Remote Learning and COVID-19

EdTech Knowledge Pack on Remote Learning response to COVID-19

With special focus on LDCs and FCV

Version 5: April 8, 2020
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Overview

Purpose
Knowledge Packs are resources developed by the World Bank’s EdTech team to serve as short, practical guides on individual topics within education technology. Given the need of countries to support out-of-school students with more than 80% of countries facing school closures, this Knowledge Pack focuses on remote learning in response to COVID-19 with a focus on K-12 (primary and secondary education) in low resource environments. The advice is as useful for better resourced environments across countries. There is also a section on online learning for higher education.

Audience
The goal is for this Knowledge Pack to serve as a resource for Ministries of Education to use remote learning to respond to COVID-19 based school closures. Hence, the audience for this Knowledge Pack is World Bank Education staff as well as other non-World Bank decision-makers who are supporting Ministries of Education with this.

Click HERE for the World Bank’s website on ‘Remote Learning, EdTech & COVID-19’ for more related resources.
The COVID-19 crisis has left more than 1.5 billion children out of school with more than 85% countries mandating school closures, as per World Bank data as of April 3, 2020.

With the length of school closures uncertain, countries are attempting to support learning of students out-of-school and in almost all cases, are turning to the use of educational technology (EdTech) to deliver and support remote learning.

Middle- and high-income environments are mostly deploying online learning systems (Learning Management Systems, Video Conferencing) with some also using broadcast media like television as a supplementary channel of delivery. However the demand for remote learning has also exposed stark digital divides within countries.

Low-income and Fragile, Conflict and Violence (FCV) affected environments often lack wide-spread connectivity and are deploying alternative EdTech solutions such as radio.

Only 3 of 54 Low Income and FCV countries have Internet penetration rates above 50%. Online learning is not the first option. Alternative edtech options should be considered.
First: Consider the World Bank’s 5 Principles for EdTech applied to remote learning during COVID-19

**Principle 1**

**ASK WHY?:**
In this case, the use of EdTech is to support remote learning at home for students during COVID-19 based school closures.

**DESIGN FOR SCALE:**
EdTech interventions must be designed for scale for all children. This means (a) using technology that already exists and widely used in the country (b) considering non-technology and low technology solutions and (c) combining technologies for multi-modal delivery such as radio with text messaging.

**Principle 2**

**EMPOWERED TEACHERS:**
Technology should enhance teachers’ access to content, data and expertise to improve teaching and learning. **In most cases of COVID-19 based remote learning, the parent is also now a ‘teacher.’**

**Principle 3**

**ENGAGE THE ECOSYSTEM:**
Education systems should take a whole-of-government and multi-stakeholder approach, both inside and outside the system. They must bring together stakeholders like telecom companies, publishers, local EdTech startups, radio and TV stations.

**Principle 4**

**DATA DRIVEN:**
Set up feedback mechanisms to collect, analyze and respond to feedback. Data on student learning will need to be collected when schools open to identify learning loses during the crisis.

**Principle 5**
What can policy makers do? 5 Key Messages

   ✓ Remember that we can’t replicate everything that happens in school while at home, but we should take the opportunity to rethink lifelong learning and how to reach out-of-school children and youth as part of a medium-long term plan.

2. Use the most widely used existing technology in the country – For FCV or LICs, most likely, Radio, TV, Mobile Phones.
   ✓ In the short term, it is not prudent to start buying lots of devices or trying e-learning with no prior experience. This can instead be part of a medium-term plan for resilience and reform.

3. Consider using a combination of multiple technologies to reach as many children as possible.
   ✓ Multi-pronged approach could include: Radio, TV, Mobile Phones/SMS/WhatsApp, Facebook, e-Books, online learning delivery, and print materials.

4. For online learning, focus on curating existing (open) content rather than developing content.
   ✓ Developing good content takes time and expertise. Instead, in the short-term, focus on existing local and international (open education resources) content and align these to your curriculum.

5. Parents and caregivers are critical pieces of the puzzle - they are now also the teachers.
   ✓ Providing regular guidance and support to parents via Radio, TV, SMS, Facebook. This helps provide them with direction and helps boost morale.
EdTech Decision Tree for Ministries of Education (K-12 focus)

**Start Planning**

- **Have you closed schools yet?**
  - **Yes**: Focus on broadcast technology (e.g., radio, TV, mobile)
  - **No**: Do you have content for all grades and subjects?
    - **Yes**: Focus on curating existing open resources
    - **No**: Proceed

**Is your internet penetration >50%?**

- **No**: Do you have an existing online learning system? E.g., Moodle, Microsoft Teams, Google Class
  - **Yes**: Proceed
  - **No**: Focus on supporting teachers, students & parents:
    - Communicate regularly through multiple channels: Website, Radio, TV, SMS, WhatsApp, FB
    - Have a helpdesk/helpline

**Focus on broadcast technology (e.g., radio, TV, mobile)**

- **Do you have an existing education Radio or TV?**
  - **Yes**: Ramp up broadcasts, share schedule widely using broadcast media
  - **No**: Proceed

**Focus on supporting teachers, students & parents:**

- Optimize for mobile-first
- Increase server capacity
- Zero rate required websites*
- Add broadcast media

*Inspired by UNICEF COVID 19 Decision Tree.*
Mass Broadcast Technologies – (1) Education Radio

- Over 30 countries have deployed some form of Interactive Radio Instruction (IRI) including:
  - **LAC** - Bolivia, Costa Rica, El Salvador, Dominican Republic, Guatemala, Honduras, Guyana, Haiti, Nicaragua, Venezuela.
  - **Asia** - Bangladesh, India, Indonesia, Nepal, Pakistan, Papua New Guinea, Thailand.

- IRI has been shown to improve learning outcomes by “between 10% and 20%” when compared with control classrooms not using IRI. – [WB IRI toolkit](https://www.worldbank.org/en/topic/education/datasheets/irr)

- IRI has been used to teach mostly all basic primary subjects to audiences of all ages, as well as hard-to-reach and out-of-school populations. Most IRI programs have targeted lower primary and pre-school students.

- IRI has often targeted improving quality in school but some projects target remote learners.
  - Designs for in-school use with low teacher skills can be ideal for at home use with parents acting as teacher.

- Can be rapidly deployed for countries with existing education radio programs. May not be a rapid option for countries without existing programs. But radio is effective in all cases for communication with parents and teachers e.g. providing daily tips and schedules that support learning.

  **Pros:** Can reach wide audience, no prior skills needed by students/parents, can be done in local languages.

  **Cons:** Need to develop good scripts to have impact; requires scheduling; can take time to develop scripts for countries without radio programs.

  **Recommendation for enhanced use of Radio** - Set up SMS Short-Codes*/Toll-free lines for student/parent queries, use SMS to distribute schedules + use Radio to communicate.

- “Because radio is a one-way broadcast medium, IRI programs are not truly interactive in the sense of two-way communication. Short pauses provided throughout the lessons allow teachers and learners to stop and react to questions and exercises through verbal and physical responses to radio characters, group work, experiments, and other physical and intellectual activities while the program is on the air.” – [WB IRI Toolkit](https://www.worldbank.org/en/topic/education/datasheets/irr)

**World Bank funded projects using Radio programs:**
- [Burkina Faso Education Access and Quality Improvement Project](https://www.worldbank.org/en/topic/education/datasheets/irr) – Active project
TV is being currently used by 60+ countries* for remote learning during the COVID-19 crisis. TV broadcasts can be terrestrial or by satellite as well as streamed online.

- Possibly the fastest tool to deploy especially for lecture-based classes (can record good teachers teaching without much training).

- More than one channel is recommended to reach multiple grades and subjects (negotiate with commercial TV providers for more channels during the day).

- Edutainment programs already exist in some countries (e.g. Ubongo, Sesame Street) and can be used as part of the broadcast to support student learning and engagement.

- Essential to have and communicate schedules for learning well in advance.

- Consider synchronous (real-time*) and asynchronous (on-demand*) sessions.

Pros: Fastest deployment for lecture style, TV Video can be recorded/ re-transmitted providing opportunity for students to go back and review or catch up if missed lesson

Cons: Engaging TV lessons/edutainment requires scripts and good production which takes time.
- Only useful for areas with TV penetration (missing in some parts of low-income countries).
- Competition with news/entertainment for children’s attention.

Recommendation for enhanced use of TV: Stream TV online (e.g. via YouTube) if bandwidth permits, distribute schedules by SMS/social media, set up SMS/Toll-free lines for student/parent queries.

Click HERE for more resources on education TV including (1) country examples of using TV to respond to COVID-19 (2) practical guidance note on starting TV lessons (3) curation of education TV resources across the world.

Source: Kenya Institute of Curriculum Development

Source: Ministry of Education, Culture, Science and Sports of Morocco
Costs for Education Radio and Television

Radio Costs

- Costs are in the range of $3-$8 per student per year.
- Costs are front loaded with heavy start up costs that include studio and transmission equipment, developing curriculum and scripts, production costs as well as training.
- Recurrent costs include airtime, distribution of printed materials, improvement of materials.
- Radio benefits from economies of scale – costs per student reduce as more are reached.

Source: World Bank Toolkit
“Improving Education Quality through Interactive Radio Instruction (IRI)- A Toolkit for Policy Makers and Planners”

Television Costs

- The World Bank IRI toolkit quoting other studies notes that “cost of using television is usually higher than that for radio—typically, more than 10 times as high per student reached”.

- Educational Television cost components (if starting a new educational television channel) include:
  - transmission equipment
  - camera equipment
  - studio equipment
  - hiring and training of studio and production staff
  - recurring costs include renting airtime as well as salaries for studio crew and master teachers.

- Costs will be lower for countries with existing educational TV although upgrades of studio or transmission equipment may be required in some cases.

Source: Extract from World Bank IRI Toolkit
“Improving Education Quality through Interactive Radio Instruction (IRI)- A Toolkit for Policy Makers and Planners”
Printed Materials

- Textbooks and printed study guides can be useful resources for students and parents. However, developing and physically distributing print materials during school closure can be challenging and may not be the best use of resources.
  - Distribution is challenging even during non-crisis periods.

- Instead:
  - If schools have not closed yet, plan for students to take existing textbooks home.
  - Where Ministries have Intellectual Property Rights (IPR) on print materials, make electronic copies widely available online (eg. can be shared via WhatsApp).
  - Negotiate with publishers to provide electronic copies of book.
  - Develop simple study guides (in multiple languages) and share electronically (eg. social media, WhatsApp).
  - Use newspaper as a medium – Have a daily education supplement/section with simple study guides.

Pros: Can reach everyone, no additional skills needed (except literacy skills).

Cons: Requires literacy skills, illiterate parents will feel challenged to support their children, takes time to develop and distribute printed material, distribution is a major challenge for many countries.

Many textbooks in India have QR codes. When students scan them, it connects them to further study material and practise assessments. Source: Diksha
Online Learning (Higher Education and K-12 in middle-income contexts) – 5 key components

<table>
<thead>
<tr>
<th>Platforms</th>
<th>Digital content includes text, images, videos, audio packaged in various formats such as PDF, e-Pubs, podcasts, GIFs, videos, animations and can be static or interactive.</th>
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</thead>
<tbody>
<tr>
<td>• Learning Management Systems - “traditional” course management systems (e.g. Moodle, Kolibri) + ‘enhanced’ collaboration &amp; document management-based system (e.g. Microsoft Teams, Google Classroom)</td>
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<tr>
<td>• Video Conference System for synchronous* interactions (eg. Zoom, BigBlueButton, Jitsi)</td>
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<thead>
<tr>
<th>Content</th>
<th>Hosting refers to technologies to store the platform and content on a computer system and make them available over the internet. Examples:</th>
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<tbody>
<tr>
<td>• Use own existing national content, if it exists</td>
<td></td>
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<tr>
<td>• If none exists, supplement with or curate international content/free Open Education Resources</td>
<td></td>
</tr>
<tr>
<td>• Align to the curriculum structure</td>
<td></td>
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</tbody>
</table>

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<thead>
<tr>
<th>Hosting</th>
<th>Students in many low/middle-resource contexts connect to online learning with limited internet (eg. mobile internet). Equity (lack of connectivity and/or devices) and affordability are critical issues. For affordability:</th>
</tr>
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<tbody>
<tr>
<td>• Zero rating LMS sites- working with local Telcos &amp; Ministries of ICT/Telco regulators</td>
<td></td>
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<tr>
<td>• Negotiating reduced data costs with Telcos</td>
<td></td>
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<tr>
<td>• Explore Universal Service Funds (USF) with the Telco Regulator</td>
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<tr>
<th>Connectivity</th>
<th>It is critical to support students and teachers during this transition to remote online learning:</th>
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<tbody>
<tr>
<td>• Organize online- training for teachers</td>
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<tr>
<td>• Set up a Help Desk – leverage cloud-based help desk (eg. Amazon Connect)</td>
<td></td>
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<tr>
<td>• Use of SMS/Social Media to reach ALL learners - work with Telcos to set up SMS short-codes</td>
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</tbody>
</table>

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<tr>
<th>Training &amp; Support</th>
<th>Mobile First</th>
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Supporting and leveraging Teachers

1) Ensure **regular continuous communication** with teachers.
   - Provide updates and guidance on how to support themselves and students during school closure.
   - Provide helpdesk for teachers to ask questions and seek guidance.

2) Leverage teachers who can **deliver Radio and TV broadcast lessons** or create short electronic student and parent guides. Many countries are finding innovative teachers on YouTube for instance.

3) Leverage time during school closure for **teacher professional development** using online tools.
   - Provide training for teachers using simple online tools.

4) Identify **master teachers to provide guidance for teachers** regarding daily short lessons/tips that all teachers can, in turn, be tasked to communicate directly over SMS to parents of their students or directly with students.

5) Ensure **school leaders support teachers** as they in turn, support parents and students.
   - Schools can create **WhatsApp** groups for parents and teachers.
   - Create regular SMS communication from school leaders and teachers to parents.

Click [HERE](#) for country examples of using EdTech to support teachers and learners during COVID-19.

Click [HERE](#) to access a curation of resources from across the world being used to support teachers and learners with remote learning.
Supporting Parents

It is critical to support parents at home through:

(1) **Pedagogical Support:** Provide guidance to parents on how to manage home schooling.
   - Provide guidance on **scheduling** for home schooling including schedules of Radio, TV, Online lessons.
   - Provide simple tips on **how to structure** student learning
   - Provide simple lesson plans.
   - Provide daily/weekly activities that students can engage in.
   - Provide means for parents to ask questions/seek guidance (e.g. set up a helpline).
   - Provide daily simple assessments/activities.

(2) **Socio-emotional support:** Parents need to know they are not alone and require support with structure.
   - Provide regular messages of support and **encouragement**.
   - Important for parents to hear directly from leadership (e.g. Minister) through a weekly broadcast (eg. SMS, Facebook, etc.)
   - Encourage peer support (e.g. host parents on radio programs to share experiences and advice on what to do (e.g. parent phone-in program).

**Tools**

- Radio, TV broadcasts.
- SMS (Work with Telcom companies to setup **SMS Short Codes** for parents to subscribe to get messages/ask questions.)
- Social media - **WhatsApp**, Facebook.
- Setup virtual helpline / virtual call center - with Toll Free numbers, SMS, Email, Social Media.
- Host all resources (eg. schedules, tips, study guides) for parents in one place (eg. Ministry website).

Click **HERE** for a guidance note on education TV with examples of scheduling and other support for parents.

REMEMBER TO:
Communicate regularly and consistently in local languages.
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<th>Resource</th>
<th>Overview</th>
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<tr>
<td><strong>1</strong> Rapid response reference note: Remote Learning and COVID-19</td>
<td>A 12-page World Bank rapid response reference note to brief policymakers on general rules of thumb of potential relevance when quickly exploring and rolling out the use of remote learning, distance education and online learning at scale.</td>
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<tr>
<td><strong>2</strong> (Short) Guidance Note on Remote Learning &amp; COVID-19</td>
<td>A short 3-page World Bank guidance note offers principles to maximize countries’ effectiveness in designing and executing remote learning during COVID-19 based school closures.</td>
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<tr>
<td><strong>3</strong> Education Television Programming as a response to Remote Learning: Guidance Note</td>
<td>A short World Bank guidance (6 pages) on using educational TV as a form of remote learning. 5 practical things to do are suggested for countries wanting to start this. 5 things to consider are suggested to enhance this programming. 30+ current examples are used to make the case.</td>
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<tr>
<td><strong>4</strong> Country Responses to remote learning during COVID-19</td>
<td>A World Bank catalogue of how countries are using EdTech (including online learning, radio, television, texting) to support access to remote learning during COVID-19</td>
</tr>
<tr>
<td><strong>5</strong> Remote Learning and Distance Education during COVID-19: A Resource List</td>
<td>A curation of resources by the World Bank’s EdTech team organised by ‘Content and Repositories’, ‘National Learning Platforms’, ‘Other Platform and Software’ (eg. LMS, Training, Video conference, etc.) and ‘Radio and TV’.</td>
</tr>
<tr>
<td><strong>6</strong> Academic Paper on Education Television in Mexico - Telesecundaria</td>
<td>A study about the secondary school expansion through televised lessons through the labor market returns of the Mexican Telesecundaria over the period of 1968 – 2019.</td>
</tr>
<tr>
<td><strong>7</strong> (i) WB toolkit on Interactive Radio Instruction (ii) Academic note on Interactive Radio instruction</td>
<td>(i) A World Bank toolkit for Policy Makers and Planners on ‘Improving Educational Quality through Interactive Radio Instruction’. (ii) An academic study on 23 Years of improving educational quality through interactive radio instruction.</td>
</tr>
<tr>
<td><strong>8</strong> Broadcast Media in Distance Education: A Self-Instructional manual for Staff Development</td>
<td>A UNESCO manual for training people who coordinate courses in distance education institutions and wrote scripts for their TV and radio programs. It is also aimed at producers involved in such broadcast programs.</td>
</tr>
</tbody>
</table>
Click [HERE](#) to contact the EdTech team at the World Bank.