws on existing online educational resources that the participating organisations make available free of charge, from publishers through to museums. All resources made available must remain free of charge for the entire duration of the platform, but organisations select which of their resources they are willing to share for this initiative. Some of the participating organisations are public organisations that share their resources free of charge anyway (museums, science societies, etc.).

Beyond a collective action among education not-for-profit and for-profit organisations, the main new features of the initiative are the web platform and the curation of the resources so that they are user-friendly. Some new materials were (and will be) developed to make the learning experiences more engaging, and incentivise users to continue to engage with the shared learning materials. The platform includes, for example, videos about exercising in lockdown that involve a physical education teacher and an NBA basketball player, tips from teachers for other teachers, as well as live events (conferences, lectures, etc.), some of which are presented by star journalists well-known by the US audience. The platform also offers connection to digital communities of practice for teachers. The engagement of teachers and of US celebrities in these new materials is one of its original features.

## Fostering effective use and learning

Beyond being a hub of online educational resources, the platform proposes several functionalities to support families and teachers in using them and potentially learning more.

As far as families are concerned, use is supported by:

- Organising the resources by discipline and age group, and proposing many extra-curricular learning expeditions that can be recommended by teachers or used independently.
- Suggesting daily schedules highlighting learning activities using some of the platform's resources (dividing the day into four periods: morning, mid-day, afternoon, evening), including offline and off-screen activities.
- Providing parents with guidance to "get started learning at home": information and connection for lower income parents to have IT connectivity and devices; guidance about social-emotional well-being in a time of anxiety; information about COVID-19 for different ages and purposes; etc.

Teachers receive similar support and are expected to engage by using or advising on some of the learning experiences proposed to their students and families. The platform provides teachers with specific support by:

- providing them with demos, tutorials and “how to guidelines” to use “virtual classroom” tools in different ways and adapt their teaching to the tools
- professional development provided by teacher unions to other teachers, sometimes with certification
- free digital learning plans for young students and their families.

## Implementation challenges

The main implementation challenge was to build a partnership that would be trusted by families and teachers, the two target groups of the initiative. In this case, the resource curator and co-ordinator Common Sense Media made this possible. First, it is a not-for-profit organisation. Second, many US families already know and trust this organisation, which specialises in providing them with age-based media reviews (books, movies, software, toys, etc.). Curating age-based educational resources fit in its usual mission – albeit in a somewhat expanded way.

Bringing together several public institutions (Smithsonian, National Public Radio), famous non-profits (National Geographic), a teacher union (American Federation of Teachers) alongside digital companies (e.g. Apple, Google, YouTube, Zoom) and education companies (e.g. Amplify, Khan Academy, Scholastic, Sesame Workshop) was important to the success, branding and visibility of the initiative. Involving teachers and organisations working on innovation in traditional school districts contributed to building trust. Having a party with no vested interest in the provided resources also gives more incentives to companies and organisations to contribute and accept external curation.

A second implementation challenge was to do something quickly and relatively cheap with a sustainability until at least the end of the crisis. It was important to bring in enough materials for students of different ages at the stage of the launch, hence the importance of joining forces and of professional relations between partners. But as an important part of the workload lies in resource curation, which takes time, when there are many resources available, the way to speed up the process was to start by categorising the resources into broad age categories (primary, secondary) with only the suggested daily schedules having smaller age bands. This will be refined over time. The technology platform was also launched using existing and affordable technology, with the idea of improving it over time.

The last important implementation challenge lay in budget and legal matters. While it might be useful beyond the crisis, such an initiative only happened because of the willingness to contribute triggered by the dramatic circumstances. Participating institutions can be said to have an interest in joining in terms of image and marketing of their resources, although they do not necessarily have an interest in staying for a long time.

Legal issues (and slow speed of negotiations) were largely bypassed by directing users to the contributors’ websites – and thus out of the platform. The platform has a disclaimer that, “The provided resources include links to external websites or applications that are governed by their own privacy policies or information collection practices, which may be substantially different from Common Sense Media. We encourage you to review the privacy policies and information collection practices of any external websites and apps before use with children or students”.

Funding is mainly needed for the curation of the resources and the development of the platform. Some of the participating organisations contribute resources, sometimes devices or special discounts, which all have a cost. The initial developments were also carried out *pro bono* by some of the partners. Contributing resources can be done as part of companies’ “corporate responsibility”, probably with positive branding and marketing outcomes for them. All this is a sunk cost though. The development and curation of the platform needs some additional funding. In a country like the United States, where there is a vibrant

philanthropic sector, large foundations with a focus on educational technology and innovation will cover development and curation costs.

## Monitoring success

As of April 2020, the platform was powered by 30 organisations or companies (against 25 at its launch), and seems to be attracting more partners. In terms of visitors, it had recorded 640 000 unique visitors three weeks after its launch. Given that the platform is fully open (no sign-in) and directs users to the external sites of contributing and partner organisations, it is difficult at this stage to monitor how different users are using the different resources.

## Adaptability to new contexts

This initiative can easily be transposed in any context where an online solution makes sense, where there is a vibrant education industry available and enough resources to be shared. The initiative could easily be international where language links countries and markets. The Wide Open School web platform itself plans to be "open source" and could thus be adapted for other international contexts and purposes.

### Box 46.1. Key points to keep in mind for a successful adaptation

1. Involve educational technology companies, education publishers, museums, cultural institutions and sports institutions and ask them to provide some educational resources free of charge for the whole duration of the COVID crisis (or for, say, 18 months). Make sure that those raising their hands provide enough resources to cover all school-age groups and all domains of learning, as well as parents and teachers.
2. Give the lead of the platform (resource curation and co-ordination) to a not-for-profit organisation that is trusted by families and teachers – involve teacher unions, relevant associations and foundations if possible.
3. Develop a platform quickly with cheap existing software and tools, and ensure the resources are easy to find for families and teachers. Start relatively small and improve functionalities as you go.
4. As curation has to be done quickly, start by categorising the resources into broad age bands, and refine and add as you go.
5. Ensure that low-income and special needs students can access the resources in their contexts and devote part of the efforts to providing them with technology infrastructure, but also other services they usually get (e.g. free meals, tutoring, etc.).
6. Propose regularly an age-based day schedule with a good balance of different resources, and organise live events to make the learning experience and the platform more interesting to families and teachers – as well as tips on how to use the resources and just use the family time productively during the lockdown.
7. Provide teachers with tools that they can use in their regular teaching, including tools for virtual classrooms, in addition to resources they can recommend. Provide dedicated tools and collaborative channels to teachers.
8. As you do not have time to deal with all legal issues in a short period of time, let providers keep their terms and conditions and inform families and teachers clearly about the terms of data privacy and protection.

## Acknowledgements

Thank you to Larry Berger, CEO of Amplify, who provided all the information on context and plans.

# 47 United States and Ukraine: Virtual Edcamps

Allison Modica, Edcamp Community Program Director, Digital Promise

Type of intervention: non-governmental (digital promise)
Website: www.edcamp.org | www.edcamp.org.ua

## General description

The Edcamp model is built on the idea that teachers can learn from and inspire one another to enhance their professional skills with the goal of improving student outcomes. Edcamps are a participatory professional development event organised by teacher volunteers in which educators lead their own learning experiences. Edcamps adopt the "unconference" model where sessions are organised, structured and led by the people attending the event. Edcamps facilitate peer-to-peer learning among teachers, and as teachers are on the frontline of solving the new challenges of emergency distance learning as well as planning for ongoing changes to teaching and learning as a result of the COVID-19 pandemic, best practices can spread more quickly if teachers are given opportunities to share them with each other.

The Edcamp movement originated in 2010 with an in-person event in the United States organised by and for teachers. Ten years later, more than 500 Edcamps occur each year all around the world. Anyone can organise an Edcamp. For example, in the United States, Digital Promise, a US-based non-governmental organisation supports the Edcamp Community.

Edcamps are cost-effective, scalable and easily replicable. Organised and attended by educators in 43 countries around the world, Edcamps' value comes from teachers collaborating and learning together through conversations and shared experiences, rather than one-to-many professional development presentations. Research has found that teachers who choose all or most of their professional learning

opportunities are more than twice as satisfied with professional development as those with fewer options (Bill and Melinda Gates Foundation, 2015[1]).

In response to the COVID-19 pandemic, many Edcamps have been hosted entirely on line to support the new and urgent needs of educators. Since March 2020, dozens of online Edcamps have supported tens of thousands of teachers to learn about and share their experiences with teaching remotely during the COVID-19 crisis. Edcamp Ukraine successfully hosted the national online Edcamp, "High Five for Education" on 13-20 April 2020. In the United States, Digital Promise hosted a series of online Edcamps from April to June 2020, collectively titled "Edcamp: Powerful Learning at Home".

## Main problems addressed

***Supporting teachers.*** Since the COVID-19 pandemic forced school closures, educators around the world have been attempting to provide continued learning for students by teaching remotely. In addition to the challenges of no longer having the structure of a classroom setting and face-to-face interactions with students and colleagues, teachers must now rely much more on technology to engage students and provide remote classroom learning. For some teachers, this transition has been manageable because of their prior experiences teaching with technology. However, many teachers are struggling with learning new technology tools, engaging students remotely, collaborating with overwhelmed parents, maintaining professional learning networks, and addressing issues of equity and access for their students.

***Rapid sharing of ideas and techniques for distance learning.*** Emergency distance learning is a challenge for which there are no existing best practices. The challenges and implementation models for this unique situation are very different from planned models of online or blended learning, and therefore teachers have been in a position to lead in developing for themselves the new techniques to make this difficult learning experience as successful as possible. Edcamps are different from the way much professional learning is designed; that is, by outside "experts" observing, documenting, reporting and designing training. Instead, rapidly organised online Edcamps provide a venue for new ideas and techniques to spread from teacher to teacher, at a speed necessary to address the rapid changes in teaching and learning taking place around the world.

***Valuing teacher knowledge and giving teachers control of their professional development.*** Face-to-face Edcamps are already a form of teacher professional development that is cost-effective, scalable and replicable in support of teachers' learning and growth. The intention is that attendees connect with like-minded peers and are all treated as professionals who have something valuable to contribute to the conversation – from pre-service teachers who are just learning their skills to veteran educators who have wrestled with persistent challenges for decades. Adapting the Edcamp model to a virtual format makes it even more cost-efficient, while providing educators with most of the continued benefits of collaborative participant-driven, teacher-to-teacher learning and networking. The aim remains to enhance pedagogical skills and improve practice and to provide teachers with more control over their professional learning to increase job satisfaction, retention and engagement in leadership opportunities.

## Mobilising and developing resources

At the beginning of the COVID-19 crisis, many Edcamp organisers were forced to postpone and cancel their events. However, as the scale of the crisis became more apparent, organisers began to explore the possibility of hosting Edcamps on line. The existing resources Edcamp organisers could mobilise were the Edcamp idea, as well as the network of the Edcamp Community.

New resources were developed to support the continuation of Edcamps on line.

Free guides and resources available on the Edcamp Community website were developed to implement the Edcamp model on line, based on the revision of existing resources to provide additional guidance for organisers of online Edcamps. Edcamps can be held on line using many widely available videoconferencing tools such as Zoom, Google Meet or Microsoft Teams, with careful co-ordination required to support the selection of topics for workshop sessions, align participants to the topics they choose and ensure all sessions have volunteer moderators to facilitate discussions. The "breakout room" features available on some videoconference platforms have proven particularly valuable in separating groups of teachers into smaller more manageable groups to discuss the most popular topics. A list of dates and information for virtual Edcamps has also been added to the Edcamp Community website.

To model and promote the growth of online Edcamps, US-based non-governmental organisation Digital Promise organised a series of virtual Edcamps for teachers in the United States (some teachers from outside the United States also attended) as part of its supporting role to the Edcamp Community. These virtual Edcamps were very well attended. In each of these events, the Digital Promise team tested variations on registration, organising breakout sessions within conferencing platforms and other technical implementation tactics to be used to inform the new guidance being shared with the Edcamp Community for hosting their own online Edcamps.

Edcamp Ukraine, which organises Edcamps in Ukraine, also moved quickly to implement an online Edcamp at the national level. Leveraging previous experience using the "MyOwnConference" webinar platform and the "Attendify" event app proved to be an asset, although adaptation and upscaling to a much larger audience were considerable challenges that required additional testing and increased planning for security and accessibility.

## Fostering effective use and learning

***Meeting teachers' immediate learning needs*.** Edcamps can be arranged on any topic and can be launched in a matter of only a few weeks, making this model effective for supporting immediate learning needs in an ongoing way, even in an uncertain and rapidly changing environment. The "unconference" model eases teachers' effective learning as participating teachers choose themselves what and how they would like to learn from their peers.

***Follow-up events to consolidate and improve learning*.** Beyond the event itself, follow-up events are organised to make the Edcamp learning process a professional learning journey. For example, Edcamp Ukraine's High Five for Education, a session led by Esther Wojcicki at the April 2020 conference, introduced participants to the concept of the "Three Rings of COVID-19: The Fear Zone, the Learning Zone and the Growth Zone." Throughout the five-day online Edcamp, participants moved through all three zones. Educators were encouraged to design their own learning experience through five steps of growth through the participant-driven agenda-setting session at the opening conference. These journeys and the additional learning needs they brought to the surface inspired an additional series of follow-up events (called the "Toloka" series) to maintain the teachers' motivation to further improve their attitudes and skills.

## Implementation challenges

Organising an Edcamp can produce anxiety because the model leaves so much up to the participants. Before the virtual Edcamp in Ukraine, organisers expected implementation challenges first fearing an unusually low number of participants, then – after applications rose sharply – fearing technical issues as a result of an unusually high number of participants. They successfully mitigated this risk by establishing a 24-hour support line with partners.

Another challenge concerned the computer and Internet literacy of the participating teachers, which was mitigated through detailed instructions that were sent out beforehand.

The main challenges faced in organising the US-based Edcamp were related to the limitations of videoconferencing tools. These implementation challenges and mitigation strategies are listed below:

- ***Managing numbers of participants and sessions.*** Typically, Edcamps offer participants multiple topics per session. This online Edcamp offered two sessions that each contained three to four topics. (This gives participants the choice to join two of six to eight possible session topics.) To provide enough session topics, a corresponding number of Zoom meeting rooms were needed, each hosted by a different organiser. This challenge was mitigated by lowering the number of session topics available to three per session. However, this challenge could also be mitigated by offering one topic per session if there is only one person organising the Edcamp.
- ***Facilitating multiple discussions.*** Once participants are in their video conference meeting rooms, the facilitator will place them into breakout rooms. Typically, 8-12 participants are placed in a single breakout room, and with anywhere from 100-300 participants per session, there could be more than 30 breakout rooms. With so many breakout rooms, the facilitator cannot be in all the rooms at all times, meaning participants need to drive the discussion on their own. Participants were asked to volunteer as breakout room moderators and were provided a guide on best practices for moderating virtual meetings.
- ***Recording multiple discussions.*** Due to the nature of the breakout room set up, it could not be guaranteed that notes were taken to record everything discussed in each room. Thus, public online collaborative whiteboards were created that anyone could access to share notes and resources from their discussions, centralising notes on each topic across multiple smaller discussions (tools such as Padlet, Miro, Limnu or others can be used for this).
- ***Managing the registration process.*** Successfully managing the registration process is an additional potential implementation challenge for organisers. For example, Digital Promise used the resources of an e-service called “Eventbrite” to handle registration and contact with participants using just one platform. However, participants still needed to register for a Zoom room after they registered on Eventbrite for the Edcamp. While hosting registration on Eventbrite and hosting the event on Zoom is not a perfect system, it did help communicate with participants more efficiently.

## Monitoring success

Virtual Edcamps have the potential to reach many more educators than in-person local Edcamps. In the two countries where large-scale virtual Edcamps were held, Ukraine and the United States, these events reached tens of thousands of educators. For 5 days, Edcamp Ukraine engaged over 10 000 educators across Ukraine, Armenia, Belarus, Georgia and Moldova. In the United States, Digital Promise hosted a series of online Edcamps reaching over 3 000 educators across the country. Other local Edcamp organisers have hosted at least 20 virtual Edcamps in the United States, which collectively reached approximately 4 200 educators.

Edcamp organisers seek feedback from their participants, typically in the form of post-event surveys. After Edcamp Ukraine, feedback forms returned by participants provided significant data on the success of the initiative relating to the educators’ professional development, in particular the usefulness of the content, changes in attitudes and skills, and the interactivity of the sessions were highly rated by participants. Edcamp Ukraine received positive feedback regarding the rich content of the events, the close connection to like-minded (and sometimes dissenting) people, the question and answer session with decision makers and researchers, the interactivity, the comfort of being able to learn at home, and the published recordings (more than 6 600 subscribers on YouTube).

Digital Promise's online Edcamps participant surveys indicated that teachers desired and appreciated opportunities to share common concerns and learn from one another. A participating teacher from the United States identified the value of connecting with peers in the Edcamp format, saying "Talking and asking questions of other teachers and knowing I am having some of the same problems was what I needed to be motivated to keep trying. I am not alone, and I needed help. Many of the tech programs were very helpful and the fact that the other teachers explained how they used them was very helpful. I am not as skilled in the use of tech but now I am not afraid."

## Adaptability to new contexts

***Flexible and low cost.*** The flexibility of the Edcamp model makes it available in any context. While in-person events remain restricted due to the pandemic, the online model for hosting Edcamps can be viable in any context in which teachers have access to the tools and bandwidth required for videoconferencing. Because this model relies on the accumulated skills and wisdom of teachers themselves, resources can be directed to facilitation, logistics and communication rather than paying presenters.

***Can be scaled and organised at grassroots and national levels.*** Edcamps can and do scale very quickly once implemented. The entire Edcamp movement originated with a single in-person event in the United States organised by and for teachers. Ten years later, more than 500 Edcamps occur each year all around the world. As in-person events became restricted, the pivot to online events happened quickly both in terms of the national level online Edcamps highlighted previously that took place in the United States and Ukraine, and grassroots organised online Edcamps that have also emerged, with at least 20 being hosted in the first 3 months of the crisis.

***International reach.*** The organisers in Ukraine invited participants from the Edcamp movements in five EU Eastern Partnership countries to their April 2020 event. After this event, they provided consulting support for these neighbouring Edcamp movements, particularly in Belarus. An additional event to target teacher communities in the five countries (with an inter-ministerial component) is currently being prepared. Additionally, the above-mentioned "Toloka" events ("*toloka*" being a Ukrainian term for communal work and mutual, neighbourly aid) represent the "long tail effect" of the April 2020 conference, scaling up its impact. The "Toloka" events are interactive webinars in the same style as Edcamps and take place every six weeks. The first "Toloka" event was on 1 June 2020 and attracted 6 000 participants.

As the world emerges from the COVID-19 crisis, Edcamps can be an effective and scalable way for teachers to learn from one another and the dual modalities of in-person and online events are likely to continue alongside each other.

### Box 47.1. Key points to keep in mind for a successful adaptation

1. Anyone can organise an Edcamp. It does not require a lot of money or resources. However, it requires dedication and time on part of the organisers to select a date, a location or a digital platform; create an organising team; and build an audience.
2. An online Edcamp will need organisers to consider most of the other planning steps outlined in the Organiser Handbook apart from securing a physical distance.
3. Virtual Edcamps can be a single event or spread across multiple days or weeks. Be clear about your start/end times – and time zones – to help participants plan ahead.
4. Be clear about whether your Edcamp is planned for people in your district or region or will be open to educators everywhere. Since there is no travel time or costs involved, educators from anywhere can attend a virtual Edcamp. Make your intended audience clear in the registration details and other communications such as social media, to set expectations appropriately.
5. Create a digital session board in advance and be prepared to host multiple sessions at once. Traditional in-person Edcamps begin by creating their session board together at the start of the day. But for a virtual Edcamp, topics can be collected in advance – at the point of registration, for example – by using Google forms or other software. Compile your session board in a shared document or file and list the teleconference links for each session so attendees are able to leave a session and find a different session, where needed, to maximise their learning.
6. Use breakout rooms and recruit moderators for each session. A popular structure is to bring participants together in a shared online space first for a welcome message or video, then divide into separate digital areas by topic. You can also use breakout rooms to place attendees into smaller groups, either randomly or by affinity (e.g. grade level). Recruit moderators for each session room in advance and prepare them ahead of time to assist with conversations. Consider equipping them with three to five icebreaker questions to start conversations if needed.
7. Use any teleconference software and supplement your teleconference conversation with “slow chat”. You can use any teleconference software such as Zoom or Google Hangouts to bring participants together. “Eventbrite” does, for example, offer a section for live streaming or webinar event, providing a single platform for registering and meeting with participants. Check if your preferred platform offers closed captioning, which can improve accessibility and reduce online fatigue. Supplement your teleconference conversation with “slow chat” software like Fligrid, Padlet or Jamboard so attendees can share ideas, resources and feedback.

## Acknowledgements

Thank you to Dr. Oleksandr Elkin and Elyse Gainor.

## References

Bill and Melinda Gates Foundation (2015), *Annual report 2015*, https://www.gatesfoundation.org/about/financials/annual-reports/annual-report-2015. [1]

# 48 Uruguay: Ceibal at home

María Florencia Ripani, Director, Fundación Ceibal

Type of intervention: governmental – Plan Ceibal (National Digital Education Plan)
Website: https://www.ceibal.edu.uy/es

## General description

Ceibal en casa (Ceibal at Home) was the contingency plan implemented by the Uruguayan government to mitigate the disruption to education caused by school closures across the country due to the COVID-19 pandemic. It consisted of offering digital platforms and services together with support and guidance for teachers, students and their families to allow for distance learning for primary and middle public schools. About 85% of the total students in Uruguay study at those levels. Ceibal en casa offers a versatile learning management system with communication features, digital learning platforms and more than 173 000 educational resources, including adaptive solutions and gamification.

Ceibal en casa was launched immediately after school closures were announced because it could draw on the pre-existing systematic deployment of Plan Ceibal's digital resources. Created in 2007, Plan Ceibal is the National Digital Education Plan (Ceibal is the Spanish acronym for "Basic IT Educative Connectivity for Online Learning"). It provides every student and teacher at primary and lower secondary public education with a personal computer, Internet access in schools, a comprehensive set of educational resources, as well as pedagogical services and programmes.

To implement Ceibal en casa, Ceibal worked in co-operation with the National Administration of Public Education to transform its layout and migrate from being programme designed to complement and enhance face-to-face classes to a fully digital distance-learning solution. This transformation included technical and pedagogical aspects, ranging from new videoconferencing functionalities in the learning

management system to *ad hoc* teacher training as well as guidance for parents (given that their role as mediators in the teaching and learning process became even more crucial than before).

Although complementary content for alternative outputs to reach students with no connectivity at home were put in place (for example, new educational TV programmes), Ceibal en casa relied primarily on digital media. This was possible given the relatively high level of households with Internet access in Uruguay: 88% of households have access to Internet on average, but this is true for 93% of households with children aged 14 or younger; over 76% of households have access to a computer, partly thanks to the devices provided by Plan Ceibal.[17]

According to data analytics and to a national survey conducted among teachers, Ceibal en casa's resources were widely used by most students and teachers during the school closures.

## Main problems addressed

The main problems that Ceibal en casa had to address in relation to the COVID-19 pandemic were those related to the disruption of pedagogical activities due to school closures and the resulting challenging context of social isolation. To cope with this situation, the programme has two dimensions: one related to the provision and adaptation of technical and pedagogical infrastructure and resources; the other addressed the social and emotional impact of social isolation.

- Adapting the technical and pedagogical infrastructure and resources. Ceibal en casa required training teachers and providing support on how to interact with students exclusively through digital platforms, in both synchronous and asynchronous exchanges. Communication campaigns and content delivery layouts were also necessary to make the educational resources visible, accessible and easy to use. To this end, Ceibal en casa organised a strategic process of data collection and collation to study the changes in use and the reach of the digital educational resources. This allowed adjusting and introducing innovations to the programme based on this information. Through learning analytics, Ceibal en casa monitored the use of the platforms, of specific resources and general trends, including times and days of high demand. This information was complemented with telephone and e-mail surveys completed by teachers.
- ***Addressing the social and emotional impact of social isolation*.** This focused on providing support on how to cope with the social and emotional impact of isolation and on providing relevant information about well-being within the context of the pandemic. The target audience – teachers, students and their families – were reached mainly through digital communication channels with specific messages according to their needs, including Ceibal's educational platforms, sites and social networks.

To sum up, what makes Ceibal en casa an interesting programme is its combination of a robust pre-existing digital infrastructure, pedagogical resources, and data access and collation, and its remodelling through specific innovations to adapt to the emerging situation.

## Mobilising and developing resources

Plan Ceibal had a whole ecosystem of contents and platforms, offering more than 173 000 educational resources that were already available prior to the pandemic. This includes a learning management system (CREA) accessible to all public schools across Uruguay, gamification and adaptive maths platforms for primary and secondary education, a digital library with more than 7 000 books, a collection of 1 500 open

17 This information comes from the collation of various sources including Agesic (2020) and INE (2018).

educational resources and school texts for students free of charge. It also provided a number of educational sites, online resources and software installed in Ceibal computers and tablets, for example robotics and coding accessories among other materials.

The new features introduced by Ceibal en casa were mostly related to enhancing the digital interaction between students and teachers, and the involvement of families as key facilitators in the teaching and learning process. In light of the suspension of face-to-face teaching, videoconferencing capabilities were added to the learning management system to leverage synchronous activities and allow group audiovisual interaction between teachers and students. Although Plan Ceibal had already introduced videoconferencing on a massive scale to teach English remotely in schools in 2013 (Plan Ceibal was a precursor in teaching English as a foreign language remotely by videoconferencing to address the shortage of English language teachers in Uruguay. This method facilitated the interaction between students in Uruguayan schools and remote teachers both in Uruguay and overseas.), Ceibal en casa marked the first time that this distance learning method was fully integrated into the main Ceibal learning management system, becoming universally accessible to all primary and secondary public school teachers and students.

In addition, a special section of the programme's site was specifically created to provide content and guidance on how to support pedagogical continuity from home, targeting parents and students' families. This material was also delivered through other platforms, such as social networks.

## Fostering effective use and learning

Ceibal en casa offered two learning experience options. Students could interact with teachers and peers through the programme's learning management system, which included social networking and videoconferencing functionalities, following structured and organised activities. Alternatively, they could access auto-assisted teaching platforms, books, games, challenges and other on-demand learning resources organised by age group.

To facilitate the learning journey and provide clear options and support, Ceibal en casa deployed resources addressing the main actors involved in the pedagogical continuity agenda: teachers, students and their families. Through dedicated subsections on the programme's site and social networks, specific communication and pedagogical strategies were delivered to engage each of the relevant groups in the proposed virtual learning environments. For example, students were offered games and creative activities relevant to the curriculum; teachers could access not only teaching resources, but also consultation services, discussion forums, tutorials, and virtual training and guidelines for remote teaching. Finally, families received daily tips on how to support their children with recommended content for different knowledge areas.

## Implementation challenges

Ceibal en casa's main implementation challenges were related to providing infrastructure and services. This was mainly due to the exponential increase in the use of Ceibal's learning digital platforms across Uruguay, along with the request to stay at home and implement social distancing measures. In this respect, the main concern was to guarantee the provision of resources to all students, particularly those from disadvantaged backgrounds.

Most difficulties were solved with contingency plans, which, in some cases, involved the co-operation of key partners. For example, Ceibal en casa made an agreement with the National Telecommunication Agency, ANTEL; the national Internet provider and market leader; and Claro, a private Internet provider, to facilitate access to educational resources and platforms without charging Internet data usage. This was

key to guarantee equal access to educational resources, especially for those students whose families could not afford extra costs.

In addition, a special contingency procedure was designed and put in place to deliver computers to students while ensuring social distancing. This was key to reach students in rural or vulnerable areas. Likewise, it was necessary to create a protocol to safeguard sanitary measures for essential in-person activities (5%) on Ceibal premises, such as computer repairs. All other activities (95%) were conducted remotely using internal and external virtual communication networks and systems, thanks to the virtual systems previously adopted by Plan Ceibal.

Finally, it was crucial to increase the capacity of the technological infrastructure by 400% and to redesign its architecture to increase concurrency capabilities, allowing night shifts for maintenance works to avoid service downtime during high-traffic hours. To deal with the increasing customer service demands, Ceibal en casa implemented an automated end-user tool, which included account set-up and password reset functionalities.

## Monitoring success

Ceibal en casa was monitored through data analytics and a survey completed by a nationally representative sample of teachers from primary and secondary education.[18] Based on data analytics, the reach of Ceibal en casa among primary and secondary students was 85% and 90%, respectively, increasing up to 95% among teachers, including teaching and training platforms.[19] Access to Ceibal's educational online resources increased by 2 452% in March 2020 compared to the same period in 2019.

According to the survey's results, Ceibal resources were the most used to support teaching activities in public education (93%). Data collected suggest that 98% of teachers from public schools sent assignments to students, 90% received activities submitted by students and 87% used it to provide feedback. The activities that teachers reported doing the most frequently were sending homework, uploading documents and videos to support assignments, co-ordinating with colleagues, and creating groups of students and shared documents.

They also reported videoconferencing with other teachers as a regular activity (59% and 60% in primary and secondary education, respectively), although this activity was less frequent with their students (32% in primary education and 27% in secondary education).

The survey suggests that 92% of teachers were satisfied or very satisfied with the training activities provided by Ceibal, although 70% expressed the need for further training for a more effective use of resources. These data may reflect teachers' awareness of the potential of digital environments to enhance their teaching practices, which could be achieved through a higher level of digital literacy and specific professional development.

Plan Ceibal is planning to use the information collected and lessons learnt through the implementation of Ceibal en casa to design a "Response Protocol for Massive Migration to Distance and Blended Learning"

[18] The survey was conducted among 1 245 teachers: 636 answered the survey by phone and the remaining were reached by e-mail and responded to the same questions on the SurveyMonkey platform. The results were processed by the Monitoring and Evaluation Department of Plan Ceibal.

[19] The information and all data analytics presented in this section are based on Ceibal en casa internal reports produced from when schools closed, on 16 March, to the end of May 2020, including single sign-on data taken from Google Analytics on Ceibal's site. The reach was calculated based on students who accessed any of the offered platforms at least once.

and propose a transition from an emergency phase solution to a normal time expansion and systematic integration of digital learning into face-to-face education.

## Adaptability to new contexts

This solution could be adapted in countries which already have a digital resource infrastructure at the national scale – since it is building on Plan Ceibal, Uruguay's national digital education programme.

Since Ceibal has a flexible and comprehensive combination of resources, experiences could be adapted to different countries, although they would require certain levels of investment and access to digital infrastructure and resources.

Plan Ceibal has a long tradition of collaboration in the region. It has already started sharing its knowledge within the pandemic context with low- and middle-income countries in Latin America through a collaboration with Fundación Ceibal, which co-ordinates the Alliance for the Digitalization of Education in Latin America (ADELA).

The initiative in itself allows for a larger scale use of the platforms in the future. The number of users of Ceibal's platforms grew exponentially during the school closures, reaching most public school students and teachers. (According to internal reports, the reach of Ceibal's platforms in primary public education increased from 42% in May 2019 to 85% in May 2020, mainly due to the suspension of face-to-face classes. Similarly, reach among teachers increased from 58% to 95% in the same period.) This increase of use during the health crisis represents a unique opportunity for Ceibal to capitalise on the greater awareness among teachers, students and families of the importance of an available ecosystem for teaching and learning practices facilitated by digital technologies in order to implement it systematically. It also represents a great opportunity to further explore appropriate and effective models and pedagogical approaches suitable for massive use of platforms and digital environments in normal times.)

### Box 48.1. Key points to keep in mind for a successful adaptation

1. Consider students' and teachers' access to technology and connectivity to analyse the suitability of a programme mainly based on digital media.
2. Analyse the context and the layout of your existing programme and make strategic adaptations, including technical and pedagogical infrastructure to cope with the increase in traffic and demand of educational content.
3. Build partnerships with Internet and mobile phone providers to apply reduced rates or free access to educational resources.
4. Focus your strategy on enhancing the digital interaction between students and teachers, and the involvement and support of families.
5. Present all existing educational resources in a single output platform (this could be a website or mobile app).
6. Provide a robust learning management system with communication features to keep a fluid exchange among teachers and students (videoconferencing and other additional functionalities might be needed).
7. Include adaptive and gamification platforms to facilitate teaching and make learning more accessible and enjoyable.
8. Collect as much data as possible to monitor progress and improve the layout of the plan as it is being implemented (it is crucial to determine questions, indicators and metrics to get the most from data access).
9. Design the programme as an ecosystem and implement it with sustainable and scalable solutions, suitable to increase in scope and quality, and adjust to unpredictable future scenarios.

## Acknowledgements

Special thanks to Plan Ceibal teams for the assistance and information provided. Fundación Ceibal is an independent organisation initially created by Plan Ceibal to produce independent research, innovation and knowledge-building activities on technology and education. Fundación Ceibal co-ordinates the Latin American Alliance for the Digitalization of Education and has international outreach.

## References

Agesic (2020), *EUTIC 2019* (*Survey about the use of Information and Communication Technology)*, https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/sites/agencia-gobierno-electronico-sociedad-informacion-conocimiento/files/2020-09/Informe%20EUTIC%2009%202020.pdf

INE (Statistics National Institute) (2018), *Continuous Household Survey* (ECH).

# 49 Viet Nam: Distance learning through TV broadcasting

Hanh Phuong Hoang, Associate Professor, Vietnam Institute of Educational Sciences

Anh Vinh Le, Vietnam Institute of Educational Sciences

Fernando Reimers, Professor, Harvard Graduate School of Education

Type of intervention: governmental (Ministry of Education and Training)

## General description

Viet Nam has a centralised education system with 27 723 schools serving over 16 000 primary and secondary students. Approximately 16.3% of students in the country are from ethnic minority groups and nearly 40% are from rural and economically less developed regions. All schools follow a unified national curriculum and academic year plan specified by the Ministry of Education and Training (MOET). The first COVID-19 case was recorded in Viet Nam on 23 January 2020 when students were about to begin the Lunar New Year holiday. School closures in the country began ten days later on 3 February 2020 and were prolonged for three months until early or mid-May, depending on the province and grade level.

As soon as schools closed throughout the country, MOET implemented a series of rapid responses, involving teachers and local education agencies, to ensure educational continuity, especially for students from disadvantaged backgrounds. First, the school year plan and curriculum framework were amended in light of the shortened time frame available and according to guidelines on switching to teaching through digital platforms. The time spent on topics that require significant rote learning was reduced to allow a focus on practical topics and applying knowledge to enhance students' capabilities.

Second and more importantly, MOET began to broadcast school lessons on 1 national and 27 provincial TV channels across the country. Local education agencies were in charge of developing and producing TV lessons subject to local conditions. They crowdsourced ideas from teachers specialised in specific domains to develop educational TV programmes at the provincial level. In the 27 (out of 65) provinces where TV lessons aired, as a minimum, students in 9th and 12th grades were able to watch three 30-minute maths and Vietnamese literature lessons per week. The lessons strictly followed the simplified curriculum framework communicated by MOET. Teachers and schools were involved in assessing lessons to ensure their quality before they aired. In areas where planning and filming lessons at the provincial level was not possible, the province's TV station would tune in to a nearby channel or the national channel to broadcast lessons produced in other areas of the country.

Given the limited time and resources available and the high proportion of students from less advantaged groups who did not have the resources to access online learning platforms, MOET's online and TV learning strategy was implemented quickly, with the first lesson being broadcast after only two weeks of the school closures. In some provinces, 80% of students were able to access on line or watch educational TV lessons during the period of social distancing. Because the lessons adhered to the simplified framework curriculum, the school year remained on track to finish in July, as scheduled, and the national high school examination could take place in August, again as scheduled.

## Main problems addressed

MOET's top priority has been to ensure the continuity of academic learning and prevent a widening of the achievement gap, especially given the large number of students in remote and disadvantaged socio-economic regions in Viet Nam.

***Addressing the digital divide.*** MOET's online learning strategy encourages schools to make use of digital learning platforms to deliver lessons where access to technology is available. While this is the case in major cities, only 10-20% of students and teachers working in less advantaged areas have access to personal digital devices at home. In addition, even in big cities where online learning has become easier, it was challenging for MOET and local Departments of Education and Training (DOETs) to supervise the pace and quality of teaching compared to normal face-to-face interactions. Such monitoring is important to ensure the fairness and validity of the national graduation examinations, which were maintained and successfully held on 8 August in the conventional way (with all candidates and invigilators wearing masks and having a temperature check before entering the exam sites). Therefore, it was not possible for all education institutions throughout the country to implement online learning.

***Engaging students using TV lessons.*** Addressing limited and unequal access to online learning was made even more difficult as a result of budget limitations. Distributing personal digital devices, such as tablets or laptops, to each student who lacked a device was not sustainable. However, over 90% of Vietnamese households own a television, and in less advantaged areas at least 85% of households do. Therefore, broadcasting lessons on TV became an effective solution to engage more students in distance learning. Prior to the pandemic, a national education channel existed, but mainly to review and prepare for exams. During school closures due to COVID-19, TV lessons had to be rethought completely to address the problem of completing the school year for all grade levels.

***Addressing regional differences.*** Finally, another difficulty in the Vietnamese context is the necessity of adapting to regional conditions. Despite a centralised and simplified national framework curriculum, reaching students at home in Viet Nam entailed different strategies depending on the region. The solution proposed by MOET to ensure remote pedagogical continuity emphasised the need to develop and organise learning content and lessons at a local level. This involved 28 TV stations across the country and the use of crowdsourcing to engage local teachers in addressing this problem, to meet the specific needs of all students.

## Mobilising and developing resources

***Building on the existing infrastructure.*** In face of both those national and local challenges, MOET directed provincial DOETs to monitor online and educational TV programmes at a regional level. It was the DOETs' responsibility to determine whether to rely on online learning platforms (where infrastructures allowed it), TV lessons or a combination of both within each province depending on the local situation. In cities where online learning was possible, schools assessed the availability of staff and facilities to produce detailed teaching schedules and choices of subjects. Some schools successfully managed to cover more than 10 weeks of teaching for all 13 subjects, including physical education, while others focused only on mathematics and the Vietnamese language. Teaching timetables varied by school and grade level since different pupils from the same household might have to share one digital device for learning. Schools and teachers had flexibility in their choices about which technology tools to use for lesson delivery and sharing of learning materials, with options including livestreaming on social network pages, online meeting tools or web-based learning platforms.

***Crowdsourcing the design of new educational resources for TV.*** Online learning was often impossible at the provincial level. As a result, local DOETs were also responsible for co-ordinating educational TV lessons across their given region by crowdsourcing ideas from regional teachers to develop educational TV programmes. The majority of cities and provinces aimed to broadcast mathematics, Vietnamese language and literature, and English lessons for end-of-level grades (i.e. 9th and 12th grades) and sometimes also 5th grade, although there were also some provinces where lessons for all levels from 4th through 12th grades were produced. Producing TV lessons for all subjects at all grade levels within a tight time frame was a challenge for teachers and the local DOETs. To achieve this, each school in the province was asked to take turns taking charge of at least one subject at one particular grade level. The school's subject department would have to be involved in creating and reviewing lesson plans and nominating teachers with ample professional and IT experience to receive training and deliver the lessons. Thousands of teachers across the country contributed to developing lesson plans following the simplified framework curriculum circulated by MOET. The plans were then reviewed by the school board and the DOETs to ensure that they were appropriate for TV broadcasting in terms of length, content, requirement of IT facilities and inclusion of interactive activities. If necessary, they were amended before filming could start.

***Collaborating with stakeholders from across the educational system.*** Unlike in normal in-person teaching and learning when lesson plans are developed individually by teachers, lessons for TV broadcast were usually designed collectively by the subject department of the school in charge. This strategy of allocating workload allows multiple lessons in different subjects to be simultaneously developed and broadcast in a timely manner. The whole education system including local agencies, school leaders and teachers have shown determination in their attitudes and sense of responsibility, going beyond the classroom and school campus. Thousands of teachers have worked hard to develop learning materials, adapt to new teaching methods and plan lessons, as well as provide additional academic and emotional support for students with difficulties.

***Partnering with provincial TV stations.*** In total, 28 national and provincial TV stations collaborated with the local DOETs and took charge of filming, editing and broadcasting the crowdsourced lessons. It took only two weeks until the first batch of TV lessons aired in mid-April. There were detailed schedules updated weekly for students to follow by grade and subject. In the case of some regions, such as Hanoi, where almost all subject lessons from 4th through 12th grades were broadcast, airing time could be up to 12 hours, from 8 a.m. to 8 p.m. every day from Monday through Saturday. MOET also reviewed and selected suitable lessons to broadcast on national TV channels. The TV lessons were free of charge and open to all students who had access to a TV, and were made available on different digital platforms, including websites and free digital apps.

## Fostering effective use and learning

To optimise the effectiveness of the educational broadcasts, MOET issued specific guidelines on organising teaching and learning for TV lessons, emphasising co-ordination between schools and parents, particularly class attendance/viewing lessons, testing and assessment. Communication between the schools and parents has been strengthened by telephone, online teacher-parent meetings, and question and answer sessions, as well as home visits for regular updates of the conditions and learning habits of students.

In big cities, these educational TV lessons were regarded as lectures, disseminating knowledge, while online lessons with teachers helped students to review the topic and allowed for more discussion and/or explanation. For less affluent areas, teachers made an extra effort to visit students at home with printed learning materials to ensure the continuity of schooling and academic supervision for students. Constant collaboration between schools and parents was highly encouraged to monitor children's learning habits with a view to preventing students from dropping out of school to be married or forced into child labour.

## Implementation challenges

The major challenges facing the project's implementation were limited budget and IT skills, co-ordinating a wide range of stakeholders, supporting teachers' and students' motivation, and validating distance-learning results.

***Limited resources.*** There has always been limited facilities and equipment for teaching and learning, including television, computer and Internet connection, particularly in rural and remote areas in Viet Nam. Many low-income households are still without any means of connecting to online platforms and the available budget did not allow personal digital devices to be distributed to enable disadvantaged students to access learning resources as was undertaken by some other countries. Teachers and students were overall unfamiliar with different types of distance learning. Very few teachers had prior experience and/or skills in preparing and delivering lessons on TV, where they do not interact with students. It is also difficult to engage disadvantaged students (many of whom are low performing) in independent learning through TV programmes or personal PC/tablets.

***Co-ordinating stakeholders across the education system.*** School leaders and the local DOETs have made a lot of efforts to co-ordinate with teachers and TV stations, and to monitor and review the content and production of thousands of broadcast lessons. Regarding the digital platform, many private education companies have provided free access to their lessons and learning materials, and collaborated with national TV stations to produce lessons on TV channels. This has worked thanks to Viet Nam's centralised education system, where local educators and teachers are required to follow MOET's guidelines.

***Supporting teachers to maintain motivation.*** Even though the government has been determined to maintain education continuity for students across the country by creating a separate financial plan, distance learning has been made possible mainly by drawing on changes in perceptions, attitudes and commitment levels of all parties involved. Teachers received professional training and support for IT and pedagogical skills, emotional support and acknowledgement from school leaders and local educational authorities for their sense of responsibility and commitment to address challenges.

***Developing criteria to assess distance learning.*** To motivate teachers and students further, MOET has begun the validation process of distance-learning assessment results. The content and duration of online and TV learning count towards the 2019-20 academic year, so teachers can proceed as scheduled when schools reopen. All the course examinations and projects delivered during school closures were taken into account, and MOET is currently working on criteria for accrediting the completion of distance-learning courses, which helps to promote students' and teachers' level of commitment.

## Monitoring success

Over 2 000 lessons have been developed, broadcast and watched by 87% of students in major cities and 40% of those in remote areas. On average, more than 70% of students throughout the country were able to access learning activities during the three months of school closures. Thanks to the combination of knowledge transmission on TV, online applications and discussions with teachers, many schools have managed to complete all teaching, learning and assessment activities within the school year, as scheduled. Teachers have demonstrated the utmost professionalism and determination in learning new skills and teaching methods. All teachers and school leaders were willing to prioritise children and work for their benefit.

## Adaptability to new contexts

The experiences of Viet Nam may also be applicable to other developing countries with centralised education systems where schools follow a set national curriculum framework. The ability to mobilise resources and the commitment of thousands of teachers, school leaders and local educators make these experiences particularly notable in overcoming financial and social restraints.

Lessons continued to be produced and broadcast weeks after schools reopened for those who were not able to come back to school as scheduled. The editing and compilation of these lessons are being actively monitored to build a learning resource that can be shared in the long term, with plans to make these digitally stored resources available to students from different backgrounds in the country. MOET has realised that while the pandemic crisis resulted in a series of rapid coping responses, it has created an opportunity for digitalisation in education. Applying technology to innovative education models has always been challenging in developing contexts, due to the perceptions, beliefs and attitudes of teachers and educators. Therefore, this can be an opportune moment to promote digital transformation, sharing and optimising of resources to tackle the goal of sustainable development in education within the region.

### Box 49.1. Key points to keep in mind for a successful adaptation

1. Disseminate information thoroughly to encourage changes in attitudes and a sense of responsibility.
2. Crowdsource the creation of teaching resources and involve every individual in the implementation process to maximise human capital.
3. Constantly provide positive support and show understanding to teachers, students and all stakeholders to encourage motivation, resilience and flexibility.
4. Instigate concrete measures to reach disadvantaged students and students in rural areas, through the use of TV, individual home visits (if regulations allow this) and other measures.
5. Consider instigating a collaborative effort with educational stakeholders to develop criteria for success in distance education.
6. Optimise opportunities for sustainable digital transformation in education by developing open online source learning materials and continuous professional development sessions for teachers and education leaders.

# Annex A. Index

The following index will guide readers to quickly navigate the education continuity stories based on different criteria.

The first table provides an overview of the goals and charateristics of the initiatives.

The second table dwells on the technologies used and whether the case provided learners or teachers with support.

The third table identifies the targeted stakeholders and levels of education for the different initiatives.

The fourth table highlights the skills that the initiatives tried to develop.

The fifth and final table notes the speed of deployment and approvimate cost of the different innovations.

## Table A A.1. Education continuity stories by high level criteria

| Chapter number | Title | Criteria(s) met by the initiative | | | | | | | | Control of initiative |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Quick deployment | Supportive learning infrastructure | Active engagement | Focus on disadvantaged students | Active learning | Use of learning technologies in an innovative way | Adaptable to other contexts | Sustainable | |
| 5 | Belgium (Flemish Community): KlasCement | X | X | X | | X | | X | X | Governmental |
| 6 | Brazil (Maranhão): Early Learning in Maranhão | X | | | X | | | X | X | Public Private Partnerhips |
| 7 | Brazil (São Paulo): São Paulo State Department of Education | X | X | | X | | X | X | X | Public Private Partnerhips |
| 8 | Chile: Súmate Foundation - Second chance schools network | X | X | X | X | X | | X | X | Non-governmental |
| 9 | Chile: Learning from radio | X | | X | X | | | X | X | Non-governmental |
| 10 | Colombia: Educational Alliance | X | X | X | X | | | X | X | Non-governmental |
| 11 | Colombia: To turn on the wave | X | | X | | X | | X | X | Non-governmental |
| 12 | Colombia: Learning at home | X | X | X | X | | | X | | Governmental |
| 13 | Colombia: Learns Mobile | X | X | X | X | | | X | X | Governmental |
| 14 | Colombia: My Hands Teach You | X | X | | X | | | X | | Governmental |
| 15 | Egypt: K-12 Egyptian Knowledge Bank Study Portal and new form of assessment | X | X | | | | | X | X | Governmental |
| 16 | Finland: Yle Distance School | X | X | | | | | | X | Governmental |
| 17 | France: Banks of educational digital resources | X | X | X | | X | | X | X | Governmental |
| 18 | France: Network of digital education advisers | X | X | X | X | | | X | | Governmental |
| 19 | India: Arts For All, Slam Out Loud | X | | | X | | | X | X | Non-governmental |
| 20 | India (Madhya Pradesh): Learning Will Not Stop | X | X | X | X | | | X | X | Governmental |
| 21 | India: Reality Gives | X | | | X | | | X | X | Non-governmental |
| 22 | India (Telangana): Remote learning and village learning circles for disadvantaged students | X | X | X | X | | | X | | Governmental |
| 23 | India (Nagaland): Tele/Online Education Programme | X | X | X | X | | | X | X | Governmental |
| 24 | India: Education Above All's Internet Free Education Resource Bank | X | | | X | X | X | X | X | Non-governmental |
| 25 | Japan: Tokkatsu or student-led collaboration online | X | X | X | | X | | X | | Governmental |
| 26 | Jordan: Leveraging Edtech without Internet: Offline learning with Kolibri | X | X | X | X | X | X | X | X | Non-governmental |
| 24 | Kenya: Education Above All's Internet Free Education Resource Bank | X | | | X | X | X | X | X | Non-governmental |

| Chapter number | Title | Criteria(s) met by the initiative | | | | | | | | Control of initiative |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Quick deployment | Supportive learning infrastructure | Active engagement | Focus on disadvantaged students | Active learning | Use of learning technologies in an innovative way | Adaptable to other contexts | Sustainable | |
| 27 | Latvia: Your class | X | X | | | | | X | X | Public Private Partnerhips |
| 24 | Lebanon: Education Above All's Internet Free Education Resource Bank | X | | | X | X | X | X | X | Non-governmental |
| 37 | Liberia: Rising Academy Network on air | X | | | X | | | X | X | Public Private Partnerhips |
| 28 | Mexico: Learning at home | X | X | X | X | | | X | X | Governmental |
| 29 | Netherlands: Students help students | | X | | X | X | | X | | Non-governmental |
| 30 | New Zealand: Reconnecting students through the arts | X | | X | | X | | X | | Non-governmental |
| 31 | Nigeria: Edo-BEST@Home | X | X | X | | | | X | X | Public Private Partnerhips |
| 24 | Pakistan: Education Above All's Internet Free Education Resource Bank | X | | | X | X | X | X | X | Non-governmental |
| 32 | Pakistan: Education TV at Home | X | | | X | X | | X | X | Governmental |
| 33 | Peru: I learn at Home | X | X | X | X | | | X | X | Governmental |
| 34 | Peru: Teach for Peru | X | X | X | X | | | X | X | Non-governmental |
| 35 | Russian Federation: Goonline.2035.University | X | X | | | X | X | X | X | Governmental |
| 36 | Saudi Arabia: Moving high-stakes examinations online with AI technology | | | | | | X | X | X | Governmental |
| 37 | Sierra Leone: Rising Academy Network on air | X | | | X | | | X | X | Public Private Partnerhips |
| 38 | Spain: Ensuring the continuity of learning | X | X | X | X | X | | X | X | Non-governmental |
| 39 | Spain: Learn at home | X | X | X | X | X | | X | X | Governmental |
| 40 | Chinese Taipei: Contingency plans for hybrid models of learning | X | X | X | | X | | X | X | Governmental |
| 41 | Turkey: I am special, I am in education | X | X | X | X | X | X | X | X | Governmental |
| 42 | Uganda: Popow's Radio Response to Covid-19 | X | | | X | | | X | X | Non-governmental |
| 47 | Ukraine: Virtual Edcamps | | | X | X | | | X | | Non-governmental |
| 43 | United Kingdom: BBC Bitesize | X | X | | | X | X | | | Governmental |
| 44 | United States: Central Falls Public Schools | X | X | X | X | | | X | | Governmental |
| 45 | United States: George and Veronica Phalen Leadership Academies | X | X | X | X | | | X | | Public Private Partnerhips |
| 46 | United States: Wide Open School | X | X | X | X | X | | X | X | Non-governmental |
| 47 | United States: Virtual Edcamps | | | X | X | | | X | | Non-governmental |
| 48 | Uruguay: Ceibal at home | X | X | X | X | X | | X | X | Governmental |
| 49 | Vietnam: Distance learning through TV broadcasting | X | X | X | X | | | X | X | Governmental |
| 24 | Zambia: Education Above All's Internet Free Education Resource Bank | X | | | X | X | X | X | X | Non-governmental |

## Table A A.2. Education continuity stories by main technology used and peer learning availability

| Chapter number | Title | Main technology(ies) | | | | | | | Peer learning infrastructure supplementing the use of digital ressources |
|---|---|---|---|---|---|---|---|---|---|
| | | TV broadcast | Radio broadcast | Web platform | Mobile technology | Virtual classroom | Social network | Learning analytics and AI | |
| 5 | Belgium (Flemish Community): KlasCement | | | X | | | | | X |
| 6 | Brazil (Maranhão): Early Learning in Maranhão | X | X | | X | | X | | |
| 7 | Brazil (São Paulo): São Paulo State Department of Education | X | | | X | | | | |
| 8 | Chile: Súmate Foundation - Second chance schools network | | | | X | | | | X |
| 9 | Chile: Learning from radio | | X | | | | | | |
| 10 | Colombia: Educational Alliance | | | | | X | | | |
| 11 | Colombia: To turn on the wave | | X | | X | | | | |
| 12 | Colombia: Learning at home | X | X | X | X | | X | | |
| 13 | Colombia: Learns Mobile | | | X | X | | | | |
| 14 | Colombia: My Hands Teach You | X | X | | X | | X | | |
| 15 | Egypt: K-12 Egyptian Knowledge Bank Study Portal and new form of assessment | | | X | | | | | |
| 16 | Finland: Yle Distance School | X | | X | | | X | | X |
| 17 | France: Banks of educational digital resources | | | X | | | | | |
| 18 | France: Network of digital education advisers | X | X | X | | | | | X |
| 19 | India: Arts For All, Slam Out Loud | | X | | X | | X | | X |
| 20 | India (Madhya Pradesh): Learning Will Not Stop | X | X | X | X | | | | |
| 21 | India: Reality Gives | | | | X | | | | |
| 22 | India (Telangana): Remote learning and village learning circles for disadvantaged students | X | | | X | | | | |
| 23 | India (Nagaland): Tele/Online Education Programme | X | X | | | | X | | |
| 24 | India: Education Above All's Internet Free Education Resource Bank | | | | X | | | | |
| 25 | Japan: Tokkatsu or student-led collaboration online | | | | X | X | | | X |
| 26 | Jordan: Leveraging Edtech without Internet: Offline learning with Kolibri | | | X | X | | | X | X |
| 24 | Kenya: Education Above All's Internet Free Education Resource Bank | | | | X | | | | |
| 27 | Latvia: Your class | X | | X | | | | | |
| 24 | Lebanon: Education Above All's Internet Free Education Resource Bank | | | | X | | | | |

| Chapter number | Title | Main technology(ies) | | | | | | | Peer learning infrastructure supplementing the use of digital ressources |
|---|---|---|---|---|---|---|---|---|---|
| | | TV broadcast | Radio broadcast | Web platform | Mobile technology | Virtual classroom | Social network | Learning analytics and AI | |
| 37 | Liberia: Rising Academy Network on air | | X | | | | | | |
| 28 | Mexico: Learning at home | X | X | | | | | | |
| 29 | Netherlands: Students help students | | | X | | | X | X | X |
| 30 | New Zealand: Reconnecting students through the arts | | | X | | | | | |
| 31 | Nigeria: Edo-BEST@Home | | | X | X | X | | | |
| 24 | Pakistan: Education Above All's Internet Free Education Resource Bank | | | | X | | | | |
| 32 | Pakistan: Education TV at Home | X | | X | X | | | | |
| 33 | Peru: I learn at Home | X | X | X | X | | | | |
| 34 | Peru: Teach for Peru | X | X | X | X | | | | |
| 35 | Russian Federation: Goonline.2035.University | | | X | | | X | X | X |
| 36 | Saudi Arabia: Moving high-stakes examinations online with AI technology | | | X | | | | X | |
| 37 | Sierra Leone: Rising Academy Network on air | | X | | | | | | |
| 38 | Spain: Ensuring the continuity of learning | | | X | | X | | | |
| 39 | Spain: Learn at home | X | | X | | X | | | X |
| 40 | Chinese Taipei: Contingency plans for hybrid models of learning | | | X | | X | X | | X |
| 41 | Turkey: I am special, I am in education | | | X | X | | X | X | X |
| 42 | Uganda: Popow's Radio Response to Covid-19 | | X | | | | | | X |
| 47 | Ukraine: Virtual Edcamps | | | | | X | X | | X |
| 43 | United Kingdom: BBC Bitesize | X | | X | X | | | | |
| 44 | United States: Central Falls Public Schools | | | X | X | | X | | X |
| 45 | United States: George and Veronica Phalen Leadership Academies | | | X | | X | | | X |
| 46 | United States: Wide Open School | | | X | | X | | | X |
| 47 | United States: Virtual Edcamps | | | | | X | X | | X |
| 48 | Uruguay: Ceibal at home | | | X | | X | X | X | X |
| 49 | Vietnam: Distance learning through TV broadcasting | X | | | | | | | |
| 24 | Zambia: Education Above All's Internet Free Education Resource Bank | | | | X | | | | |

## Table A A.3. Education continuity stories by targeted education stakeholder and level of education

| Chapter number | Title | Stakeholder(s) targeted | | | | | | Level(s) of education | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Students | Teachers | Parents | Schools principals | Local education authorities | Other | Pre primary | Primary | Lower secondary | Upper secondary | Vocational education and training | Tertiary | Adult learning |
| 5 | Belgium (Flemish Community): KlasCement | | X | | | | | X | X | X | X | X | | X |
| 6 | Brazil (Maranhão): Early Learning in Maranhão | | | X | | | | X | | | | | | X |
| 7 | Brazil (São Paulo): São Paulo State Department of Education | X | | | | | | | X | X | X | | | |
| 8 | Chile: Súmate Foundation - Second chance schools network | X | X | | | | | | | X | X | | | |
| 9 | Chile: Learning from radio | X | | | | | | | | X | X | | | |
| 10 | Colombia: Educational Alliance | X | X | | | | | | | X | X | | | |
| 11 | Colombia: To turn on the wave | X | X | X | X | | | | X | X | X | | | |
| 12 | Colombia: Learning at home | X | | | | | | | X | X | X | | | |
| 13 | Colombia: Learns Mobile | X | X | | | | | | | X | X | | | |
| 14 | Colombia: My Hands Teach You | | | X | | X | | X | | | | | | |
| 15 | Egypt: K-12 Egyptian Knowledge Bank Study Portal and new form of assessment | X | X | | | | | | X | X | X | | X | |
| 16 | Finland: Yle Distance School | X | X | | | | | X | X | X | X | X | X | X |
| 17 | France: Banks of educational digital resources | X | X | X | X | | | | X | X | X | | | |
| 18 | France: Network of digital education advisers | | X | | X | | | | X | X | | | | |
| 19 | India: Arts For All, Slam Out Loud | X | X | X | | X | | | X | X | X | | | |
| 20 | India (Madhya Pradesh): Learning Will Not Stop | X | X | X | X | X | | | X | X | X | | | |
| 21 | India: Reality Gives | X | | | | | | | X | | | | | |
| 22 | India (Telangana): Remote learning and village learning circles for disadvantaged students | X | X | X | | | | | X | X | X | X | X | X |
| 23 | India (Nagaland): Tele/Online Education Programme | X | X | X | X | X | | | | X | X | | | |
| 24 | India: Education Above All's Internet Free Education Resource Bank | X | X | X | | X | | | X | X | X | | | |
| 25 | Japan: Tokkatsu or student-led collaboration online | X | X | | | | | | X | | | | | |
| 26 | Jordan: Leveraging Edtech without Internet: Offline learning with Kolibri | X | X | X | | | | | X | X | X | | | |
| 24 | Kenya: Education Above All's Internet Free Education Resource Bank | X | X | X | | X | | | X | X | X | | | |
| 27 | Latvia: Your class | X | X | X | | | | | X | X | X | | | |

| Chapter number | Title | Stakeholder(s) targeted | | | | | | Level(s) of education | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Students | Teachers | Parents | Schools principals | Local education authorities | Other | Pre primary | Primary | Lower secondary | Upper secondary | Vocational education and training | Tertiary | Adult learning |
| 24 | Lebanon: Education Above All's Internet Free Education Resource Bank | X | X | X | | X | | | X | X | X | | | |
| 37 | Liberia: Rising Academy Network on air | X | X | | | | | X | X | X | X | | | |
| 28 | Mexico: Learning at home | X | X | X | X | X | | X | X | X | X | | | |
| 29 | Netherlands: Students help students | X | | | | | | | | X | X | | | |
| 30 | New Zealand: Reconnecting students through the arts | | X | | X | | | | X | | | | | |
| 31 | Nigeria: Edo-BEST@Home | X | X | | | | | X | X | X | | | | |
| 24 | Pakistan: Education Above All's Internet Free Education Resource Bank | X | X | X | | X | | | X | X | X | | | |
| 32 | Pakistan: Education TV at Home | X | | | | | | | X | X | X | | | |
| 33 | Peru: I learn at Home | X | X | X | | X | | X | X | X | X | | | |
| 34 | Peru: Teach for Peru | X | X | | X | X | | | X | X | X | | | |
| 35 | Russian Federation: Goonline.2035.University | X | X | | | | X | | | | | | X | |
| 36 | Saudi Arabia: Moving high-stakes examinations online with AI technology | X | | | | | | | | | X | | | |
| 37 | Sierra Leone: Rising Academy Network on air | X | X | | | | | X | X | X | X | | | |
| 38 | Spain: Ensuring the continuity of learning | X | X | | X | X | | | | X | X | | | |
| 39 | Spain: Learn at home | X | X | X | X | X | | | X | X | X | X | | |
| 40 | Chinese Taipei: Contingency plans for hybrid models of learning | X | X | X | X | X | | | X | X | X | | | |
| 41 | Turkey: I am special, I am in education | X | X | X | X | X | | X | X | X | X | X | X | X |
| 42 | Uganda: Popow's Radio Response to Covid-19 | X | | | | | | | X | | | | | |
| 47 | Ukraine: Virtual Edcamps | | X | | | | | | | | | X | | X |
| 43 | United Kingdom: BBC Bitesize | X | | X | | | | X | X | X | X | | | |
| 44 | United States: Central Falls Public Schools | X | X | X | | | | | X | X | X | | | |
| 45 | United States: George and Veronica Phalen Leadership Academies | X | X | X | | | | | X | X | X | | | |
| 46 | United States: Wide Open School | X | X | X | X | X | | X | X | X | X | | | X |
| 47 | United States: Virtual Edcamps | | X | | | | | | | | | X | | X |
| 48 | Uruguay: Ceibal at home | X | X | X | X | | | | X | X | | | | |
| 49 | Vietnam: Distance learning through TV broadcasting | X | X | | X | X | | | | X | X | | | |
| 24 | Zambia: Education Above All's Internet Free Education Resource Bank | X | X | X | | X | | | X | X | X | | | |

## Table A A.4. Education continuity stories by intended skill development

| Chapter number | Title | Intended skill development | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Processing and cognitive strategies | Knowledge | Creativity | Collaborative group skills | Leadership | Intellectual openness | Work ethical responsibility | Self efficacy |
| 5 | Belgium (Flemish Community): KlasCement | | X | X | X | | | | X |
| 6 | Brazil (Maranhão): Early Learning in Maranhão | X | X | | | | | | |
| 7 | Brazil (São Paulo): São Paulo State Department of Education | | X | | | | | | |
| 8 | Chile: Súmate Foundation - Second chance schools network | X | | X | X | X | | | X |
| 9 | Chile: Learning from radio | | X | | | | | | |
| 10 | Colombia: Educational Alliance | | X | | | | | | |
| 11 | Colombia: To turn on the wave | | X | | | | X | | |
| 12 | Colombia: Learning at home | | X | | | | | | |
| 13 | Colombia: Learns Mobile | | X | | | | | | |
| 14 | Colombia: My Hands Teach You | X | X | | | | | | X |
| 15 | Egypt: K-12 Egyptian Knowledge Bank Study Portal and new form of assessment | | X | | | | | | |
| 16 | Finland: Yle Distance School | | X | | | | | | |
| 17 | France: Banks of educational digital resources | X | X | X | X | X | X | X | X |
| 18 | France: Network of digital education advisers | | | | | | | | |
| 19 | India: Arts For All, Slam Out Loud | X | | X | | | | | |
| 20 | India (Madhya Pradesh): Learning Will Not Stop | X | X | | | | | | |
| 21 | India: Reality Gives | | X | | | | | | |
| 22 | India (Telangana): Remote learning and village learning circles for disadvantaged students | | X | X | X | X | | | X |
| 23 | India (Nagaland): Tele/Online Education Programme | | X | | | X | | X | X |
| 24 | India: Education Above All's Internet Free Education Resource Bank | X | X | X | X | X | X | | X |
| 25 | Japan: Tokkatsu or student-led collaboration online | | | X | X | X | | | X |
| 26 | Jordan: Leveraging Edtech without Internet: Offline learning with Kolibri | X | X | X | | | | X | X |
| 24 | Kenya: Education Above All's Internet Free Education Resource Bank | X | X | X | X | X | X | | X |
| 27 | Latvia: Your class | | X | X | | | | | X |
| 24 | Lebanon: Education Above All's Internet Free Education Resource Bank | X | X | X | X | X | X | | X |
| 37 | Liberia: Rising Academy Network on air | | X | | | | | | |

| Chapter number | Title | Intended skill development | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Processing and cognitive strategies | Knowledge | Creativity | Collaborative group skills | Leadership | Intellectual openness | Work ethical responsibility | Self efficacy |
| 28 | Mexico: Learning at home | X | X | X | X | X | X | X | X |
| 29 | Netherlands: Students help students | | X | | | | | X | X |
| 30 | New Zealand: Reconnecting students through the arts | X | | | | | | | X |
| 31 | Nigeria: Edo-BEST@Home | X | X | | | | | | X |
| 24 | Pakistan: Education Above All's Internet Free Education Resource Bank | X | X | X | X | X | X | | X |
| 32 | Pakistan: Education TV at Home | X | X | | X | | | | |
| 33 | Peru: I learn at Home | | X | | | | | X | X |
| 34 | Peru: Teach for Peru | X | X | | X | | | | |
| 35 | Russian Federation: Goonline.2035.University | | X | X | X | | | | X |
| 36 | Saudi Arabia: Moving high-stakes examinations online with AI technology | | | | | | | X | X |
| 37 | Sierra Leone: Rising Academy Network on air | | X | | | | | | |
| 38 | Spain: Ensuring the continuity of learning | X | X | X | X | | X | | X |
| 39 | Spain: Learn at home | X | X | X | | X | X | | |
| 40 | Chinese Taipei: Contingency plans for hybrid models of learning | X | X | X | X | X | | | X |
| 41 | Turkey: I am special, I am in education | X | X | X | | | X | | |
| 42 | Uganda: Popow's Radio Response to Covid-19 | X | X | | | | | | |
| 47 | Ukraine: Virtual Edcamps | | X | X | X | X | X | X | X |
| 43 | United Kingdom: BBC Bitesize | X | X | | | | | | |
| 44 | United States: Central Falls Public Schools | X | X | | | | | X | X |
| 45 | United States: George and Veronica Phalen Leadership Academies | X | X | | | | | X | |
| 46 | United States: Wide Open School | X | X | X | | X | X | X | |
| 47 | United States: Virtual Edcamps | | X | X | X | X | X | X | X |
| 48 | Uruguay: Ceibal at home | X | X | X | X | | | | X |
| 49 | Vietnam: Distance learning through TV broadcasting | X | X | | X | | | | X |
| 24 | Zambia: Education Above All's Internet Free Education Resource Bank | X | X | X | X | X | X | | X |

## Table A A.5. Education continuity stories by speed of implementation and cost per student

| Chapter number | Title | Speed of implementation (in weeks) | Gap between availability and school closure (in weeks) | Cost of the initiative (per student) | Submitting organisation |
|---|---|---|---|---|---|
| 5 | Belgium (Flemish Community): KlasCement | 2 | None | $ | OECD |
| 6 | Brazil (Maranhão): Early Learning in Maranhão | 2 | 2 | $ | Harvard |
| 7 | Brazil (São Paulo): São Paulo State Department of Education | 4 to 8 | 4 to 8 | $$ | Harvard |
| 8 | Chile: Súmate Foundation - Second chance schools network | 2 | 2 | $ | Harvard |
| 9 | Chile: Learning from radio | 4 to 8 | 4 to 8 | $ | Harvard |
| 10 | Colombia: Educational Alliance | 4 to 8 | 4 to 8 | $ | Harvard |
| 11 | Colombia: To turn on the wave | 4 to 8 | 4 to 8 | $ | Harvard |
| 12 | Colombia: Learning at home | 4 to 8 | 4 to 8 | $$ | Harvard |
| 13 | Colombia: Learns Mobile | 4 to 8 | 4 to 6 | $$ | World Bank |
| 14 | Colombia: My Hands Teach You | 1 | None | $$ | World Bank |
| 15 | Egypt: K-12 Egyptian Knowledge Bank Study Portal and new form of assessment | 1 | 1 | $ | OECD |
| 16 | Finland: Yle Distance School | 1 | 1 | $ | HundrED |
| 17 | France: Banks of educational digital resources | 2 | None | $ | OECD |
| 18 | France: Network of digital education advisers | na | None | $ | OECD |
| 19 | India: Arts For All, Slam Out Loud | 2 | 2 | $ | World Bank |
| 20 | India (Madhya Pradesh): Learning Will Not Stop | 2 | 2 | $ | Harvard |
| 21 | India: Reality Gives | 4 to 8 | 4 to 8 | $ | Harvard |
| 22 | India (Telangana): Remote learning and village learning circles for disadvantaged students | 4 to 8 | 4 to 8 | $ | World Bank |
| 23 | India (Nagaland): Tele/Online Education Programme | 1 | 3 | $ | World Bank |
| 24 | India: Education Above All's Internet Free Education Resource Bank | 3 | 4 to 8 | $ | HundrED |
| 25 | Japan: Tokkatsu or student-led collaboration online | `1 | 1 | $ | OECD |
| 26 | Jordan: Leveraging Edtech without Internet: Offline learning with Kolibri | 4 to 8 | None | $ | HundrED |
| 24 | Kenya: Education Above All's Internet Free Education Resource Bank | 3 | 4 to 8 | $ | HundrED |
| 27 | Latvia: Your class | 3 | 3 | $$ | OECD |
| 24 | Lebanon: Education Above All's Internet Free Education Resource Bank | 3 | 4 to 8 | $ | HundrED |
| 37 | Liberia: Rising Academy Network on air | 2 | 2 | $ | Harvard |
| 28 | Mexico: Learning at home | 1 | None | $$ | World Bank |
| 29 | Netherlands: Students help students | 1 | 1 | $ | OECD |

| | | | | | |
|---|---|---|---|---|---|
| 30 | New Zealand: Reconnecting students through the arts | 3 | 4 to 8 | $ | OECD |
| 31 | Nigeria: Edo-BEST@Home | 4 to 8 | 4 to 8 | $$ | World Bank |
| 24 | Pakistan: Education Above All's Internet Free Education Resource Bank | 3 | 4 to 8 | $ | HundrED |
| 32 | Pakistan: Education TV at Home | 3 | 3 | $ | World Bank |
| 33 | Peru: I learn at Home | 2 | 2 | $$ | World Bank |
| 34 | Peru: Teach for Peru | 4 to 8 | 4 to 8 | $$ | Harvard |
| 35 | Russian Federation: Goonline.2035.University | 1 | None | $ | World Bank |
| 36 | Saudi Arabia: Moving high-stakes examinations online with AI technology | 4 to 8 | Over 8 | $$$ | World Bank |
| 37 | Sierra Leone: Rising Academy Network on air | 2 | 2 | $ | Harvard |
| 38 | Spain: Ensuring the continuity of learning | None | None | $ | OECD |
| 39 | Spain: Learn at home | 1 | None | $ | OECD |
| 40 | Chinese Taipei: Contingency plans for hybrid models of learning | 4 to 8 | 4 to 8 | $$ | HundrED |
| 41 | Turkey: I am special, I am in education | 2 | 3 | $ | OECD |
| 42 | Uganda: Popow's Radio Response to Covid-19 | 3 | 3 | $ | Harvard |
| 47 | Ukraine: Virtual Edcamps | 4 to 8 | None | $ | World Bank |
| 43 | United Kingdom: BBC Bitesize | 4 to 8 | 4 to 8 | $$ | OECD |
| 44 | United States: Central Falls Public Schools | 3 | 2 | $$ | Harvard |
| 45 | United States: George and Veronica Phalen Leadership Academies | 3 | None | $$ | Harvard |
| 46 | United States: Wide Open School | 2 | 2 | $$$ | OECD |
| 47 | United States: Virtual Edcamps | 4 to 8 | None | $ | World Bank |
| 48 | Uruguay: Ceibal at home | 1 | None | $$ | World Bank |
| 49 | Vietnam: Distance learning through TV broadcasting | 2 | 4 to 8 | $ | Harvard |
| 24 | Zambia: Education Above All's Internet Free Education Resource Bank | 3 | 4 to 8 | $ | HundrED |

# How Learning Continued during the COVID-19 Pandemic

## GLOBAL LESSONS FROM INITIATIVES TO SUPPORT LEARNERS AND TEACHERS

This report brings together 45 of the education continuity stories that were jointly documented by the OECD, the World Bank, Harvard's Global Education Innovation Initiative and HundrED during the first wave of school closures related to the COVID-19 pandemic. It covers a variety of different examples on how governments and non-governmental organisations quickly responded to school closures to implement a strategy for learners around the world to continue to study. While often based on the use of digital solutions, those solutions target specific solutions aimed at academic learning, socio-emotional support, teacher professional development, etc. The book covers examples from low, middle and high income countries on all continents and draws some lessons of these fast-paced responses to reimagine a post-pandemic education across the world.

Global Education Innovation Initiative

hundrED

PRINT ISBN 978-92-64-53821-4
PDF ISBN 978-92-64-81909-2