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THE WORLD BANK
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Mobile

Resource Pack
to Support Remote Learning
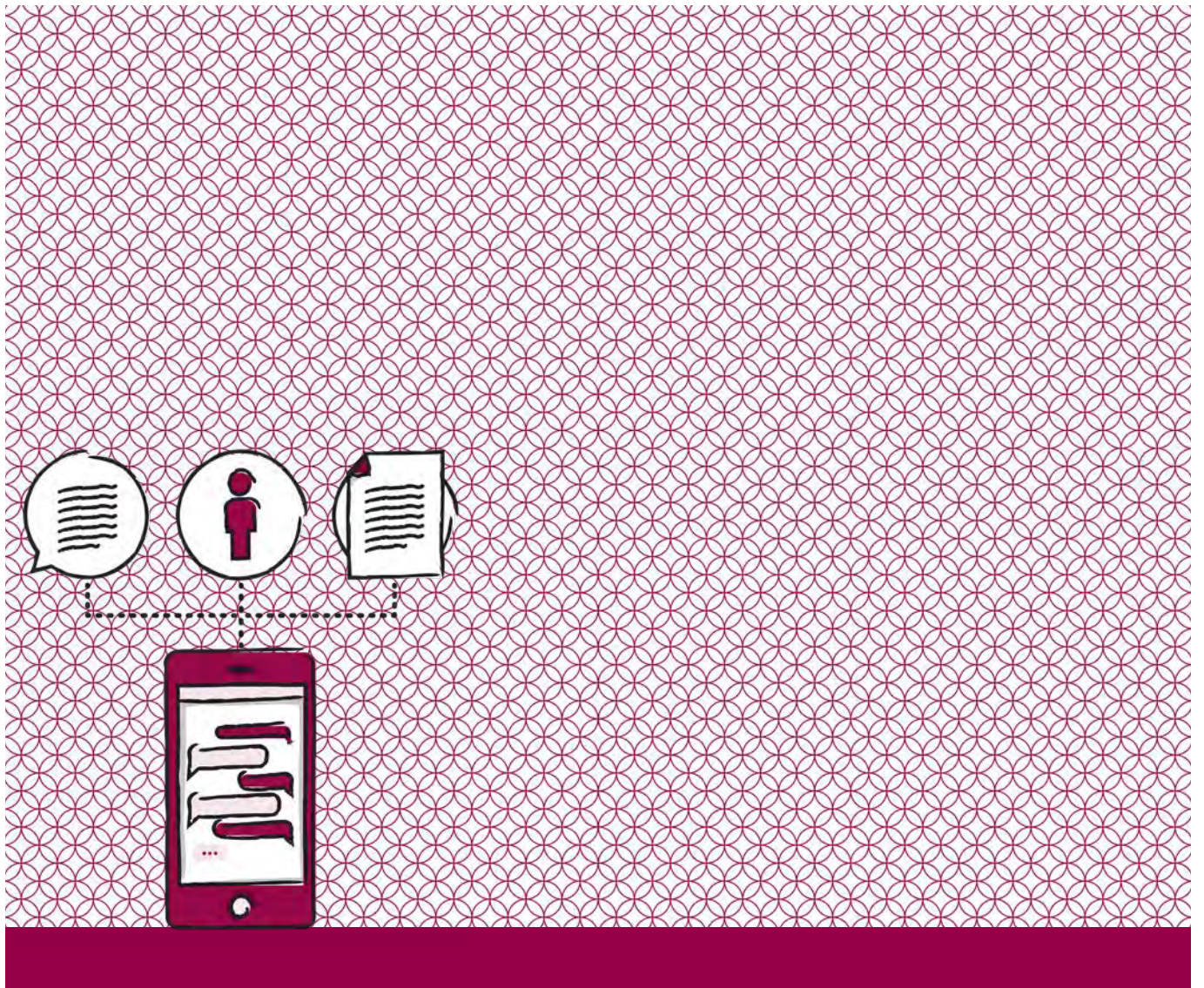
Acknowledgements

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1

About the Remote Learning Resource Packs

In response to the challenge to education systems presented by the global COVID-19 pandemic, UNICEF and the World Bank have created a set of seven Resource Packs about remote learning. The packs are designed to support government officials and staff in national and international agencies tasked with designing and implementing effective remote learning opportunities for children in development and humanitarian contexts.

Remote learning is the process of teaching and learning performed at a distance. Rather than having learners meet their teachers in person, learners are distanced from their teacher and possibly their peers as well.

One of the consequences of COVID-19 is that almost every country has had to put in place remote learning programmes. The packs are therefore designed primarily to help you to enhance and improve the effectiveness of existing remote learning programmes.

PACK 1
Introduction

This introductory Resource Pack considers the key elements of a 'pedagogy-first' approach to remote learning, starting with the learner and learning, then considering technology options and your programmes' broader approach to supporting learning. It discusses some of the most common considerations that remote programmes often overlook but which, if carefully considered, can lead to improved learning for more children.

PACK 2
Radio

Radio has a long-established position among remote learning modalities, reflecting in part its wide accessibility in many parts of the world including in some of the hardest to reach areas. This pack is designed to support you if you are involved in remote learning using radio and help you to strengthen and improve systems and approaches so that learning outcomes can be improved for all children and young people.

PACK 3
Print

Despite advances in technology, print remains a crucial medium for many learners around the world. This pack discusses some of the major strengths and limitations of print as a medium for delivery of remote learning and identifies some of the approaches that can be taken when planning for the use of print within remote learning.

PACK 4
TV

A recent UNICEF survey of 127 countries using technology for remote learning identified that 75% are using edTV. This pack is designed to support you if you are involved in remote learning through edTV. It can help you to strengthen and improve your systems and approaches so that learning outcomes can be improved for all children and young people.

PACK 5
Digital

This Resource Pack is intended to help you design new digital remote learning programmes or strengthen existing programmes. This pack will help evaluate your digital learning options by placing your learning purpose and the context of your learners at the heart of your decision making.

PACK 6
Mobile
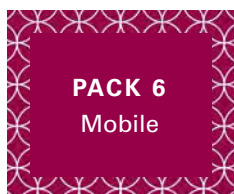
There are over 5 billion mobile users in the world today. Unsurprisingly, many countries are turning to mobile technology for remote learning. This pack is about creating and strengthening effective remote learning programmes using mobile technology. It overlaps with the Resource Pack about digital learning.

PACK 7
Formative Assessment
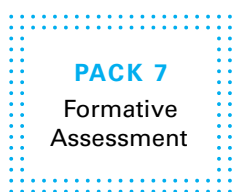
Children and young people cannot be expected to learn and progress through a remote learning programme with few or no interactions with teachers. This Resource Pack is about creating opportunities for formative assessment in remote learning programmes i.e. opportunities for checking understanding, giving feedback and collecting information to decide what to do next.

Purpose of the mobile technology to support remote learning pack

This pack is about creating and strengthening effective remote learning programmes using mobile technology.

There are over 5 billion mobile users in the world today. Unsurprisingly, therefore, many countries have turned to using mobile technology for remote learning as an educational response to the pandemic. This pack provides an overview of how programmes around the world have been using mobile technology so that 'learning does not stop' whilst schools are closed during the COVID-19 pandemic and in starting to build more resilient and blended education systems for the future.

This pack is intended to help those designing new or strengthening existing mobile remote learning programmes, by illustrating opportunities and issues that other programmes have encountered, and the range of ways in which they have responded to these. The use of mobile learning strategies should be assessed against the local context and conditions.

It does so by examining three broad areas to help you to strengthen and improve systems and approaches so that learning outcomes can be improved for all children. These are:

- **access and equity**;

- **quality learning and support**; and

- **using assessment to support learning**.

Readers of this pack will be at different stages in programme design, development and delivery. The pack does not tell you how or where to start, but offers 'reflection points' – a series of questions and challenges to enable your own stocktake and review, to improve upon where you are now and to build upon the experience and expertise you have gained during the immediate crisis of school closures. Together, these reflection points can provide the basis of a series of structured discussions for programme leaders, designers and implementers, for example, when looking forwards to more blended approaches to learning as schooling begins to reopen.

Case studies have been selected to illustrate a broad range of specific opportunities and issues. Using these, the resource pack draws out a variety of responses taken in different country contexts. Some are large-scale, supporting national level, government-led educational programming; others are on a smaller scale, focussed on the targeted needs of a specific group of learners (e.g., girls, or out-of-school youth). All the cases need to be understood within their specific contexts and objectives, but together they provide insights into successful strategies and promising practices in using mobile technology for remote learning.

Some of the cases that feature in this pack are included in the map that follows.

A selection of case studies included in this pack

JORDAN
Learning Bridges

LEARNER PROFILE
Children in grades 4 to 9

LEARNING OBJECTIVE
Recovering and accelerating learning in core curriculum subjects

INDIA
Remote learning and village learning circles

LEARNER PROFILE
Students in grades 5 to 12 from marginalised groups

LEARNING OBJECTIVE
Education continuity while schools are closed

INDIA
#Ab Padhai Nahi Rukegi

LEARNER PROFILE
Students in grades 1 to 12

LEARNING OBJECTIVE
Primary and secondary education and learning continuity during school closures

INDIA
BYJU'S Learning App

LEARNER PROFILE
Students in grades 1-12

LEARNING OBJECTIVE
Primary and secondary education and exam preparation

NIGERIA
EdoBEST@Home

LEARNER PROFILE
Pre-primary and primary students

LEARNING OBJECTIVE
School readiness and primary education

BOTSWANA
TaRL (Teaching at the Right Level)

LEARNER PROFILE
Primary school age children

LEARNING OBJECTIVE
Basic numeracy

ZIMBABWE
IGATE-T

LEARNER PROFILE
Primary and secondary school age girls

LEARNING OBJECTIVE
Literacy, numeracy, financial literacy and life skills

UGANDA
onetab Hub Heroes

LEARNER PROFILE
Primary school age children

LEARNING OBJECTIVE
Literacy and numeracy

2

What is remote learning using mobile technology and why is it used?

2.1

What do we mean by remote learning using mobile technology?

For the purpose of this pack, remote learning using mobile technology is being defined as *using mobile technology to facilitate learning for children and young people, from a distance*. In this pack, it is often referred to as 'mobile learning'.

Mobile learning can be done through:

learners' directly accessing learning materials or applications through a smartphone, tablet or other mobile device;

parents' or caregivers' receiving learning activities via WhatsApp or SMS on their smart- or feature-phone and sharing these with learners;

voice calls on mobile devices to learners and/or parents/caregivers.

Mobile learning is often described in terms of technology or media. This runs the risk of taking focus away from the learner and learning, by putting technology before education. In contrast, a 'pedagogy-first' approach[1] starts with consideration of the learner and learning, and then considers how technology might enable or support learning. This approach is discussed in Resource Pack 1 which provides an introduction to remote learning.

The case studies presented in this pack explore how different remote learning programmes, using mobile technology, have tried to use a pedagogy-first approach. How have learners' current knowledge and skills provided starting points for learning? What kinds of learning activities did programmes promote and in what ways did these enable children to learn together? Who guided or supported learners' participation in remote learning, how or why were they motivated to do that and what difference did that support make to learners?

Why is mobile used for remote learning?

Mobile phone access and use is becoming increasingly widespread. In some cases, household ownership of mobile phones may be greater than that for TV or radio. For example, when the state of Edo, Nigeria, was considering options for remote learning, it chose mobile partly because 91% of households had access to mobiles, while access to TV was at 69% and radio at 46%.[2]

Where learners have access to smartphones and supporting infrastructure, mobile technology can deliver rich opportunities for learning, using a variety of media and interactive learning activities. Mobile apps can offer personalized and adaptive teaching, spaced repetition, assessment for learning through rapid feedback, collaborative learning and peer assessment. In contrast, simpler mobile devices can open up learning opportunities to the most marginalized learners through WhatsApp, SMS and phone calls.
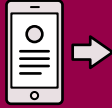
2.3

Models of remote learning using mobile technology, as seen in COVID-19 responses

Remote learning programmes have to respond to diverse challenges and contexts. The responses do not always fit into neat 'boxes', but the models below provide a useful framework.

Mobile learning models	Typical context of use
1. Learners use sophisticated learning platforms or apps.	**A.** Learners have ready, individual access to smartphones or tablets and broadband internet, possibly through their own devices.
2. Learners, caregivers or community volunteers access learning materials from an online repository or social media platform – often as a supplement to core content broadcast on radio or TV.	**B.** Learners have limited access to smartphones or tablets and broadband internet through their household or their community.
3. Learners, caregivers or community volunteers are provided with mobile devices preloaded with learning content or apps.	**C.** Learners have little or no access to smartphones or tablets and broadband internet in their household or community. Learners may have household access to basic mobile phones.
4. Learners receive learning activities through phone calls or SMS messages on caregivers' phones.	

The following examples highlight key features of these mobile learning models.

Model	1. Sophisticated learning platforms or apps	2. Learning materials accessed from an online repository or social media	3. Providing mobile devices preloaded with learning content or apps	4. Learning activities through phone calls or SMS on caregivers' phones
Example	BYJU'S, India[3]	EdoBEST@Home, Nigeria[4]	Hub Heroes, Uganda[5]	Remote learning, Botswana[6]
What's the context?	In India, household smartphone access is high and data costs are low, compared to other regions. BYJU'S launched 'The Learning App' in India in 2015, which now has 47 million registered users and over 3 million paid subscriptions, making BYJU'S the largest EdTech service provider in India. Subscriptions increased by 6 million when the subscription fee was temporarily suspended in March 2020.	EdoBEST@Home is an initiative of the Edo State Government to ensure that every child in the state can continue learning while schools are not open. This remote learning programme uses mobile technology to reach learners due to the high prevalence of mobile phones in Edo State - around 90% of households have a mobile phone. EdoBEST content is provided free to students through free, zero-rating internet access and WhatsApp.	Hello World gave onetab to 100 mothers (the heroes) to use within the home. The 100 tablets were preloaded with the onecourse app. The mothers' commitment was to supervise their children's daily learning with the tablet, at home. On average, each mother was helping five children learn. Heroes charge the tablets at a weekly 'hub' meeting, where they also share their experiences of helping children learn.	The 'Teaching at the Right Level' (TaRL) programme is a 30-day remedial education intervention implemented one hour a day. In response to COVID-19, the programme adapted and developed a 'low-tech' solution that uses SMS messages and phone calls to provide educational instruction for students.
Who are the learners?	School students from Class 1 to 12	29% of pre-primary and primary students across Nigeria who frequently access EdoBEST	500 primary-aged children in Kampala	Primary-aged children in 10,000 households across Botswana
What are they learning?	A broad range of subjects plus exam preparation.	Core concepts from the Edo State curriculum, including literacy and numeracy.	Basic skills in literacy and numeracy.	Basic skills in numeracy.
How are they learning?	Subjects are explained with 12–20-minute digital animation videos. On average, students spend 71 minutes per day using the app. During the pandemic, BYJU'S have also added 'live classes' with teachers.	Content is delivered through WhatsApp, interactive text messages and an online repository. Content includes interactive audio lessons, practice problems in maths and digital storybooks for reading and comprehension.	After warm-up, children take a short test, then a module created from test results. Children take another test and complete another short module based on results. Children then have a daily short story to read or listen to and can practise in the 'play zone'.	All learners receive a weekly SMS message with mathematics problems. Some learners also receive follow-up phone calls.
How is learning assessed?	The Learning App has recently introduced analytics processing to develop individual guided instruction pathways and provide customized feedback and analysis to learners. BYJU'S also offers the Parent Connect app to help parents track their child's learning.	Daily automated interactive quizzes via mobile phone, with feedback through WhatsApp or SMS.	Learning is continually assessed with twice-daily in-app tests used to generate learning modules.	Regular follow-up phone calls, to parent and child, to check understanding and progress.
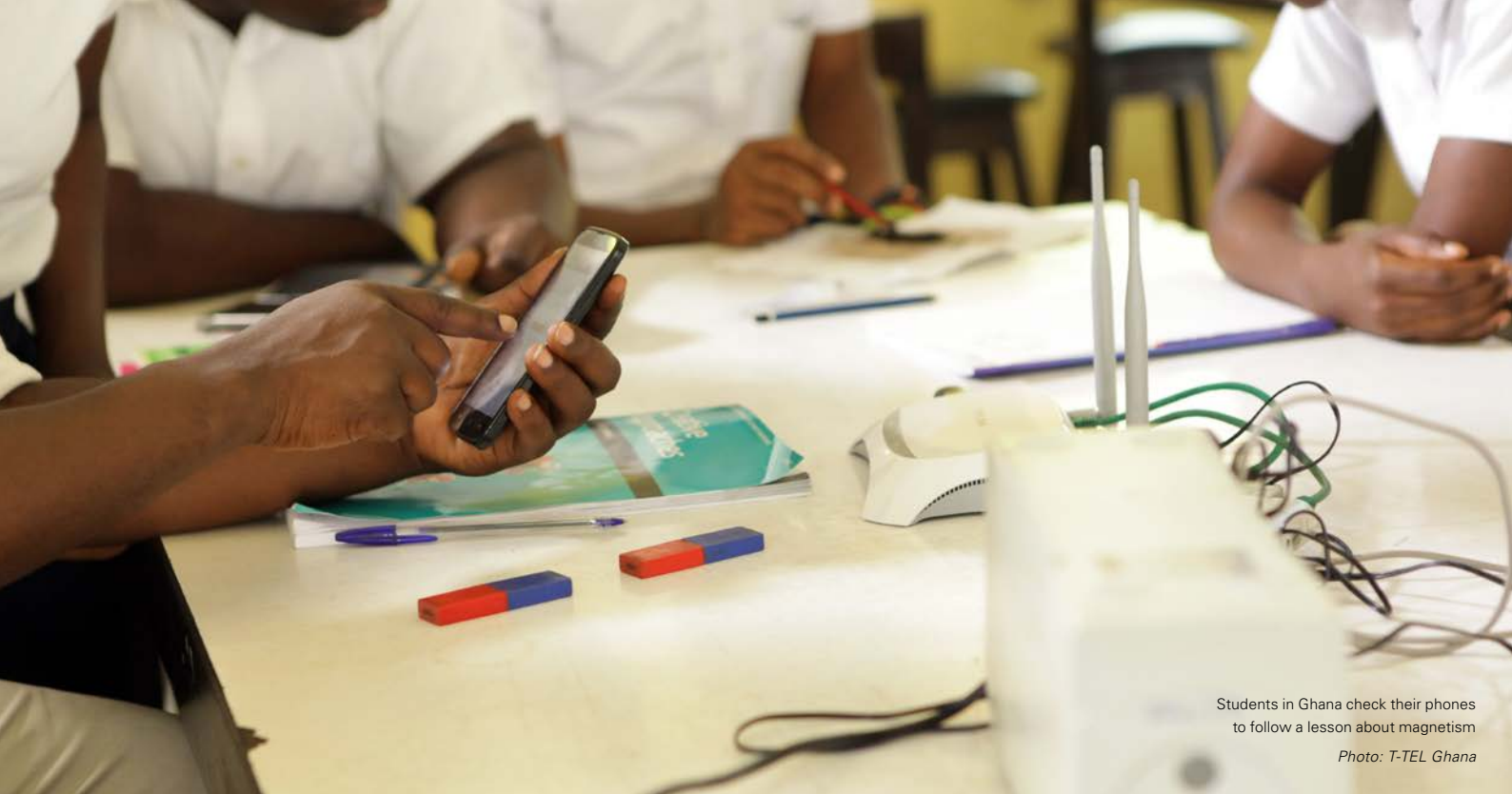
Students in Ghana check their phones to follow a lesson about magnetism
Photo: T-TEL Ghana

2.4

What are potential limitations of remote learning through mobile technology?

A number of potential challenges face remote learning programmes using mobile technology:

- access to mobile devices can vary widely, depending on gender, household income, urban or rural location and many other factors;

- traditional phones with no Internet browsing abilities have a learning experience that is very limited; battery life (usage) may also not last long and electricity constraints should be assessed;

- connectivity and data costs can equally show huge variation, potentially exacerbating existing inequalities;

- using mobile technology can reduce social interaction and collaboration between learners, with learners being isolated and working on their own;

- learners can also be isolated from teachers and others who can mediate and support their learning; in turn, teachers and others may feel bypassed and lacking any clear role or opportunity to support learners.

For more guidance on challenges and opportunities, such as regional statistics on mobile penetration, go to the Knowledge Pack prepared by the World Bank about Mobile Distance & Hybrid Education Solutions at http://pubdocs.worldbank.org/en/685691598013656403/WorldBank-EdTech-Team-Knowledge-Pack-MobileDistance-HybridEducationSolutions-version2.pdf. Countries should also evaluate the pros and cons of deploying remote learning strategies using mobile phones.

3

Preparing for remote learning programmes using mobile technology

3.1

Knowing the learners and their context

3.1.1

Who are the learners?

Understanding who your target learners are helps to design or strengthen a programme with learning activities, resources and support that meets their needs and enables them to succeed in learning.

To understand the learners fully, you will need to test existing assumptions and gather information on learner characteristics and context. You may seek answers to questions such as:

What are the ages of learners?

Are they male / female?

What learning skills do they bring?

Who do they have to help them?

What motivates their learning?

What is their first language(s)?

What resources do they have to help them?

What do learners see as their needs?
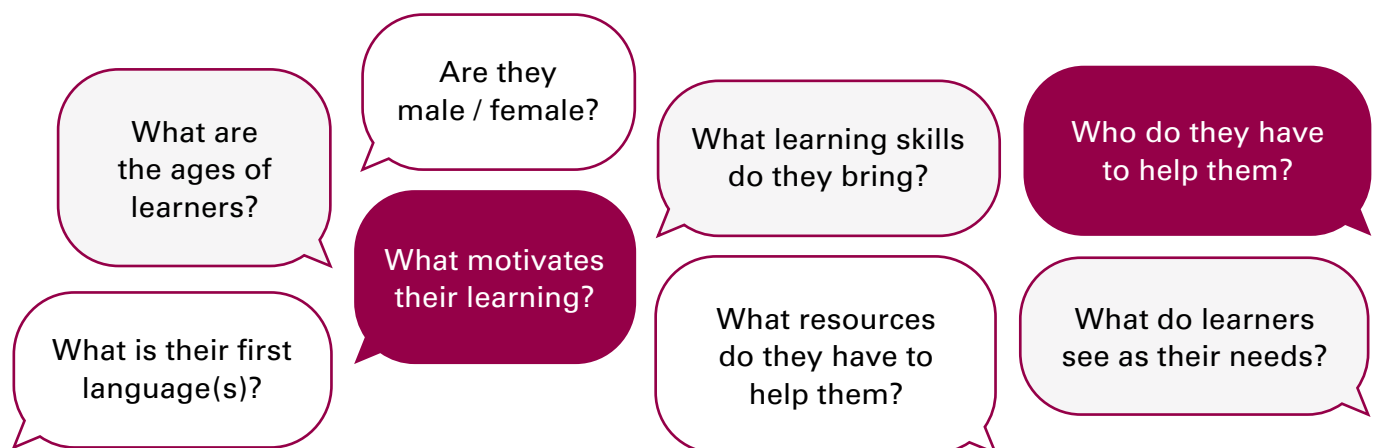
Information can be gathered in different ways. For example, you can consult existing data sources, such as government or project databases. You can also interview target learners, teachers and community members, who will be able to give rich and different perspectives. If you are seeking to strengthen or expand an existing programme, collecting insights from those already participating in the programme can be a powerful way to review your original design assumptions.

A 'Learner Profile' (see reflection task below) enables you to capture key characteristics of the learners you aim to reach, so that you can gain a deeper understanding of their needs. The Learner Profile tool can be used before you start a new programme. It is also useful for periodic reviews of ongoing programmes, to incorporate new insights you may have gained about the learners.

You may want to create different Learner Profiles for different target groups of learners, so that your programme is inclusive of all those you seek to reach – for example, learners in remote rural communities with limited access to electricity and connectivity, girls who may have significant caring or chore responsibilities, and learners with visual impairments.

Reflection task

Learning is active and must start with where the learner is.

The **Learner Profile Tool** helps you identify the important characteristics of the learners you are trying to reach (your target audience) so that you can think about how they might affect their engagement with remote learning using mobile. Knowing more about your target audience will help you design an accessible programme that addresses their needs and interests.

To complete the tool, imagine a typical learner in your target audience. Then, ask yourself questions about the learner. Make a note of the characteristics you think of and then think about the implications of these characteristics on the programme you are designing. For example, what do the characteristics tell you about when they will have time for learning, who is at home or in the community who could help them if they get stuck, or what kind of content will interest them?

Who are they?

– How many learners with this profile are you likely to have on your programme?
– What are their age(s)?
– Are they female and/or male?
– What is their first language(s)?
– Do they have families around them?
– Where are they (e.g. rural homestead, urban shanty)?

What motivates their learning?

– Why are they learning?
– What do they want from the programme?
– What challenges do they face in trying to learn?
– What interests and experiences do they bring that are relevant?

What do we know about their learning?

– What learning skills do they have (e.g., reading ability)?
– What experience do they have of self-study?
– Are their parents willing and able to help them learn?
– Is there anyone else who can help them to learn?
– Will they be able to interact with other learners?

What do learners see as their needs?

– What is important to the learners, their contexts and their goals? (List 3 - 5)

What do we know that is surprising?

– What have you learned from speaking to learners and those who support them? (List 3 - 5)

What are the implications for learning design?

– What is the learning purpose that meets these learners' needs?
– What size, nature and content of learning materials will be relevant and feasible for study?
– Who will provide them with support? What type of support and how much support will be possible?
– How will materials and support reach these learners in ways that are timely, feasible and affordable?
– How will their progress be assessed?

What resources do they have to help them?

– How much time will they have available for study?
– Where, when and how will they be learning?
– What learning resources and media can they access?
– Will they have access to local facilities, e.g. study groups, libraries?
– Who will pay any expenses or fees?

What technology do they have access to?

– Can they access a radio/ TV/mobile phone/internet within the home?
– Do they need consent of others to use them?
– For how long and how often can they use them?
– If not, is there community-shared access?

Learner Profile Tool

Brief description of targeted learner:

Who are they?

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What motivates their learning?

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What do we know about their learning?

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What resources do they have to help them?

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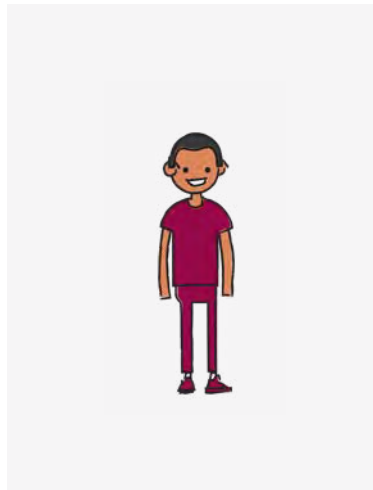
What do learners see as their needs?

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What technology do they have access to?

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What do we know that is surprising?

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What are the implications for learning design?

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3.1.2

What is their context?

Understanding how and why mobile devices are already being used by children and/or their caregivers and how other education, health and entertainment initiatives use mobile technology in this context will help you design relevant and accessible programmes.

Gathering information about what is already happening will help you to leverage existing initiatives, platforms and investments. It will also make you more aware of potential challenges and able to build on existing responses and successes. Mobile technology is a fast-changing landscape and such a review will be as relevant to strengthening an existing programme as to designing a new one. Non-educational uses of technology may often give early signposts of what is now possible and feasible. Such a review can include initiatives where children directly access and use mobile devices and initiatives where mobile devices are used by adults in ways that benefit children. Information may be obtained from many sources: for example, published reports; newspaper articles and online blogs; interviews with parents, learners, community leaders; online surveys; and social media discussions.

You may seek answers to questions such as:

Who accesses and uses mobile devices in your target areas, and for what purpose(s)?

What barriers may users face in these communities?

What education initiatives are already being implemented in this context?

Who are the key organizations and people involved in implementing mobile networks?

If you would like some ideas about collecting information about context for using mobile technology for education, see the Context Review Tool in the next reflection task.

For additional guidance, see the World Bank's Mobile Distance & Hybrid Education Solutions: Knowledge Pack: Section 2 'Should we use mobile in our context?' at http://pubdocs.worldbank.org/en/685691598013656403/WorldBank-EdTech-Team-Knowledge-Pack-MobileDistance-HybridEducationSolutions-version2.pdf.

Reflection task

Context Review

Try using this Context Review Tool to establish the context for your programme. Consider the following questions. The notes you make on the next page will create a snapshot of the context for your programme – and it will help you identify opportunities and threats to success.

Who accesses and uses mobile devices in your target areas, and for what purpose(s)?

— Which mobile devices are currently in use in the communities where your target learners live?

— Who in the community are using these devices?

— For what purposes are they using these devices are any of these purposes for learning?

— Which functions (from phone calls and SMS to offline content and WhatsApp groups, apps, smartphones and online content) do they use for these purposes?

— Are learners able to access mobile devices directly or is access through parents/caregivers?

What barriers may users face in these communities?

— Does gender affect the extent of access to and use of these devices?

— How easy or difficult is it to charge the devices for regular use?

— If children have direct access to mobile devices, how many hours per week is this access likely to be for?

— How much data can users afford to use each week?

— To what extent do the devices use language(s) and digital skills that are familiar to most people in these communities?

— Are these devices accessible to children with disabilities?

What education initiatives are already being implemented in your context?

— Do they use mobile devices? If so, what is the role of these devices?

— Are organizations providing the devices and resources for education, and if so, which organizations?

— Which learners are these initiatives aimed at?

— What are the learning purposes of these initiatives?

— What is the scale of these initiatives?

— What types of learning activities do they use?

Who are the key organizations and people involved in implementing mobile networks?

— Who are the big mobile operators and what is their policy towards education initiatives? Do they have education projects or platforms themselves?

— Who is (are) the main regulator(s) and what is the regulatory framework? What influence might the regulator(s) have over the services and service costs of the mobile operators?

— Which organizations are already using mobile devices and networks for social purposes, for example, for health initiatives in response to the pandemic?

— What is the scale of this social use in terms of numbers of people reached and functions used?

Reflection task

Context Review (continued)

Who accesses and uses mobile devices in your target areas, and for what purpose(s)?

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What barriers may users face in these communities?

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What education initiatives are already being implemented in your context?

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Who are the key organizations and people involved in implementing mobile networks?

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3.1.3

Which model(s) of mobile learning?

Understanding the learners and their context helps to indicate which model(s) of remote learning using mobile technology may be most relevant and accessible

It may now be helpful to confirm which of the model(s) in the framework in section 2.3 appear most relevant for your programme.

Model 1
Sophisticated learning platforms or apps

Model 2
Learning materials accessed from an online repository or social media

Model 3
Providing mobile devices preloaded with learning content or apps

Model 4
Learning activities through phone calls or SMS on caregivers' phones

3.2
Defining the learning purpose

3.2.1

What are the children learning?

Having gained an understanding of who the learners are and of their context, the next step is to reflect on the learning purpose – what you want these learners to know, understand or be able to do. Without defining this clearly, there is a danger that the approach will not reach the target audience, the learning activities and resources will not be sufficiently tailored to their needs and the delivery mechanism may miss opportunities to support learning. The existing curriculum will have intended learning standards and objectives, but these will need to be reviewed and potentially rethought in the new context of the mobile learning programme; previous expectations may not now be realistic or as relevant.

The model of mobile learning may relate to what might be reasonably expected in terms of learning outcomes. For example, what capacity is there for developing collaboration, empathy, creativity? Is a particular model better suited to developing foundational skills, such as literacy and/or numeracy?

Critical to the above is understanding the current level of children's learning. As set out in Resource Pack 1, the World Bank[7] estimates that many children are not yet at the expected level for their respective grades. If, for example, children and young people struggle to understand simple written sentences, they will find it challenging to learn independently using text-based media accessed via mobile devices. Encouragingly, research shows that even very young children approach learning as 'competent, active agents of their own development' and mobile learning programmes that address learning poverty do well to focus upon what children bring to their learning, rather than what they lack. One illustration of this is the enormous capacity for children to help each other's learning, as seen in this account from a remote learning champion talking about learning circles in Zimbabwe:

> *What I do is, when they come with their books and pens, they write the activity down first and as for those who did not understand clearly—they get help from those who have understood. That is when you realize that some of them, when they are reading from their books, they quickly understand it... in that way I will be able to see their performance and quickly identify those who need help so that they can get help from others in the group.*

Reflection task

Defining the learning purpose

Having clarified the learner profile, it is worth taking some time to articulate the intended learning purpose, remembering that not all learners will have started from the same point or learn at the same pace:

— What age, grade or group of learners are you targeting?

— What relevant knowledge and skills do these learners already have?

— What skills do you want these learners to practice and/or advance?

— What are your expected learning outcomes?

— Why is it important that these learners gain these skills now and for their futures?

— What is the timescale available for learning?

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3.2.2

How are they learning?

Thinking about the different planned learning elements of the programme and how learners will experience these over time will help you to see if all the different elements work together towards the learning purpose.

Based on your selected model(s) of mobile learning, you will have a sense of how learning content may be delivered – for example, through online repositories, offline apps, WhatsApp or interactive text messages, and how learning might be supported, e.g., via caregiver involvement or children learning together.

You may want to map out what learners are being expected to do and the support they are expected to receive in a typical week (see example below) or, if more appropriate, over a longer period. This can help you think about what is being designed from the learners' perspective and whether what is being asked is reasonable and realistic. You can do this before you start a new programme and, as importantly, when reviewing an existing programme to see if the improvements you plan are feasible for learners and whether they streamline or add to the workload for learners.

Possible activities during a typical week of remote learning

Monday	Tuesday	Wednesday	Thursday	Friday
interactive podcast, quiz, practice activities	interactive podcast, quiz	interactive podcast, quiz, practice activities	interactive podcast, quiz, teacher phone call	interactive podcast, quiz
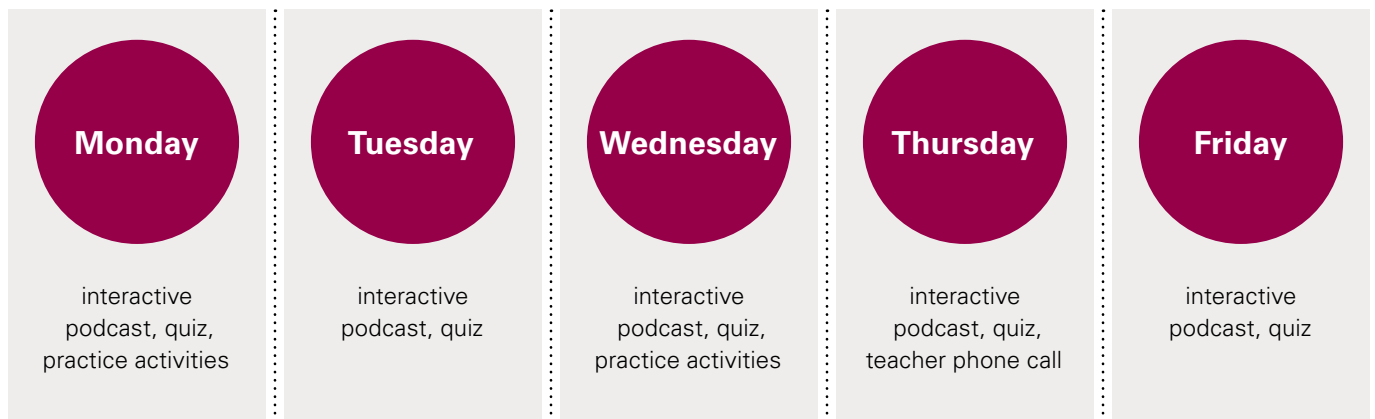
3.2.3

How is learning progress recognized and feedback given?

Considering this helps you to build assessment for learning into the programme in ways that enable all involved to see if progress is being made towards the learning purpose.

In practice, children are often not sure of the purpose of what they are doing in class, or what might follow. This is easily exacerbated in remote leaning contexts. Nevertheless, to make learning gains, children need to know a great deal about their educational journey. They must:

	have clear goals
	know how and when they are going to study
	be able to see their progress
	receive timely and appropriate feedback
	celebrate success

Equally, caregivers have a key role in supporting children on their learning journey, and so they need to understand the learning goals and their child(ren)'s progress against them.
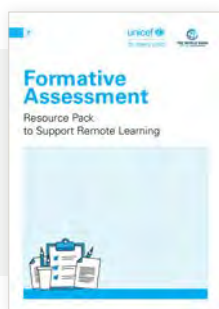
FURTHER DEVELOPMENT

Resource Pack 7 is about Formative Assessment (assessment for learning). It explores a range of ways in which different programmes have approached recognising progress and giving feedback to learners.

3.3

Finding and adapting learning activities and resources

3.3.1

What approaches to teaching and learning will you use?

Considering the types of learning activities that learners will be engaged in will help you make the programme motivating, allow learners to build on previous knowledge and skills without being repetitive, and give time for learners to practise new skills in meaningful and useful ways.

In particular, if learning is to be active and social, it is critical that you think carefully about how learners will be learning. In what can be very pressing timescales in periods of crisis, it can be tempting to be driven by focussing on a search for resources. This can unintentionally lead towards content-led instruction without exploring alternative ways of teaching and learning.

Effective learning will harness a young person's interests and develop their identity and curiosity. Learning activities will have a routine, structure and rhythm. School provides a structured environment for learning; mobile learning programmes also need a rhythm to the day and the week, for example, by structuring the release of learning materials and activities. Children will be adapting to a learning style very different to any previous experiences in school, in addition to learning new subject concepts and skills. Providing a pattern to activities can help with this; for example, using the same numeracy game at different points across the programme for different operations, so that the learner only has to learn the game itself once.

Mobile technology can provide new tools for alternative ways of teaching and learning for children;[8] for example, team learning, problem solving, spaced practice and flipped learning.

3.3.2

How and where might you find such activities and resources?

Avoid reinventing the wheel, unless you have to! Many high-quality Open Educational Resources (OERs) are now freely available in online repositories and resource hubs for reuse, with advanced search engines to help find those relevant for your purposes. These OERs can include many types of activities; such as individual activities shareable via SMS or WhatsApp, storybooks, audio lessons, animations and other learning content; simulations, games and other learning applications; and quizzes and assessment tools. Moreover, other organizations, institutions or businesses may be willing to give you their content, especially if it helps them achieve their goals, brings them a bigger audience or brings them recognition.

Selected OERs will need to link to the programme's learning purpose and relevant curriculum, standards and objectives.

Well-known repositories include:

African Story Book

https://africanstorybook.org/

Kolibri

https://learningequality.org/kolibri/

Storyweaver

https://storyweaver.org.in/open_content

Khan Academy

https://www.khanacademy.org/
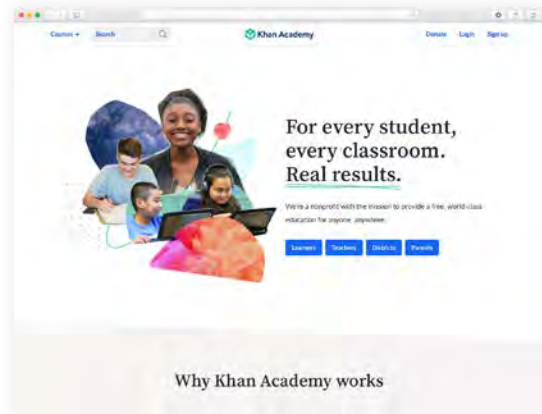
For any repository, first consider the overall quality of the resources. Ask yourself:

- Who created them?

- Do they look to be accurate and well presented?

- Are there any reviews or information from educators who have used them?

Also take time to understand the licence – for example:

- Is it clear how the resources are licensed?

- What does the licence allow you to do with them?

- Do you need to attribute or ask for any permissions?
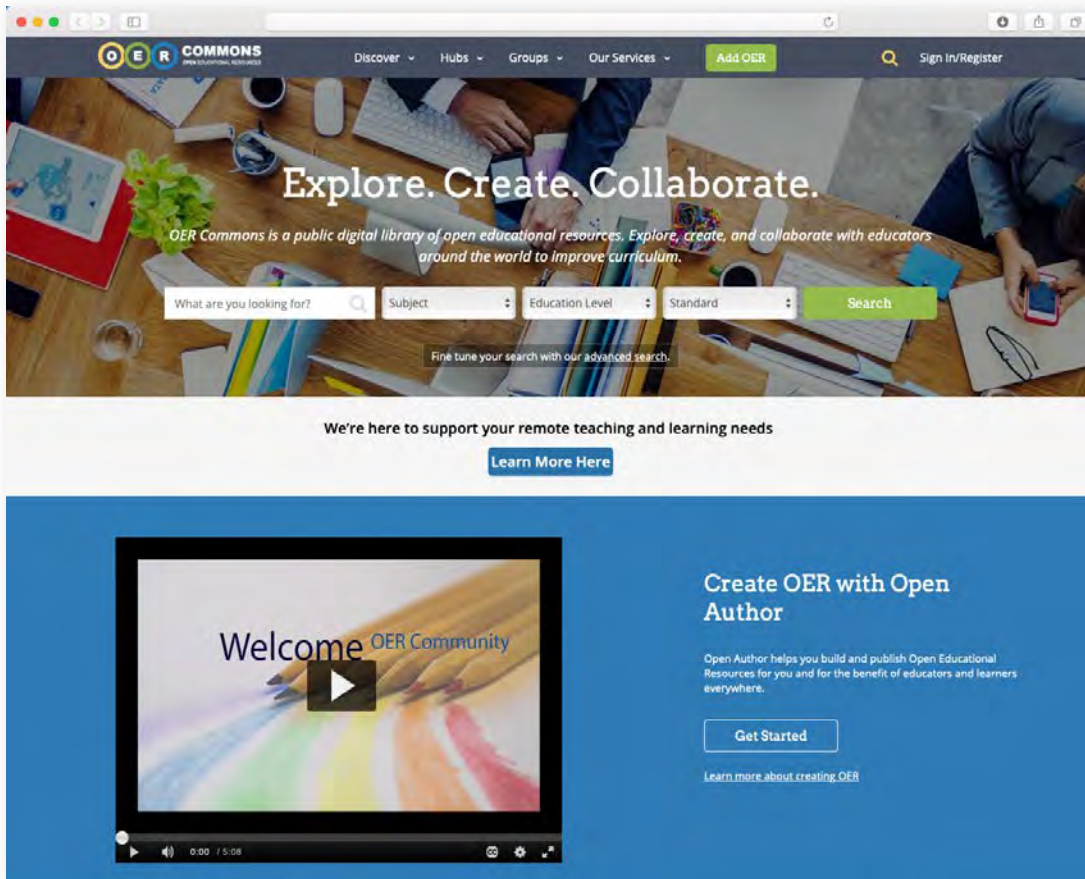
OER Commons

oercommons.org/

TIP

Selecting appropriate resources

If you do decide to use existing resources, share guidance with content developers to help them select appropriate resources.

- Are they at an appropriate level that reflects where learners currently are?

- Is it easy to understand what you are expected to do?

- Do they build from what learners bring and encourage independent thinking?

- Are they active, engaging and relevant to the learners?

- Do they encourage collaboration with other learners/people around the learner?

- Do they fit with the amount of learning time available?

- Do activity types and games repeat, so that learners do not constantly have to learn new ways to learn?

- Is there a clear learning journey building to the final learning outcomes in ways that gradually introduce more challenging concepts?
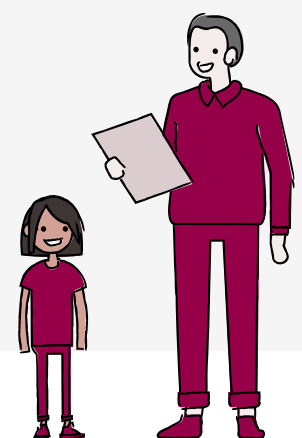
Reflection task

Effective learning activities

What do you think effective learning activities look and/or sound like for the learners you are trying to reach?

Choose one or more learning activities/resources using the links to the right. Ask yourself the following questions:

— Do you feel that the learners you work with would enjoy this activity or resource? Which aspects might they like? Which aspects might they find less engaging?

— Are the learning objectives clear? Do you think children would learn from the activity?

— What are the learners required to do during the activity or when using the resource?

— How are new ideas and concepts explained? How do learners then engage with that new idea or concept?

— Would the activity/resource work better for some learners than others? For example, how appropriate are they for learners with disabilities? What knowledge and skills do you need to engage effectively (e.g., what level of reading ability is required)?

— What adult or peer support would children need to guide and practise their learning?

— What features do you find interesting and potentially effective for learning in your context?

— What could be improved?

— What are the implications for your development of learning activities and resources?

Example Resources

Numeracy app (model 1)
https://onebillion.org/onecourse/numeracy/

Reading story (model 2)
https://www.africanstorybook.org/

Daily literacy activity (model 3)
https://tinyurl.com/atanf9zc

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3.3.3

How can you adapt selected activities and resources?

A huge benefit of OERs is that most of them can be adapted to better suit your teaching and learning environment, the learners and their lives.

OERs can be adapted in many ways: you can adapt individual OERs and you can also 'stitch' multiple OERs into a new resource. OER Africa has prepared a concise learning pathway to help acquire the practical skills to do this quickly: https://oerafrica.org/content/adapting-open-content

TIP

There are simple and quick adaptions that can positively impact on learning.

- Creating local language audios or animations to give an introduction to the programme for learners, caregivers and others, so that that they understand what and how learning will happen

- Providing introductions and questions to think about before and after learning activities through local language voiceovers

- Translating resources into different languages

- Contextualizing resources to use local names, places, events, etc.

- Adding stories that speak to the lives of the learners as ways to engage and connect with learning

- Using scripts of existing OER audio lessons and recording yourself using local speakers to aid understanding, relevance and context

- Making videos or animations of key learning activity types and games that repeat across the programme, so that learners and others can see how they work

- Adding pictures and visualizations of your own to aid understanding and context

- Adding additional content, questions and exercises

Two young teachers in Ghana use a phone to plan teaching.

Photo: T-TEL Ghana

3.4
Considering design testing

As learning materials, technology and learning support strategies are planned and designed, assumptions will be made about how learners and communities will respond and use these. Using rapid smart ways to test out your assumptions at the design or re-design stage can save time and money, as well as avoid making expensive mistakes.

Design testing can look at different key aspects of your programme, from logistics to content to assessment for learning. The purpose is to ensure, as far as possible, that the programme works in the way it was designed before learners engage on a wider scale. The chart on the next page lists some possible areas of inquiry.

One approach to testing is through 'sandboxes'. A sandbox is a real-life location used for experimentation and creates a small and contained space to test a proposed intervention, or elements of that intervention, drawing together key stakeholders at community, school and system levels. These rapid cycles of planning, action and reflection allow promising approaches to be developed, whilst others less promising can be dropped. The following series of blogs explain more:

https://edtechhub.org/2020/01/28/sandboxes-our-approach-to-systemic-experimentation/

https://edtechhub.org/2020/01/31/sandboxes-testing-the-strategy-in-malawi/

https://edtechhub.org/2020/01/31/sandboxes-my-experience-participating-in-the-sandbox-alpha/

Design testing inquiries
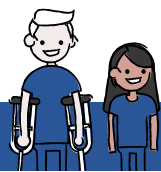
Access & Equity

Are children from marginalized groups able to access the learning and media materials easily?

Are the learning media and materials relevant to girls and their lives?

Do adaptations for children with disabilities meet their needs?

Are the activities pitched at a level that learners find easy to use and understand?

Do distribution processes work in a timely manner for all communities?

Are costs to learners and/or parents/caregivers minimised and affordable?

Quality Learning & Support

Do the activities and materials motivate learners and keep their interest?

Are the activities and materials in language(s) that all learners understand?

Where activities encourage learners to work together, is this in ways that are feasible in practice?

Are caregivers able to understand and do what is expected of them?

Is what is asked of those supporting learners practical, feasible, and sustainable over time?

Are teacher development and support mechanisms practical, feasible, and sustainable over time?

Using Assessment to Support Learning

How effective are tools to guide learners to their next learning steps?

Do learners receive feedback that they can understand?

If there are quizzes and games to assess progress, do learners understand how to complete them?

Do mechanisms to recognize learners' achievements motivate the learners in practice?

Are you able to give feedback to caregivers in ways they understand and value?

Are processes for teacher feedback feasible and timely?

4

Developing an effective remote learning programme using mobile technology

A number of potential challenges face remote learning programmes using mobile technology. The case studies in this pack give examples of the different ways in which mobile programmes have responded to each of these.

These potential challenges are grouped into three broad areas:

1 Access and equity

How successfully does the programme enable all the learners in the target group(s) to access the programme? How equitable is that access for groups that are often marginalized, including girls, children with disabilities and children from rural and low-income households?

2 Quality learning and support

In what ways does the programme meet learning needs? Who supports learning and how do they do this?

3 Using assessment to support learning

How is assessment of learning used to inform programme design? How is assessment for learning used to guide learners through the programme and celebrate success?

Access and equity

4.1.1

Equitable access

"Compared with the richest children, the poorest children are four times more likely to be out of school and five times more likely not to complete primary education."[9] Mobile learning may reinforce existing inequalities, since people's access to and use of mobile technology can vary with age, socio-economic status, language, gender and urban or rural location.

Even where household mobile phone ownership is high, lower-income households may be less likely to have access to smartphones or, in some regions, be able to afford expensive data charges. Rural households are less likely to have reliable high-speed data coverage. Within households, women and younger children may have less access to personal or shared mobile devices than older males. All of these factors can limit children's ability to benefit from mobile learning programmes.

Potential ways to expand access and reach include:

Providing mobile devices with preloaded content

For some households, which cannot afford devices or are not well served by data networks, providing mobile devices preloaded with offline content may be appropriate. This approach is suitable for learners in the most disadvantaged households or communities.

CASE STUDIES

Argentina – Educ.ar[10]

Educ.ar uses broadcast TV and radio to deliver educational content and also makes its content available online. The Ministry of Education has provided tens of thousands of mobile netbooks, preloaded with their curated digital content, to students from the most disadvantaged households.

Kenya – eLimu[11]

eLimu have provided ruggedized tablets to community centres in refugee camps. eLimu preloaded the tablets with Somali-language stories and writing activities to help young people who would not otherwise have access to mobile learning.

Using low-tech modes (WhatsApp or SMS) to distribute no-tech activities

Where household access to smartphones or data connectivity is too low to support mobile learning, some programmes use mobile phones as a distribution mechanism for 'offline' learning activities that children can complete without a mobile device.

CASE STUDIES

Zimbabwe – IGATE-T[12]

IGATE-T uses WhatsApp to share 'daily learning activities' in literacy and numeracy for children in low-income rural communities. The project chose WhatsApp because smartphone users typically buy their data through WhatsApp and could only access this platform. Even so, many households do not have access to smartphones, and so IGATE shares the activities with local education Champions with WhatsApp access. All of the Champions then find other ways to share activities with children in their villages, through informal learning circles or caregivers.

Botswana – Remote Learning[13]

Remote Learning uses SMS to share learning activities in numeracy for children in low-income households. Some households receive additional support through voice calls. The programme chose voice and SMS due to high levels of household ownership of basic mobile phones.

Using voice calls to support learners and caregivers

Where smartphone access or data connectivity is too low for mobile learning, it is also possible to support remote learning just with voice calls to learners and caregivers.

CASE STUDY

Bangladesh – BRAC pilot of remote learning through basic phones[14]

The BRAC pilot of remote learning through basic phones reached 80,000 children from low-income households who usually attended non-formal schools. Their teachers hosted twice-weekly telephone lessons for groups of four or five learners at a time. Initially focussed upon psychosocial support, the lessons moved onto a core curriculum of Bangla, English and math, with story time and drawing.

Reducing the cost of access to educational content

Mobile learning programmes can increase equity by reducing the financial barriers to content access, such as 'paywalls' and the cost of mobile data.

CASE STUDIES

India – BYJU'S

BYJU'S is an online tutoring app with the largest market share for EdTech in India. BYJU'S delivers teaching through animation, with a 'freemium' subscription model. Two weeks of free access are followed by paid subscription at over $100 per annum. In March 2020, the 'free' period was extended due to the pandemic, resulting in over six million additional users signing up in a single month.[15]

Turkey – Özelim Eğitimdeyim[16]

Özelim Eğitimdeyim (I am special, I am in education) uses a mobile app to support students with disabilities in distance education. Mobile network providers have provided each learner with a monthly allowance of 8GB of data, to widen equitable access.

Nigeria – EdoBEST@Home[17]

EdoBEST@Home has increased equity by reducing the financial barriers to content access through the zero-rating of EdoBEST@Home digital resources.

The COVID-19 pandemic prevented more than 260,000 primary school students in the EdoBEST programme from being physically present at school. In response, the State of Edo launched EdoBEST@Home, a mobile-based remote learning programme for all students from pre-primary to junior secondary, in EdoBEST and other schools in the State. The delivery methods combine WhatsApp, interactive text messages and the EdoBEST@Home web platform. The programme chose to use mobile learning as data showed more households had access to mobiles (91%) than to TV (69%) or radio (46%).

Moreover, MTN, a telecommunication operator in the State, agreed to zero-rate EdoBEST@Home digital resources so that students and teachers could access all educational resources available without paying for the bandwidth.

The remote learning programme enables students to learn from resources that can be downloaded free of charge from an online repository while at home. 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 online, and mobile interactive quizzes for students to use at home every day.

All programming focuses on content from the curriculum and has been created 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, mathematics instruction and practice, and songs and games.

Parents, caregivers and teachers are equipped with tools to help them effectively support students through the remote learning process. For example, friendly learning guides, which have been designed to be used by a member of the household with the student, have targetted practice exercises and answer keys to allow caregivers and children to reflect on the results.

Students can access daily interactive quizzes through a mobile phone. Quizzes help students to practise and retain what they learn. They receive instant automated feedback through WhatsApp or a text message.

Learning and development supervisors and quality assurance officers coach teachers and support them while they are using the EdoBEST@Home platform. For those teachers without smartphones, extra face-to-face support is provided.

Reflection task

Thinking about equitable access

– Are there telecommunications operators in your context that you can collaborate with?
  The following link gives practical examples of how to work with telecom providers at scale:
  https://blogs.worldbank.org/education/how-ministries-education-work-mobile-operators-telecom-providers-isps-and-others-increase

– Are there other ways in which you can remove or reduce data costs for learners' families?

– What kind of challenges might parents and caregivers face in supporting learners?

– What kind of challenges might teachers face in supporting learners?

– Are there other approaches that are already being used in your context that respond to these issues?

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4.1.2

Gender

Gender refers to the socially constructed roles, responsibilities, and identities for girls, boys, women and men, and how these are valued in society. They are culture-specific and they change over time. Gender identities define how girls, boys, women and men are expected to think and act. Crises such as the COVID-19 pandemic have the potential to magnify inequalities.

Recent studies point to growing evidence that girls are often *"…excluded from the digital space and are less likely to know how to operate smart devices, navigate the internet, use social media and understand digital safety."*[18] Remote learning programmes should consider how they can improve opportunities for girls' access and participation, to avoid replicating such inequalities. This includes adopting gender-sensitive pedagogies in their materials and support for learners. An approach to curriculum design which places the learning level and local context of the girl at its heart is recognized as one of the key lessons learned from programmes within the UK Foreign, Commonwealth & Development Office (FCDO) Girls' Education Challenge portfolio (GEC, 2019).

Underlying gender issues, such as attitudes to girls' education, the unequal burden of household chores, or the risks of teenage pregnancy during school closures, may present significant barriers to girls' remote learning beyond those specifically related to mobile technology.

Useful resources for further reading

EdTech Hub (2020) *Girls' Education and EdTech: Rapid Evidence Review*
http://doi.org/10.5281/zenodo.3958002

Girls Education Challenge (2020) *Priorities and Practices: Early Lessons from the COVID-19 Pandemic*
https://girlseducationchallenge.org/media/k0lbfq5f/lftf_covid-19_gec_project_response_june_2020.pdf

INEE (2019) *Guidance Note on Gender*
https://inee.org/covid-19/resources/gender

A rapid review[19] of evidence on gender and COVID-19 responses by the EdTech hub drew four key findings:

1 Girls typically have less access to technology than boys, at home or school, due to gendered assumptions about competence, enjoyment or risk.

2 Increasing girls' access to technology can be disproportionately empowering, with benefits beyond formal education.

3 Parents and educators can act as gatekeepers preventing girls' access to EdTech – education programmes need to address both of these groups.

4 Mobile phones may provide opportunities to overcome persistent gender and infrastructure challenges.

Other factors can adversely affect boys' ability to engage in remote learning: for example, with poverty increasing in communities due to COVID-19, the pressure from families for boys to engage in labour work can be overwhelming and time for learning disappears.

The following examples highlight how gender is integral to the design of these programmes.

CASE STUDIES

Bangladesh – BRAC pilot of remote learning through basic phones[20]

The remote learning telephone lessons take place in the context of wide-ranging activities to promote girls' education and wellbeing, including preventing child marriage, girl-trafficking, and gender-related violence, as well as raising awareness of girls' and women's rights.

Zimbabwe – IGATE-T/CHILD[21]

The programme recruited 'champions' to share daily learning activities through non-formal study groups and caregivers. Most of the champions were female and had previously championed girls' education in their schools and communities. Champions worked with boys and girls, but with a particular emphasis to ensure the inclusion of girls. The remote learning programme also took place in the context of wide-ranging work to reduce barriers to girls' education.

India – Telangana remote learning and village learning circles[22]

Before COVID-19, Telangana Social Welfare Residential Education Institutions Society (TSWREIS) supported approximately 150,000 learners, of which more than 100,000 were girls. The programme uses learner-led physically distanced peer learning in village learning circles as an integral part of its programme to continue to reach girls.

4.1.3

Inclusion

"Inclusive education is commonly associated with the needs of people with disabilities... inclusion is broader in scope."[23]

"The central message is simple: every learner matters and matters equally."[24]

Pre-COVID-19, a raft of programmes explored the use of artificial intelligence to advance inclusion – for example, for children with visual disabilities, hearing impairments, autism and dyslexia, and for girls, low-income households, linguistic minorities and refugees, and to promote cultural/religious inclusion.[25]

Yet few of the mobile learning programmes reviewed have made explicit reference to inclusion. The exceptions have been those specifically designed to offer 'inclusive education' for children with disabilities – these used apps designed to support children with disabilities and gave guidance to parents and caregivers on how to support remote learning.

CASE STUDIES

Turkey – Özelim Eğitimdeyim (I am special, I am in education)[26]

The app is an adaptation of the 'generic' content from the national online learning platform, designed to support students with a wide range of disabilities from learning difficulties to sensory impairment.

The app seeks to give easy access to a curated subset of the learning resources available on the national education platform for students with different types of disabilities; to give access to specific resources for parents and caregivers to support their children's learning; to provide technical functionalities that make resources appropriate for different types of impairments; to provide interoperability with major external technological devices supporting children with disabilities; and to embed a social network for users.

These are implemented in very practical ways: for example, the guidance for parents covers setting up a space for home learning and using a calendar to help them to structure the learning activities of their children over time. Technical functionalities include loud text reading from screen, sign language and dyslexia-friendly fonts.

Pakistan – Deaf Reach[27]

Only 5% of the 1 million deaf children in Pakistan were in school before the pandemic. Deaf Reach developed an app, Pakistan Sign Language, to help children and their families learn sign language. By doing so, Deaf Reach intends to make literacy, education and skills training more accessible and to enable teachers and families to help deaf learners.

Pre-existing digital materials are made accessible to deaf children in Pakistan by embedding them in a video and signing the audio explanations.

Credit: Deaf Reach Pakistan

Useful resources for further reading

GEM (2020) *Global Education Monitoring Report, 2020: Inclusion and education: all means all.*

https://unesdoc.unesco.org/ark:/48223/pf0000373718.locale=en

UNESCO (2017) *A Guide for ensuring inclusion and equity in education.*

https://unesdoc.unesco.org/ark:/48223/pf0000248254.locale=en

UNESCO (2020) *Artificial intelligence in education, compendium of promising initiatives: Mobile Learning Week 2020.*

https://unesdoc.unesco.org/ark:/48223/pf0000374644.locale=en

Reflection task

Thinking about inclusion

− In what ways are you engaging hard-to-reach children, especially learners with disabilities?

− What other ways exist to support access to remote learning, from supplementary printed materials to ICT devices, to ensure everyone has access, including learners with disabilities?

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4.2
Quality learning and support

4.2.1
Learning together

Most learners in low- and middle-income countries are not fully proficient in literacy and numeracy skills. They may struggle to follow written instructions. Many will have had few opportunities for independent learning during their schooling. They may struggle to organize and motivate themselves in their learning. Many, especially girls, may be burdened with household or income-generating chores. They may struggle to find regular time and space for learning. Creating opportunities for learners to learn together and support each other can help address such challenges.

In principle, designers can build opportunities for peer support into mobile apps. In practice, children from low-income households may have insufficient access to smartphones – particularly in sub-Saharan Africa – to take advantage of these.

The two examples of children learning together which follow involve students' meeting in person, with or without adult support, while taking steps to keep safe.

Community learning circles facilitated by community learning champions

CASE STUDY

Zimbabwe – IGATE-T[28]

When possible, volunteer 'Champions' facilitated informal 'learning circles' in which groups of up to five learners would come together to complete 'daily learning activities.' The project distributed activity instructions to Champions via WhatsApp, but learners did not need any technology to undertake the activities together. Champions took measures to promote COVID-19 safe learning, such as using facemasks, handwashing and practising social distancing. When learning circles were not possible, Champions encouraged caregivers to encourage and support children to do activities together at home.

Village learning circles facilitated by peers

CASE STUDY

India – Telangana remote learning and village learning circles[29]

This project uses learner-led, physically distanced peer learning in village learning circles as an integral part of its programme to reach disadvantaged learners.

Before COVID-19, Telangana Social Welfare Residential Education Institutions Society (TSWREIS) supported approximately 150,000 learners, of which more than 100,000 are girls.

At the start of COVID-19, TSWREIS explored many ways to quickly reach out to learners through TV and online teaching programmes. It also tried to reach learners through video lessons, prepared by their own teachers, being shared in WhatsApp groups. In practice, however, it was difficult to reach most of the learners, as their parents had no access to televisions or smartphones. Village learning circles were therefore launched.

Older students and peers within communities took care of the gathering of learners in their village and of being accessible to help children learn. They were mostly previous students from the programme and worked voluntarily for the benefit of society wards. These in-person, student-led village learning circles started as the lockdown was lifted in India, when small gatherings were allowed but schools had not begun.

Village learning circles are student-led lessons for peers or for younger children in groups of 5–10, including local children not in the TSWREIS programme. They are based on the video lessons prepared by the teachers and shared in WhatsApp groups. The Circle peer leaders identify the available accommodation, which may be homes, churches, temples, community centres, village council offices or even fields, and often take the initiative in persuading parents and motivating children to turn up to the classes. The Circle peer leaders have access to the online lessons and resources in both online and offline formats.

All participants strictly adhere to COVID-19 protocols. Though there was initially a protest from a few villagers who feared COVID-19, they gradually perceived the need for such circles.

In many cases, community members and religious leaders have come forward to support learners 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 the programme's remote learning strategy to reach all its learners. TSWREIS has set a goal of having 50,000 village learning circles before schools reopen to ensure educational continuity for all their learners.

Reflection task

Enabling learners to learn together

- Is it possible to create learning circles in your context? If so, where, for how long and how often could they meet? Would this need to be the same everywhere or could communities decide what would work in their context?

- What safeguarding and child safety issues would you need to consider?

- Who might be willing in your target communities to volunteer to lead learning circles?

- What kinds of support might you give those leading such learning circles?

- How might you avoid misinformation and poor facilitation of learning? How would you assure quality?

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4.2.2

Caregiver and parental involvement

Enabling parents to be actively and effectively involved in their children's remote learning may help overcome several of the challenges already discussed: helping make time and space for learning and encouraging learning together; supporting language, literacy and numeracy skills; reducing girls' chore-burden; raising girls' aspirations and expectations; and enabling children's access to learning technologies and resources.

In particular, parents can actively promote and support children's opportunities to learn by sending children to learning circles, making time and space for learning at home, making mobile technology available, and showing interest in what the learner has done.

Parents can participate in learning or learning assessment activities with their children, helping them understand and enjoy what they are doing.

The active role of parents and caregivers may be particularly important for younger learners, who have yet to build more independent learning skills. Providing practical support and tools to these parents and caregivers, many of whom may be experiencing high levels of stress, can be crucial.

An increasing engagement and understanding by parents of how they can support learning within the home can provide a platform for more blended models of education going forwards as school re-open (see Section 7).

Using parents' mobile phones to distribute learning materials to learners

CASE STUDY

India – Telangana remote learning and village learning circles[30]

Teachers sent learning materials to learners via their parents' mobile phones and WhatsApp, following up with voice calls. The programme also gives guidance to parents on how they could support children's remote learning.

Using parents' mobile phones for learning conversations

CASE STUDY

Botswana – Remote Learning[31]

Facilitators sent numeracy activities to learners via their parents' mobile phones and SMS, following up with voice calls, where possible. "The goal for the calls was to conduct them with both the caretaker and the child simultaneously. This strategy maximized the probability the child received educational support and lowered future barriers to entry for parents to continue engaging in educational activities. It also provided a measure of child protection by ensuring a guardian was present during phone calls with children."

Using mobile apps to help parents support children's learning

CASE STUDY

India – BYJU'S[32]

In 2017, BYJU'S introduced its Parent Connect app to help parents know more about and support their child's learning. The app helps parents to see detailed progress by subject and recent achievements by the child, understand how much time the child is studying each subject, highlight the subjects that need more attention and suggest actions for each subject depending on the progress of the child.

India – #Ab Padhai Nahi Rukegi (#Learning Will Not Stop)[33]

#Ab Padhai Nahi Rukegi uses WhatsApp to deliver learning resources to learners, with learning supported by regular phone calls from teachers and by parents' accessing the TopParent app.

In the face of prolonged school closures in Madhya Pradesh from March 2020, #Ab padhai nahi rukegi (#Learning will not stop) was launched. The digital learning component, the 'Digital Learning Enhancement Programme', shares curated learning material for all grades through WhatsApp groups.

WhatsApp has near-ubiquitous presence amongst those who possess a smartphone with internet in Madhya Pradesh. It was therefore chosen as the key medium to reach children with digital content.

High-quality free content was curated from various libraries, such as Khan Academy and Pratham Open School, in order to ensure that there was a series of short videos available to learners in Grades 1 to 12 on every topic. To disseminate these videos, the State created WhatsApp groups for every school, cluster and district: over 50,000 WhatsApp groups were created, which, after 8 weeks, reached almost 2.1 million parents and about 7 to 10% of the State's total enrolled students.

A 20-minute lesson or educational sequence is shared every day at 9.00 a.m. through the WhatsApp groups. Teachers are asked to call five students every day, to help them access the learning material and answer any queries. This measure has been found to be key in ensuring the growth of material viewership.

For teachers, the CMRISE digital teacher training programme was launched. The portal aims to develop teachers' skills in navigating digital learning, support children during the COVID-19 crisis, prepare for reopening schools, educate children on COVID-19 and support them with the transition once schools reopen. District and Block Education Officers have their own WhatsApp groups with school principals and teachers to disseminate daily messages.

For parents, Top Parent, a free mobile app in Hindi accessible on mobiles and tablets, was launched to help them to engage with their children's learning journey. This supports parents with knowledge, language and strategies on child development to help them meaningfully engage with their children between the ages of 3 and 8 years. Top Parent also recommends learning apps for children to improve their language and mathematics skills in simple and fun ways. Parents can also track their child(ren)'s progress on the Top Parent dashboard. For further details, see https://play.google.com/store/apps/details?id=com.csf.topparent&hl=en

Other programmes, such as **Learning Bridges**, have developed animated videos on social media and broadcast channels to encourage parents to engage. These refer parents to children's weekly activity packs, which include practical ways for parents on how they can support each piece of learning, e.g., by listening to their child(ren)'s speech on a given topic.

Reflection task

Involving parents and caregivers

- What are the most interesting innovations in these case studies?

- How would you motivate caregivers in your context to give support for learning?

- Are there gender dimensions as to who is currently supporting children's learning within families? In what ways might you encourage increased co-parenting?

- What specific support do you want caregivers to give to learners?

- What guidance and support will you give them and how?

- What different or additional support will you give to caregivers who have not had a formal education themselves?

- How might teachers engage with and support caregivers?

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4.2.3

Teacher engagement

International guidance on emergency remote learning encourages education systems to provide remote learning materials for students and training for teachers on how to use these. There is less guidance about how schoolteachers might support remote learners. There seems to be an automatic assumption that teachers will continue to support their learners through remote learning, but this may not always be possible. Where it is possible, this is a dramatic shift for teachers, whose teaching experience has previously been in school classrooms.

New roles for teachers

Considering our four models of mobile learning:

Model 1
Sophisticated learning platforms or apps

Smart apps, such as BYJU'S[34] or onebillion's onecourse[35], may not offer any direct role for an individual child's teacher to support their remote learning, although BYJU'S is introducing live lessons from a few select teachers. In onecourse, there is a character referred to as 'our digital teacher', who guides each child through the course one step at a time, giving instant support and encouragement. She appears on screen herself, or as a pointing hand.

Model 2
Learning materials accessed from an online repository or social media

Where learners have limited mobile access to online materials, teachers may have a role in guiding learners to particular resources and supporting their progress. Two examples follow.

CASE STUDIES

India – Telangana remote learning and village learning circles[36]

The programme trained teachers to use a flipped classroom model. Teachers send activities to students via WhatsApp – students complete them independently and then discuss their learning in a voice call with the teacher. As seen in Section 4.2.1, where students could not participate via WhatsApp, student-led 'village learning circles' were set up.

India – #Ab Padhai Nahi Rukegi (#Learning Will Not Stop)[37]

The programme uses WhatsApp to deliver learning resources to students via parents' mobile phones. Over two million parents participated. The Ministry asked teachers to call five students every day, to help learners access the materials and answer their queries, recording their contact on a Google Form. Teacher support and frequent teacher-parent interaction were critical to students' participation.

Model 3

Providing mobile devices preloaded with learning content or apps

Where programmes provide preloaded devices to learners, the nature of the role for teachers may depend upon whether the content is most aligned to Model 1 or Model 2.

Model 4

Learning activities through phone calls or SMS on caregivers' phones

Where learners only have access to basic phones, teachers may be able to offer support or even lessons via voice calls. In theory, teachers may also be able to send simple activities to learners by SMS, but in practice this is often done by project officers, for example, in Botswana.[38]

CASE STUDY

Bangladesh – BRAC pilot of remote learning through basic phones[39]

Teachers hosted twice-weekly telephone lessons for groups of four or five learners at a time. Initially focussed upon psychosocial support, the lessons moved onto a core curriculum of Bangla, English and Mathematics, with story time and drawing.

Resident teachers

Where teachers and learners may both be offline, providing individual teacher support may become increasingly difficult. If teachers are resident in the school community, however, they may join and support community members in engaging with learners. In both IGATE-T, Zimbabwe and Telangana, India, whose community initiatives are described in Section 4.2.4, resident teachers became community learning champions themselves.

Using apps for teachers to support learning in blended remote progammes

CASE STUDY

Jordan – Learning Bridges[40]

Learning Bridges is an innovative, blended-learning programme from the Ministry of Education, supported by UNICEF, to help one million students from Grades 4–9 recover and accelerate their learning following the disruption caused by the COVID-19 pandemic.

A streamlined curriculum for four subjects (Arabic, English, Mathematics and Science) in Grades 4–9 was developed. Learning materials are distributed in print each week with a cross-curricular theme for that week. Children can use the embedded QR code via a smartphone to access online versions of the materials, including audio and video content. This content is uploaded to Padlet, a free online tool that can be described as an online notice board, which can contain messages, links, videos, images and document files. In November 2020, 72% of schools reported implementing 50% of activities each week and there are now over 500,000 views on Padlet each month.

From the start, teachers knew they had to do something to support children's learning, but were unclear as to what and how they might do this. Learning Bridges produces animated videos on social media and broadcast channels to encourage teachers and parents to engage. A printed teacher pack gives guidance for every week, including the weekly learning objectives, common misconceptions children may have, and quick ways of assessing for learning.

An online, 4-hour teacher training programme, introducing teachers to the new concepts, has seen 30,000 teachers enrol and 20,000 complete the course. Teachers also set up socially distanced training sessions at their own initiative to complete the programme together.

Teachers have access to more assets to support their role through the Padlet App. In addition, the app has 'good practice noticeboards', where schools can put up what they are doing, including children's work. Teachers have created their own resources, which they are sharing. Now schools are remaking areas of the Padlet app to be interactive between learners and their teachers, giving a new platform for teacher support. One female and one male teacher per district are Learning Champions, who encourage and support other teachers. Learning Champions are encouraged to have district noticeboards and to share links to these with school principals. Through these noticeboards, both active districts and schools, and also those schools and teachers who might benefit from further support, can easily be seen.

A secondary school teacher says: "Suddenly UNICEF, with the Ministry, introduced to us the Learning Bridges programme and it was like lighting the torch of attraction to education again. Now I can see my students' passion for returning to learn and sharing the activities and solutions using the simple things they have."

Teacher development

Where teachers are able to be directly involved in guiding, supporting, or assessing remote learning, teachers may need to make a 'double-leap' from classroom teaching to remote learning, and from teacher-led pedagogy to more active and independent learning styles.

The following are examples of how two programmes have responded to this need:

CASE STUDIES

India – #Ab Padhai Nahi Rukegi (#Learning Will Not Stop)[41]

Within this programme, the CMRISE digital teacher training programme was launched. The portal aims to develop teachers' skills in navigating digital learning, support children during the COVID-19 crisis, prepare for reopening schools, educate children on COVID-19 and support them with the transition once schools reopen. The modules include training in general classroom pedagogies and teachers receive a certificate upon completion of a course. The first two courses were an 'introduction to the training' and understanding 'the role of a teacher'. Peepul India, an NGO, supported the state in developing the content for teacher development, which is delivered on the national DIKSHA portal.

Nigeria – EdoBEST@Home[42]

Learning and development supervisors and quality assurance officers coach teachers online and support them while they are using the EdoBEST@Home platform. For those teachers without smartphones, extra face-to-face support is provided.

Local government officials

Local government officials have a key role in terms of allowing, encouraging and supporting teachers and others in these new ways of facilitating children's learning. For example, in #Ab Padhai Nahi Rukegi, District and Sub-District Education Officers have their own WhatsApp groups with school principals and teachers to disseminate daily messages.

Reflection task

The role of teachers

- How has the role of teachers changed with the shift to remote learning? How have you communicated this change and the new expectations of the role?

- What support have teachers been given to understand and undertake their new roles? For example, how have teachers been helped to develop the IT skills required to support children's remote learning in your context?

- What support have school heads been given to understand this change and how they can support teachers from their school?

- Do your teachers and school heads understand the potential role remote learning could play in enhancing and reinforcing learning, even after the return to the classroom?

- What is the gender mix of teachers? Does this change between phases (early childhood, primary, lower secondary, upper secondary, vocational)? Does gender affect teachers' ability to support remote learning, e.g., in terms of their ability to be online or balance family responsibilities? If so, how can such teachers have more targetted support?

- What guidance and support have you given local government education officials in understanding and promoting the changing roles of teachers?

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4.2.4

Community involvement

It is particularly challenging for teachers to provide remote support when teachers and learners alike may be offline and where teachers are not resident in the school community. In these circumstances, it may be more feasible to engage community leaders, non-formal educators or community volunteers to encourage and support children's remote learning,

Research[43] has identified a number of factors that support effective engagement with learners:

- recruitment of people who are known and trusted – with advice from the communities themselves;

- use of 'open' challenges to enable local responses and adaptation to changing circumstances;

- provision of structure through simple learning activities and simple messages about use;

- setting of appropriate guidelines for engagement and behaviour, e.g., supportive behaviour, hygiene and inclusion;

- designing learning activities so that they can be distributed via available technologies and, if learners' access to technology is limited, are not dependent upon technology at the 'point of learning';

- working in partnership with community leaders from the outset and leveraging existing community networks, such as village meetings;

- fostering a sense of 'belonging to something bigger' through online groups and, where possible, field visits; and

- ensuring availability of local support staff, remotely or in person, to discuss challenges or help communicate directly with community leaders or officials.

CASE STUDY

India – Telangana remote learning and village learning circles[44]

The programme uses learner-led, physically distanced peer learning in village learning circles as an integral part of its programme to reach disadvantaged learners. In many cases, community members and religious leaders have come forward to support learners with spaces for these circles (see section 4.2.1 for further details).

Zimbabwe – IGATE-T[45]

Improving Gender Attitudes, Transition and Education Outcomes (IGATE-T) is a Girls' Education Challenge project, funded by UK Aid and developed in collaboration with the Ministry of Primary and Secondary Education, to improve literacy, numeracy and life skills for over 70,000 marginalized girls from 318 schools across Zimbabwe. Prompted by school closures due to the COVID-19 crisis, IGATE-T is using adults' mobile phones to activate local study groups for children.

Building on existing community relationships, the project has used WhatsApp to recruit and support local Community Learning Champions who can share daily learning activities with children and caregivers. This approach, developing support networks for the informal study of basic literacy and numeracy skills, is reaching over 5,000 vulnerable girls and young women.

The daily learning activities were set up as simple games or challenges for use by community volunteers. Activities are made to benefit a wide range of learners – being 'low threshold and high ceiling' – and to prevent regression by actively maintaining existing knowledge and skills. For example, one literacy activity is "Choose an animal or bird. Imagine that you are that animal or bird. Write about your day. What do you do? What do you like?...", and one numeracy activity is "Imagine you only have 1c, 5c, 10c and 25c coins. Can you find 3 or more ways to make the amount of money below? 88c..."

To explore what was possible, project staff identified volunteers with strong ties to the local community who were known to the programme and were reachable through WhatsApp— people who were literate and numerate, passionate about learning, and willing to help. The first group of 46 champions—including teachers, school committee members, community educators, and girls' education champions—were identified from 8 schools in 2 districts. They were given 'airtime'—a 220MB monthly data allowance—and formed into District WhatsApp support groups, all accomplished remotely through their mobile phones. This has now been expanded to hundreds of volunteers.

The daily learning activities are shared with the community learning champions by WhatsApp each day. Champions have then used their community networks to share activities with parents and caregivers via WhatsApp, SMS or by copying out small handwritten notes for those without phones. Some have posted notes in public areas like boreholes and other meeting spaces. Older siblings have also been encouraged to help support children who are unable to read and write. Additionally, champions are doing daily activities with children who live nearby, particularly supporting children who do not have literate parents to help them. Group sizes have been limited to four or five children and champions are identifying solutions for reaching more learners within the constraints of the lockdown.

Reflection task

The role of communities

- Who in your local communities might be willing and available to support learners?

- What specific support do you want them to give learners?

- How will you motivate them?

- What guidance and support will you give them? Can they be networked to give each other support?

- How much time can they give? Will they be paid expenses/a stipend?

- What roles might community and religious leaders have?

- How might communities continue to support children's learning when school re-open?

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4.3

Using assessment to support learning

4.3.1

Using assessment data to inform design

It is tempting to start planning remote learning programmes, especially in response to a global or national crisis or emergency, by thinking about technology, apps and media. It is better, though, to start by thinking about the learners, their readiness to learn, and their current knowledge and skills. Widespread learning poverty means there are often marked gaps between where learners 'should be' according to the formal curriculum and where most learners 'are' in the development of their knowledge and skills.

Promising responses to this issue include:

Using survey data to design 'low threshold, high ceiling' activities

Low threshold, high ceiling activities are where every individual is able to find a way to engage with and answer the question at their own level. The high ceiling means that there are always multiple opportunities for higher attainers or more confident learners to do more complex problem solving or creative and independent thinking. IGATE-T, Zimbabwe[46] uses recent numeracy and literacy survey data to inform learning design. Data showed 58% of Grade 7 children could not do subtraction, and 96% could not comprehend a simple story. The daily learning activities, delivered by WhatsApp, were designed to be 'low threshold, high ceiling' so that most learners could participate. Even then, local volunteers often had to improvise activities for those with the lowest literacy or numeracy levels.

Using survey data to start where learners are

Botswana – Teaching at the Right Level (TaRL)[47]

Teaching at the Right Level (TaRL), Botswana has based the 'learning level' of its materials and the model of parental support on previous studies of skills levels.

Pre-COVID-19, a coalition of partners led by the Ministry of Basic Education was scaling up the TaRL programme to all primary schools in Botswana. A previous study had shown that 32% of Grade 5 learners could not do subtraction and 88% could not do division, and this determined the level of learning activities on the TaRL programme.

Immediately prior to COVID-19 school closures, programme facilitators collected 7,550 phone numbers from learners, parents and teachers, focusing on Grades 3–5. Facilitators then called all numbers to gauge interest from parents in receiving remote learning support via phone. High interest was expressed by parents.

Two low-tech interventions were then implemented:

1. An SMS was sent at the beginning of each week, containing several simple numeracy 'problems of the week'; for example, "Sunshine has 23 sweets. She goes to the shops to buy 2 more. How many does she have altogether?" Text messages were sent via one-way bulk SMS to parent phone numbers, since primary school children rarely have their own phones. In some cases, parents shared the message directly with students and in other cases, parents engaged directly with their children to solve the problems.

2. Where possible, a weekly 15–20-minute phone call was made, in addition to the weekly SMS. On the call, the facilitator asked the parent to find the student and put the call on speaker. This arrangement allowed both the parents and student to hear the facilitator at the same time and engage in learning. The facilitator confirmed that the student had received the SMS message sent and answered any questions related to the task. Furthermore, the facilitator provided the student with a numeracy question to go over and practise. The calls served to provide additional learning support, as well as motivation and accountability. Many parents proudly reported to the facilitators during these phone calls that their child had successfully completed the problems of the week.

   Over 60 facilitators were engaged through training via WhatsApp, in which voice notes and short briefing scripts were shared on how to conduct the calls.

   Assessments showed that, within six weeks of implementation, the number of innumerate learners fell by over half among those learners receiving the SMS and phone calls, and by over a third among those learners only receiving SMS.

Reflection task

Assessment data and how it can inform programme design

- Are you clear about children's current learning levels in your context?

- If not, how can you find this out? Are there existing data sources? Do you need to undertake your own assessments?

- How can this data feed back into your programme design or into the next stages of development for an existing mobile learning programme?

- How will you respond to the diverse range of learning attainment across your target group of learners? What differentiation will you build in to support those at early stages of learning attainments and to challenge those at more advanced stages of learning attainment in relation to different topics?

- Are there approaches that are already being used in your context that respond to these issues?

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4.3.2

Using individual assessment to track and support learning and celebrate

Many learners had little opportunity to interact with their regular school teachers while their schools were closed due to the pandemic, particularly in circumstances in which learners and teachers were both offline and many teachers were not resident in the local community.

Mobile learning programmes have used a variety of approaches to try and create opportunities for individual assessment, for tracking and supporting progress, and for celebrating success. Four broad categories of response can be seen, each with differing requirements in terms of learners' access to mobile technology and data.

1) Apps incorporating rapid assessment activities or analytics

These have typically been deployed in contexts where learners have reasonably long periods of access to smart mobile technologies (apps on tablets or phones), with the assessment analysis taking place on or offline.

CASE STUDIES

India – BYJU'S[48]

Children learn independently on a mobile phone app. BYJU'S has recently added a data analytics layer to be able to create individualized learning experiences for learners across the K-12 age range. Students' use of specific app features or courses is analysed to provide individualized feedback and to tailor future learning content, based upon previous course completion.[49]

Uganda – Hub Heroes[50]

Children learn independently using the onecourse app on a purpose-built onetab tablet. Each day, after a warm-up activity, learners complete a short assessment in literacy or numeracy. Children then complete a module created automatically for them based upon the assessment results. This is followed by a second assessment and bespoke module, a daily short story, and an opportunity to practise in the 'play zone'. Once the lesson is over, the child passes the tablet to the next child, who again gets individualized lessons based upon their assessments. The analysis and tailoring of modules occur offline on the tablet without data connectivity.[51]

Another example is Chimple[52], an Android app that adapts to the child's learning level and offers a personalized learning journey through thousands of games, activities and stories.

2) Apps developed to enable parental support of learning

These are typically deployed in India, where household smartphone access is high, digital literacy (in terms of app use) is widespread, and data charges are low. This 'administered assessment' approach potentially improves parental understanding of their child's learning, gives feedback to learners, and provides the programme with evaluation data:

CASE STUDIES

India – BYJU'S[53]

The Parent Connect app helps parents to track their child(ren)'s learning.

India – #Ab Padhai Nahi Rukegi (#Learning Will Not Stop)

The digital component of the campaign also provides parents with an app to help them track primary-aged learners' progress via the Top Parent dashboard (see section 4.2.2 for further details).[54]

3) Automated mobile quizzes and feedback

These are typically deployed in contexts with lower levels of smartphone ownership and digital literacy, or higher data costs. They leverage widely used message platforms – WhatsApp or SMS – in contexts where many people may buy data bundles tied to WhatsApp and may have little or no experience of the internet or apps beyond this. Chatbots provide automated feedback and can operate over both SMS and WhatsApp.

CASE STUDIES

Nigeria – EdoBEST@Home

EdoBEST@Home has developed a series of interactive quizzes for every grade from ECD to Primary 6. The quizzes can be accessed via QR Code online, via WhatsApp, or via SMS.[55]

Rwanda – Shupavu SMS Learning

In collaboration with Enenza Education, an EdTech company that provides curriculum aligned revision materials, Shapavu developed SMS-based lessons and quizzes aligned to the national curriculum. The service has been made tariff-free for learners from November 2020 to July 2021. The SMS system also allows interaction between students and their teachers.[56]

A girl shows off the online platform on which children and parents in Timor-Leste can access a range of audio-visual material to help students continue learning during ongoing school closures.

Photo: UNICEF / Bernardino Soares

4) Facilitator or teacher-led telephone assessments

These are typically deployed in contexts with low levels of smartphone ownership, digital literacy or data connectivity.

CASE STUDIES

Botswana – Remote Learning

Pratham adapted its Annual Status of Education Report (ASER) survey instrument to conduct standardized numeracy assessments over the telephone. This was part of a randomized control trial. In the first wave of the trial, telephone assessments were used to evaluate programme effectiveness. Results showed marked improvements in learning for the treatment group. The 'first wave' of assessment data was then used to target learning activities at the right level for individual students during the 'second wave' of the trial.[57]

Bangladesh – BRAC pilot of remote learning through basic phones

Though not a formal 'assessment of learning', BRAC teachers are using regular phone calls to remain in contact with underprivileged children in low-income households, and to supervise home learning in collaboration with parents. This includes informal assessment of the child's wellbeing and how well they are able to engage in remote learning at home.[58]

5

Considering quality assurance and evaluation frameworks

In this pack, a distinction is made among assessment, design testing, quality assurance and evaluation. Each term is given a specific focus. For assessment (see section 4.3), the focus is on individual student progress and achievement. Design testing (see section 3.4) is focussed on testing key assumptions and resources, as you develop the programme or an innovation to the programme and before it is rolled out at scale. Quality assurance focusses on regular reviews of programme components that can be used by the programme team to review and modify the programme going forward. Evaluation is focussed on the more general overall success of the programme in achieving the main purposes established at the outset of the programme.

5.1

Framing quality assurance processes

Considering what quality assurance or monitoring information to collect will help inform the short- and long-term programme management decisions you take to improve learners' experiences on the programme.

To really learn from the experiences of programme implementation (both successes and challenges) and to continually improve the programme, you will therefore need a robust quality assurance framework. Wherever possible, think about how the mobile devices themselves might be used to collect data, but always keep it simple. A small number of indicators that are meaningful, feasible to collect and acted upon at all levels will yield improvements, whereas multiple and complex indicators run the risk of efforts being focussed on collecting data rather than acting upon it.

The following feedback loop[59] gives one framework:
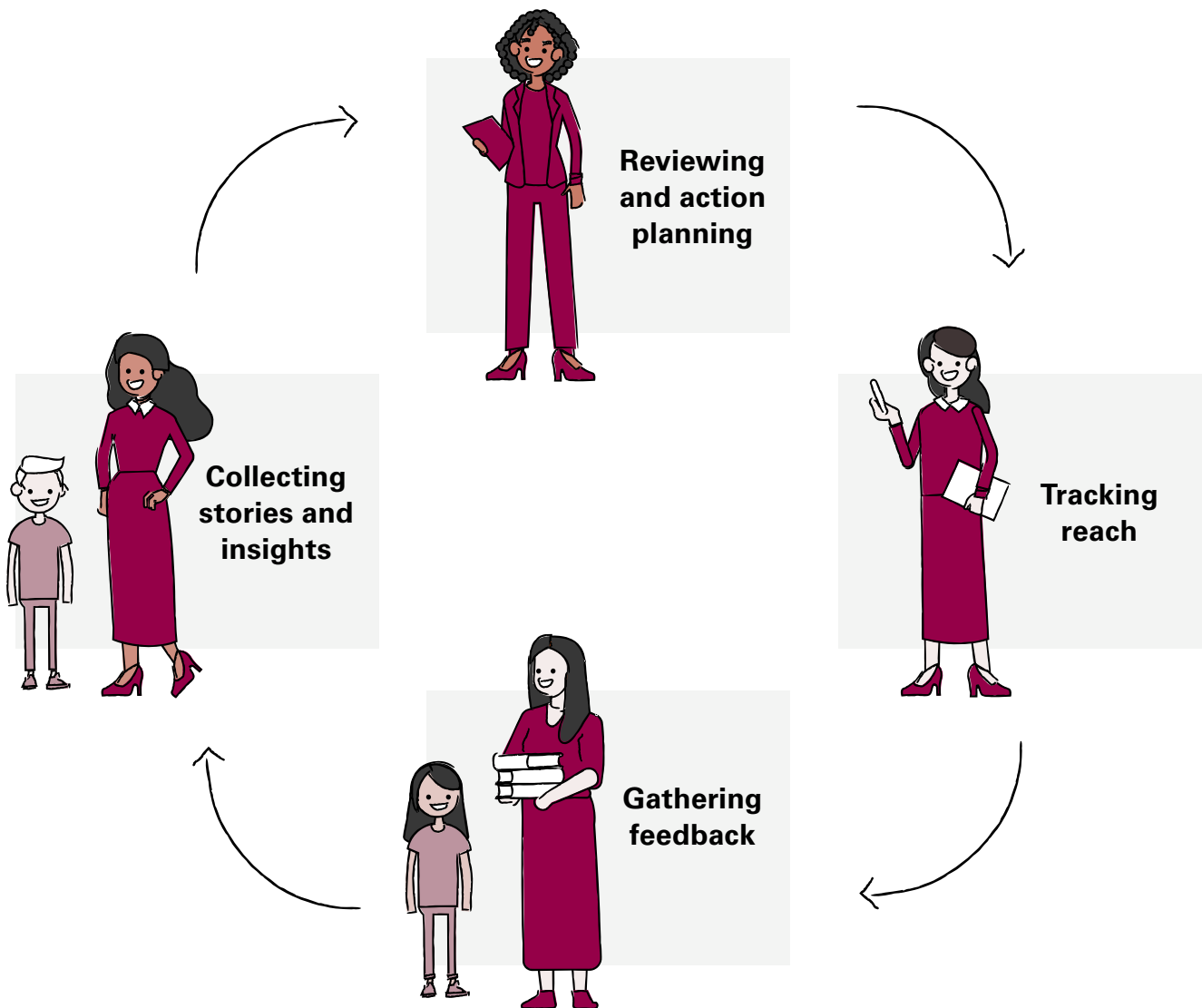
Set out below are examples of the types of data you might collect and tools you might use at each step:

Framework aspect	Examples of data types	Example of tools that could be used by mobile learning programmes
Tracking reach	• Number of learners accessing learning activities each week • Time spent on learning activities each week • Disaggregating data, if possible, into target sub-groups, e.g., girls or children with disabilities	• App in-built analytic tools • Chatilyzer – WhatsApp chat analyzer & visualization tool • On-line surveys
Gathering feedback	• Learners' views of their interest, how often they engage, levels of support, etc. • Caregivers' views on supporting learners, level of support they receive	• Closed quantitative surveys, e.g. using SMS survey tools such as TextIt • Short phone interviews to uncover what works well/what needs improving
Collecting stories and insights	• Particular successes or challenges identified to find out how and why they happened	• User video posts • Teacher and/or learner keeping teaching/learning diary for a few days and then interviewed about its content • Interviews and observations • Critical incident studies of reported issues
Reviewing and action planning	• Asking: What worked best? What worked worst? What can we change?	• Timed action plan

5.2

Longer-term evaluation

Developing your evaluation framework at design or redesign stage will help you focus on identifying key success criteria from the start of the programme. The framework can then be used to see if the programme is delivering to its intended purposes at key points in its implementation.

Evaluations are a major investment in time and money. Your choice of evaluation criteria should therefore focus on a small number of essential aspects of the programme. Evaluations should not usually take place more than once a year, and for longer-term programmes may be once every two years

Think about the success criteria that will tell you about its reach, effectiveness, children's learning and cost-effectiveness. It is important to collect data on both numbers, e.g., how many learners are actually participating in the programme compared to how many were planned at the programme design stage, and on insights, e.g., probing why a particular sub-group of learners did not participate, or the factors behind why an aspect of learning support is successful.

Potential evaluation dimensions are:

Reach, with focus on:

- how many learners participated and whether this changed over time; and
- the reasons for changing levels of participation.

Practice, with focus on:

- whether the programme materials and media were easy to understand and use;
- whether learners had the planned time and space do the learning activities; and
- whether those with power and influence promoted and encouraged the learners to undertake the learning activities and whether others supported them.

Learning, with focus on:

- whether there have been any changes in children's learning; and
- whether the learning is useful to the children and young people, with particular reference to UNICEF's readiness agenda – that 5-year-olds are ready for school, 10-year-olds are ready to succeed at school, and 18-year-olds are ready for life and work.

Value for money, with focus on:

- whether the programme was cost-effective, both for individual learners and their families and from the perspective of the programme itself; and
- whether the choice of learning media and resources has been cost-effective. Was the choice of support mechanisms cost-effective?

At the end of this Resource Pack in Annex 1 will you find an example of a potential evaluation framework.

6

Integrating mobile learning with other remote learning approaches

Co-ordinating linkages between resources available through mobile learning and resources available through other media (e.g., print, radio, TV) is important to ensure that learners have, as far as possible, similar opportunities for learning regardless of which media they can access.

Model 1
Sophisticated learning platforms or apps

Remote learning programmes where learners have ready access to smartphones or tablets and use these to access sophisticated learning platforms or apps typically 'standalone'. It is assumed that most learning occurs 'on-device' and often online. There is little evidence of linkage to learning from broadcast media or print.

See, for example, BYJU'S, India[60], where the app appears to be independent of other remote learning approaches in India.

In practice, enabling teacher-student feedback and encouragement through SMS, telephone hotlines, email, social media or virtual helpdesks, and video messaging may all add extra and beneficial support for learning. It is also unlikely that all targeted learners will be able to have appropriate and sufficient access to the required mobile technology, and so other forms of mobile or remote learning will be needed to reach those learners.

Model 2
Learning materials accessed from an online repository or social media

Links between mobile learning and learning through broadcast media or print seem to be strongest in the middle ground, where learners have some access to smartphones and the internet, but not enough for most of their learning to be 'online and on-device'. Here, the online repositories that form the core of the mobile learning experience are often dependent upon material initially developed for radio or TV broadcast, or worksheets, lesson plans, or stories developed for print.

This model assumes learners have limited access to mobile devices. So, while some learning may occur *on-device*, such as viewing audio-visual content or completing quizzes, *off-device* learning is also expected. Off-device learning may include completing activities copied from the mobile materials, or using printed materials, or watching or listening to broadcast media. Off-device learning may happen individually or with others.

See, for example, Edo-BEST@Home, Nigeria[63], which was originally designed to be multi-modal, with the core content being four hours of daily interactive radio lessons, accompanied by the digital content repository and mobile quizzes through SMS or WhatsApp. As the programme began implementation, the programme found challenges with radio and switched to making all content, including the 4 hours' daily radio lessons, available via a single mobile channel.[64]

See also Özelim Eğitimdeyim (I Am Special, I Am In Education), Turkey[65], when, at the outset of the crisis, the Turkish government launched a multi-modal response delivered through online teaching, radio and TV broadcasts, and mobile access to digital materials for all students supported with an 8GB allowance of free data per month. The mobile App essentially consists of a mobile adaptation of the generic education platform for students with disabilities.
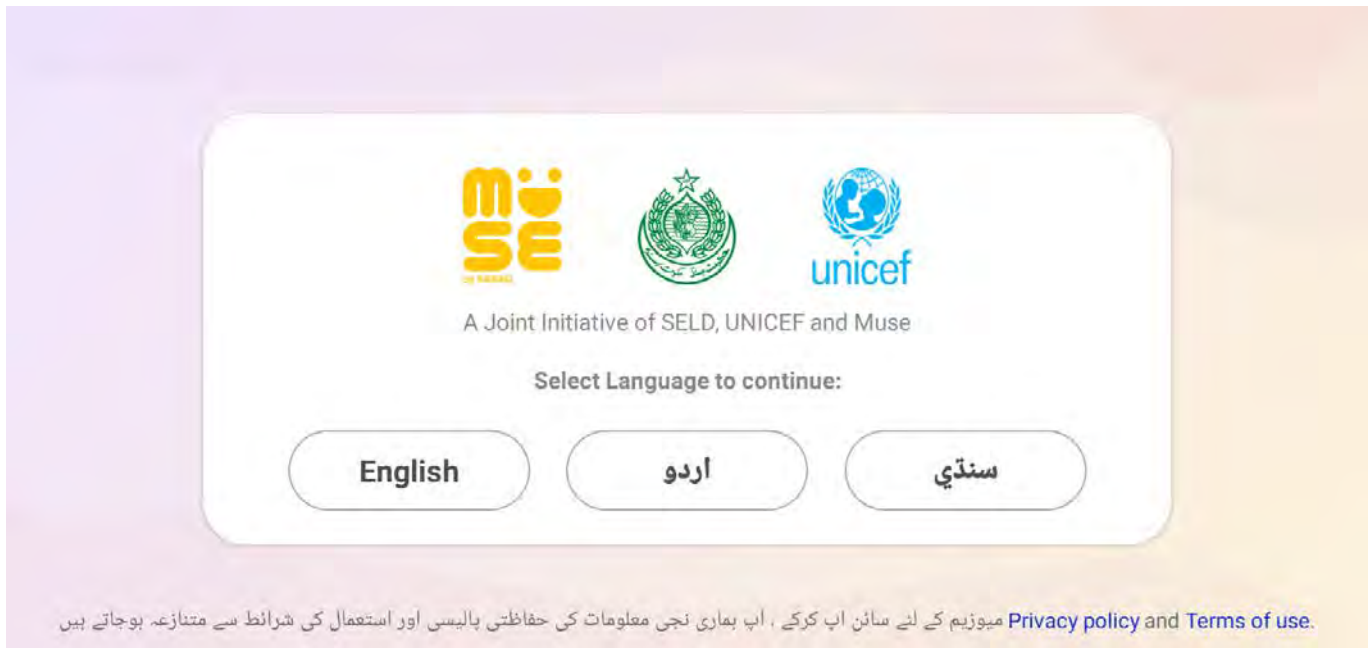
Model 3

Providing mobile devices preloaded with learning content or apps

The approaches to integration tend to follow whether the media for learning is used in ways similar to Model 1 or Model 2.

Collaborative integration

Integration with other approaches is best achieved in partnership with other national and local stakeholders, organizations of persons with disabilities (OPDs), non-governmental organizations (NGOs), health workers, EdTech companies, local businesses, etc.

Examples can be seen at national level, where governments can coordinate multiple stakeholders. The Zimbabwe Education Cluster COVID-19 Preparedness and Response Strategy activities are led by the Ministry of Primary and Secondary Education and co-led by Save the Children and UNICEF, with more than 22 partners with long-established presence and experience in implementing Education in Emergencies programming in Zimbabwe. The strategy's objectives are wide-ranging, viz., (i) to ensure continuity of learning through the implementation of key activities aimed at maintaining quality learning and wellbeing of teachers, learners and school communities during the COVID-19 emergency; (ii) to support teachers, learners and school communities to prevent the transmission and spread of COVID-19; and (iii) to facilitate the safe return to quality learning for teachers, learners and school communities after the COVID-19 emergency.

In Pakistan, the Sindh Education and Literacy Department collaborated with a digital content producer and UNICEF to make the MUSE learning app freely available to all children in the province.

Credit: SABAQ

Model 4

Learning activities through phone calls or SMS on caregivers' phones

At the other end of the spectrum, where learners have little or no access to smartphones, tablets or the internet and rely on limited access to learning activities through phone calls or SMS on caregivers' phones, there is also little evidence of linkage with learning via broadcast media or print. In principle, the SMS messages and voice calls could be used to support or assess progress with learning via other platforms. In practice, the programmes identified appeared to 'standalone' from other remote learning approaches in-country.

See, for example, Remote Learning, Botswana[61], where, although radio and TV broadcast are the main thrust of the national response, there doesn't appear to be any direct relationship between these programmes and the use of basic phones to support numeracy skills through SMS activities and voice-call support.

See also BRAC piloting remote learning through basic phones, Bangladesh[62], where, in the basic phone programme, parents and teachers work together to deliver abridged lesson plans. Although BRAC has worked closely with the Ministry of Primary and Mass Education to support broadcast TV classes for primary and secondary learners, the basic-phones programme doesn't appear to integrate with these. This may be because of low levels of household access to TV among the under-privileged target group. Widening the scope of the telephone learning conversations or SMS to include other forms of remote learning with which learners are engaging can help learners to see links between them and give time to ask questions at points of curiosity and challenge.

7

Looking ahead

In 2020, countries around the world introduced remote learning as a crisis response to the COVID-19 pandemic. For many children, the re-opening of schools will not mean an immediate or full return to pre-COVID-19 patterns of education, with learning returning to its original boundaries of lesson time and the classroom. There will be an ongoing need for many children for more fluid and mosaic approaches that incorporate learning in school, at home and in the community .

There are at least three scenarios in which remote learning has an important role to play:

Using remote learning to help children and young people back into schools

Integrating remote learning provision into mainstream education systems

Using remote learning as a means of creating learning resilience

Using remote learning to help children back into school

When children return to school, they are very likely to need additional support to catch up on learning or regain confidence in using knowledge and skills learnt before the pandemic. Teachers and school leaders will need to understand which children have been able to access remote learning during the school closure and which programmes they have engaged with. It will also be critical for teachers to find out where the learners now are in their learning after this period of disruption.

CASE STUDY

Zimbabwe – IGATE-T[67]

IGATE-T, Zimbabwe is planning to use teacher-led diagnostic assessments of learners. These empower teachers with knowledge of the key literacy and numeracy skills progress and gaps of each learner, and trends across the class. The diagnostic assessment findings signpost teachers to specific activities in a bank of resources, which will help the learners to take their next learning step. These can also inform the learning activities facilitated by community learning circles to provide further support to children to practise the skills identified. This use of diagnostic assessments is being taken to the national Zimbabwe Education Cluster for wider take-up.

Integrating remote learning into education systems

Remote learning experiences during the pandemic have brought forward discussions around the ways in which education can become available in different delivery modes and methods. Considering that teachers and students have been exposed to these new modes and methods during the crisis, as the pandemic subsides there is an opportunity to integrate remote learning and face-to-face, classroom teaching. There is also an opportunity to think about creating new pathways for learning for children and young people, including for children and young people who are out of school.

CASE STUDY

Turkey – Özelim Eğitimdeyim (I am special, I am in education)[68]

Özelim Eğitimdeyim (I am special, I am in education) Turkey has developed its app to give easy access for students with disabilities to a curated subset of the learning resources available on the Turkish Ministry of National Education platform. The Ministry will ensure that the app will continue to be available to provide additional support to learners alongside classroom teaching into the future.

Remote learning to create resilience

Partial and ongoing school closures mean that remote learning will continue to be an essential education platform for many children and young people for the foreseeable future, as illustrated in this case study from India.

CASE STUDY

India – Telangana remote learning and village learning circles[69]

The success of village learning circles has now made them a critical part of the programme's remote learning strategy and the programme has set a goal of having 50,000 village learning circles before schools reopen. These will have an ongoing role in supporting learning going forward and contributing to **a mosaic of learning in school, at home and in the community.**

Beyond the current pandemic, the climate emergency, conflict and economic turmoil are just a few of the shocks that will affect children's learning in the coming decades. Remote learning using mobile and other remote learning modalities could help education systems, schools, educators, children and their families become more resilient – both in terms of continuing education and withstanding shocks more generally.

Reflection task

Preparing for the future

- What strategies and support will be put in place to help schools and teachers carry out assessments to find out where the learners are when they return to school? What guidance will be available to signpost teachers to relevant learning activities? What policy direction will be given in terms of catch-up, accelerated learning and curriculum coverage? Given that learners will not be able to cover all the curriculum in a condensed time, which are the key skills and concepts that will be focused on?

- Where mobile learning activities, resources and applications have been developed, how can these be used going forward to support and strengthen learning for children in and out of school? How will the balance and pattern of learning between formal schooling and informal community and home learning change going forwards? What aspects of mobile learning do you want to embed in order to build back better?

- Where communities have supported learning through learning circles or in other ways, how can this be built upon, so that they continue to support children's learning as they return to school and do not disappear? How can school heads and teachers be supported to embrace these as significant contributors to children's learning?

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Key Resources

Adapting Open Educational Resources

https://oerafrica.org/content/adapting-open-content

Design Testing: Sandboxes as an approach to systemic experimentation

https://edtechhub.org/2020/01/28/sandboxes-our-approach-to-systemic-experimentation/

https://edtechhub.org/2020/01/31/sandboxes-testing-the-strategy-in-malawi/

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Working with telecom providers

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Developing an effective remote learning programme using mobile technology

Access and equity

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
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Example of an Evaluation Framework tool

Aspects covered	Indicative question	Assumptions being tested	Potential data sources
Reach	What is the number of participants (directly and indirectly): • by type (e.g. learners, peer leaders or adults supporting learning)? • by category of learners (e.g. girls, children with disabilities or children from migrant communities)?	For example: • that learners can access and continue to access the selected mobile learning media and activities; • that peer leaders can reach learners at planned scale; and • that adults supporting learners can reach learners at the planned scale	**Numbers:** mobile analytics tools, mass SMS/WhatsApp surveys **Insights:** analysis probing of where and why there are gaps in reach
Use by learners and those supporting learners	**A.** Are learners, and those supporting their learning, aware of the mobile learning resources and activities that are available?	For example: • that learners can understand when, what, with whom and how they are expected to engage in their learning; and • that those supporting learners can understand when, what, with whom and how they are expected to give support	**Numbers:** self-reporting tools, such as mass SMS/WhatsApp surveys asking, e.g., how often, how long, and in what ways learners engage with the learning activities **Insights:** case studies of what learners, peer leaders and adults supporting learning do under what circumstances, and why
	B. Are learners, and those supporting their learning, able to access and use the mobile learning resources and activities?	For example: • that learners are given the envisaged time and support by caregivers and families to engage in their learning; and • that those supporting learners are encouraged, empowered and supported to do so by others, particularly those with influence or power, such as head teachers, community leaders and education officers	
	C. Are learners, and those supporting their learning, motivated and choosing to use the mobile learning activities and resources regularly?	For example: • that learners are interested, motivated and actually complete the learning activities; and • that those supporting learners are interested, motivated and actually do the learning support activities	

Annex

Example of an Evaluation Framework tool

Aspects covered	Indicative question	Assumptions being tested	Potential data sources
Learning	Is there a change in children's learning experiences and outcomes?	For example: • that children completing the learning activities and receiving learning support actively maintain, rather than lose, the knowledge and skills they had before school closures; and • that children doing the learning activities and receiving learning support continue to develop and improve their knowledge and skills through emergency remote learning	**Numbers:** learning progress assessments **Insights:** case studies of what this means learners can now do for education, work and/or life
Value for money	What are the costs and benefits of the programme?	For example: • that the costs of the programme are as planned; and • that the costs are proportionate to the learning benefits	**Numbers:** cost-benefit analysis **Insights:** case studies into programme elements with high impact on learning