



Education Radio Knowledge Pack

With a focus on low-resource settings

Last updated: October 30, 2020

Author: Sharon Zacharia, World Bank, EdTech Team



Image Sources: World Bank; EDC; UN; Mickey Wiswedel,

Overview: *What does the World Bank and its Global EdTech team do? How does this Knowledge Pack fit in?*

Background

- World Bank's [goals](#)
- World Bank Education Technology team's [vision](#)
- World Bank's [5 EdTech Principles](#)
- World Bank's [EdTech Approach](#)
- **[Overview of this Education Radio Knowledge Pack](#)**



Click on [hyperlinks](#) to jump directly to the section.

What are the World Bank's goals?

The World Bank Group has two goals:

To end extreme poverty and promote shared prosperity in a sustainable way.



What is the World Bank's Education Technology team's vision?

The World Bank's Education Technology (EdTech) team's vision is to:
Reimagine Human Connections to Transform Teaching and Learning for All



What are the World Bank's 5 EdTech principles?



1 **ASK WHY:**

EdTech policies and projects need to be developed with a clear purpose, strategy and vision of the desired educational change.



2 **DESIGN AND ACT AT SCALE FOR ALL:**

The design of EdTech initiatives should be flexible and user-centered, with an emphasis on equity and inclusion, in order to realize scale and sustainability *for all*.



3 **EMPOWER TEACHERS:**

Technology should enhance teacher engagement with students through improved access to content, data and networks, helping teachers better support student learning.



4 **ENGAGE THE ECOSYSTEM:**

Education systems should take a whole-of-government and multi-stakeholder approach to engage a broad set of actors to support student learning.



5 **BE DATA DRIVEN:**

Evidence-based decision making within cultures of learning and experimentation, enabled by EdTech, leads to more impactful, responsible and equitable uses of data.

What is the World Bank's 5 EdTech approach?

To operationalize the 5 EdTech principles, the World Bank focuses on:
discovery, deployment and diffusion of new technologies.

Discover, document, generate and analyze evidence-based technology solutions in education relevant to developing countries.



Deploy solutions, at the pilot level and at scale, tackling adoption barriers (including in procurement) and in ways that are informed by evidence and which allow for efficient course correction.



Diffuse related knowledge widely across policy makers in our client countries and support capacity development to better use this new knowledge.



Overview: Education Radio Knowledge Pack

1. WHO?



- [Audience & Purpose](#)
- [What is a Knowledge Pack?](#)

2. WHY?



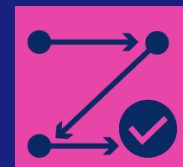
- [Overview of problem](#) (during COVID-19)
- [What is Edu Radio?](#)
- [Delivery modes](#) for Edu Radio lessons
- [Uses](#) of Edu Radio
- [Advantages](#) of Edu Radio
- [Who, what & how long](#) is Edu Radio most suited for?
- [Evidence for effectiveness](#) of Edu Radio

3. WHAT?



- [Key Questions](#) to ask
- [Key Decisions](#) to make
- [Key Capacity](#) elements required
- [Role of Teachers](#)
- [Key Cost Elements](#)
- [Challenges](#)
- [Limitations](#)

4. HOW?



- [Stages](#) of Edu Radio programming
- [Types](#) of Edu Radio lessons
- How can the impact of Edu Radio programming be maximised?
 - Strengthen [student engagement](#) during lessons
 - Complimentary [multi-media](#) approaches
 - [Support](#) for beneficiaries
 - [Public awareness](#) campaigns
 - Leverage [stakeholders](#) in the ecosystem

5. Additional Resources



- [Case Studies: Overviews](#)
- [Sample radio lessons, scripts & providers](#)
- [World Bank projects with Edu Radio components](#) (during COVID-19)
- Where to [learn more](#) about Edu Radio?
- [Acknowledgements](#)
- [Annex](#)



Click on hyperlinks to jump directly to the section.

Overview: *Who is this Education Radio Knowledge Pack aimed at serving?*

1. WHO?

- [Audience & Purpose](#)
- [What](#) is a Knowledge Pack?

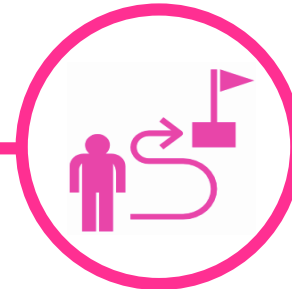


Click on any [hyperlink](#) to jump directly to the section.



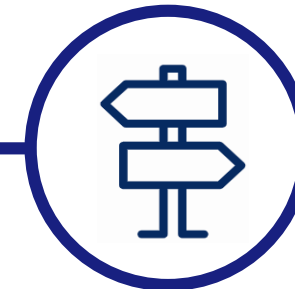
Main Target Audience

World Bank staff (particularly, Task Team Leaders) and decision-makers beyond the World Bank who support education ministries on education technology



Purpose

To support the main target audience as they work with education ministries to start [1] or enhance education radio programming as a remote learning tool, especially during COVID-19 and other emergencies.



What is a Knowledge Pack?

A series of short, pragmatic guides on individual topics within EdTech to support the target audience to make informed yet quick decisions about EdTech interventions in their work with education ministries.

[1] Note: To “start” Edu Radio, we assume that some basic radio production infrastructure is available to be leveraged for the short-term.

Overview: *Why use Education Radio Programming?*

2. WHY?

- [Overview of problem](#) (during COVID-19)
- [What is Edu Radio?](#)
- [Delivery modes](#) for Edu Radio lessons
- [Uses](#) of Edu Radio
- [Advantages](#) of Edu Radio
- [Who, what & how long](#) is Edu Radio most suited for?
- [Evidence for effectiveness](#) of Edu Radio



Click on [hyperlinks](#) to jump directly to the section.



COVID-19 pandemic has left more than 1.1 billion children out of school, with **more than 65% countries mandating partial or total school closures** [1] [2].



With the length of school closures uncertain, countries are attempting to support learning of students out-of-school and in almost all cases, are turning to the use of educational technology **(EdTech) to support remote learning.** [3]

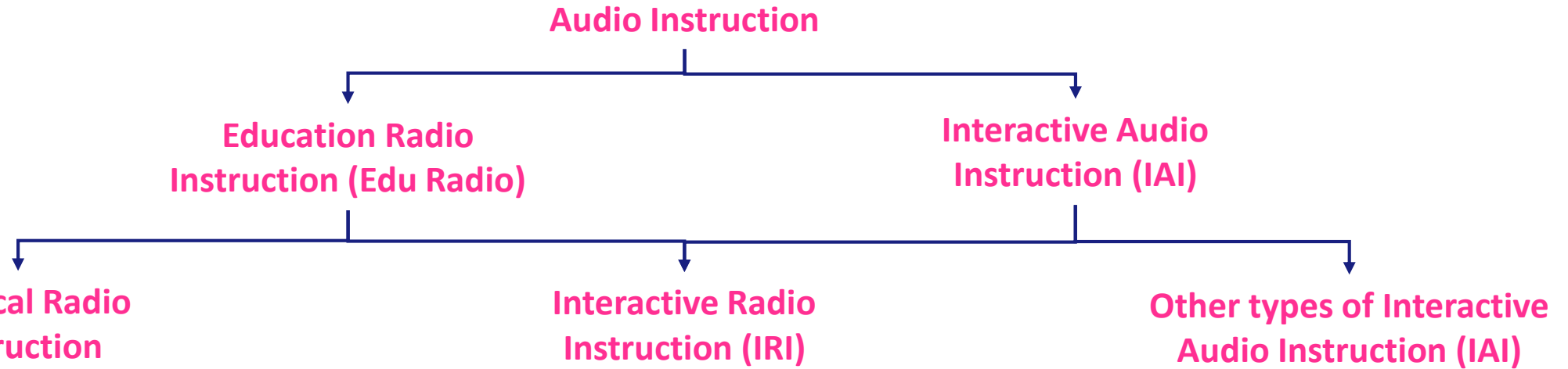


Middle- and high-income resource contexts in countries are **deploying online learning systems** (e.g. Learning Management Systems, Video Conferencing) with some also using broadcast media (e.g. television, radio, mobile phones) and print media as supplementary channels of delivery. However, online learning has **exposed huge digital divides** within and across countries. [4]



Low-resource contexts in Least Developed Countries (LDCs) and Fragile, Conflict and Violence (FCV) affected environments lacking the necessary connectivity and devices are **deploying alternative EdTech tools such as educational radio, television, mobile phones supported by print material.** [5]

What is Edu Radio? Types of Instruction



This is typically in lecture styled radio lessons thus usually used for older students or adult education. (e.g. Sierra Leone). Here, pedagogy and interactive learning is *not* the central focus. [3]

IRI is a distance education system that combines radio broadcasts with active learning to improve learning and teaching. IRI programs require teachers and students to react verbally and physically to exercises posed within lessons and to participate in group work, experiments, and other activities suggested by the radio program. [4] In an IRI lesson, learners engage in as many ways as possible to practice their new learning. They listen, play, sing, move, dance, answer questions, demonstrate skills to nearby listeners and evaluate each other's skills. [4]

IAI lessons use the the same content and format as IRI lessons. The only difference is these can be used via different delivery modes other than radio, allowing for greater reach. For example, this audio content can be used via mobile phones (e.g. memory cards/podcasts), Interactive Voice Response (IVR), MP3 players/CDs or audio streaming/ downloading.



[1]

[Click to hear a sample lesson!](#)



[2]

[Click to hear a sample lesson!](#)



[3]



See [Types of Edu Radio lessons](#)

Delivery/broadcast modes for Edu Radio content



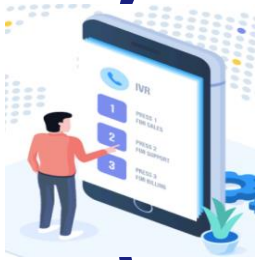
Radio

- National Radio networks
- Independent Radio Networks (e.g. [IRN in Sierra Leone](#))
- Community Radio Stations
- Shortwave & satellite radio [1]



Mobile Phones

- MP3 file shared via SMS, WhatsApp, Bluetooth, Memory card (e.g. SD card)) can be played on phones (can attach speakers to amplify sound) (e.g. SMS - Rising Academies)



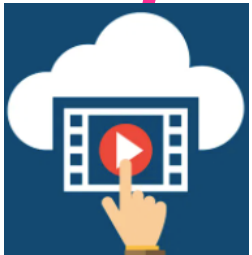
Interactive Voice Response (IVR)

- Callers can call a number to enter an IVR system run by Telecoms to listen to Radio lessons by navigating through menus. [2]



CDs/MP3 players

- Radio lessons can be distributed on CDs and as MP3 files via Memory cards and played via CD or MP3 players.



Audio streaming/downloading

- Audio downloading (hosted on a web page) or audio streaming (playing without downloading - e.g. YouTube, for those without storage space)



Podcasts

- Every new episode gets automatically delivered to the podcast app, upon subscription, without users having to access each new one through webpages.

Uses of Edu Radio



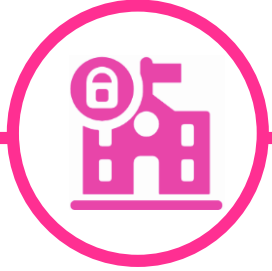
Supports early childhood to adult education

Has been used to deliver new content in low resource communities (e.g. [DRC](#), [Malawi](#), [Nepal](#)) as well as for youth & adult education (e.g. [South Sudan](#)) as well as for content revision, especially during emergencies.



Teaching & learning delivery model in emergency settings

Has been used to deliver quality instruction during emergencies in low-income countries as well as fragile & conflict affected countries since 1970s (e.g. [South Sudan](#), [Mali](#), [Nigeria](#), [Malawi](#), [Pakistan](#), [Afghanistan](#)).



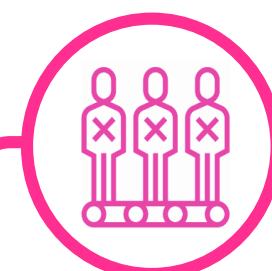
Distance education for out-of-school children

Can be used as a distance learning tool for children who cannot return to school and out-of-school children to ensure education continuity. (e.g. [Honduras](#), [Malawi](#), [South Sudan](#), [Tanzania](#), [Zanzibar](#), [Zambia](#)).



Teacher support and training tool & certification mechanism

Has been used as a teacher support tool to improve/deliver quality learning in formal & non-formal schooling (e.g. [India](#), [Liberia](#) and to facilitate teacher (and community facilitators) training as well as for teacher certification (e.g. [Afghanistan](#), [Mali](#), [Pakistan](#)).



Support for teacher shortages, including multi-grade classrooms

Has been used in classrooms and for subjects with teacher shortages particularly in multi-grade classrooms (e.g. Costa Rica, Karnataka in India) and and in local languages (e.g. [Mali](#)).



Supports health-based education for communities during crisis

Has been used to deploy Public Safety Announcements (PSA) & government programs including health based best practises & support to caregivers and communities to support children (e.g. [Liberia](#) during Ebola).

Reach

In contrast to the Internet which can be expensive, inaccessible & complex to use; radio is mostly free, has high penetration rates globally (especially in areas with low internet connectivity) & easy to use. Other delivery modes like feature phones have higher penetration in low resource settings & CDs/MP3 players can be procured easily.

Scalable and cost-effective

Operating cost per learner & recurrent costs of delivering Edu Radio programs are low. Edu Radio programs have high capacity to scale once the initial investment in training of staff and production is made. [4]

Easily delivered in local languages

Easier than other modes of education delivery to be delivered in local languages. Can be used to equitably deliver education to minority groups in their mother tongues (particularly beneficial for early childhood education).

Positive Externalities

Engages a potentially large secondary audience during broadcasts, thus modelling what high-quality ECD sounds like. Also, has positive externalities for teachers by acting as an in-service teacher training & support tool (e.g. reminders to call on a girl child for a response).

Improved Learning Outcomes

Evaluations have yielded consistent & significant evidence that Edu Radio lessons can increase learning of children, sometimes even outperforming peers attending formal schooling. [1] [2] [3]

Engaging

IRI can engage listeners mentally, emotionally, and physically by engaging them in as many ways as possible to practice their learning. In contrast, for example, most Edu TV lessons engage learners visually requiring them to be still and glued to their screens.

Monitoring

When using mobile phone mode of distribution, programs with built in software can track usage on SD cards. SMS can be used to collect data on usage, retention of information, impact and user satisfaction. When using IVR, usage can be monitored through call logs.

Adaptable content

Edu Radio content is adaptable to [different delivery modes](#). When using IVR delivery mode, content delivered can be personalised to the needs of the caller.

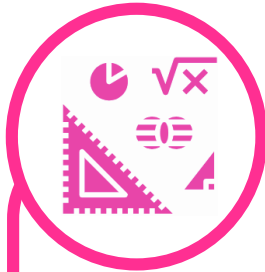
Who, what & how long is Edu Radio most suited for?



Who: Target Audience

IRI has been targeted to **diverse populations of learners in different learning environments, including:**

- Preschool children
- Caregivers of pre-school children
- Primary school students (during classroom-based instruction) [2]
- Secondary students
- School-age students who lack access to schools/ during emergencies (e.g. [Rwanda](#))
- Out-of-school youths (e.g. [Zambia](#), [South Sudan](#))
- Teachers (Training & in-classroom support tool)
- Adults (education)
- Populations that are vulnerable because of HIV/AIDS, refugee status, or other hardships (e.g. In South Sudan, it has been used to build capacity in a post conflict education system.)



What: Subjects

- **Best suited for languages & Math according to evidence.** But almost all basic primary subjects have been taught to children & adults using Radio.
- **Typically, used for single subjects, but more recently, been used for multiple subjects** together (e.g. Guinea: Math & French; Zambia: Math, Life skills, English; Haiti: Civics & Creole).
- **Other subjects/areas** include: Mathematics, Science, Health, Languages (e.g. English, French, Spanish, Portuguese), Reading, Environmental education, early childhood development (for teachers/communities).
- **Mostly aligned to national curriculum** for a subject & typically produced in coordination with education ministries. Where there is no national curriculum for a subject (e.g. environmental/ health education), IRI curriculum may become part of the curriculum development process.



How long: Duration

- Typically, designed to cover the entire grade-level curriculum for a subject for the year (e.g. [Nicaragua](#) [4])
- Each lesson can range between 20/30/60 minutes to multiple hours.
- Broadcast anywhere between once/twice a day (daily) to few times per week (instead of daily) (e.g. [Guinea](#), [Haiti](#) broadcasts lessons 3-4 a week).
- Few hours a week to multiple hours per week (e.g. [Liberia](#): twice a week; [Rwanda](#): 37 hours a week for primary students; 9-13 hours per week for secondary students)
- **Practical considerations have dictated these variations.**

Source: [World Bank 2005](#) & EDC. | [1] For a detailed breakdown of target audience (e.g. age groups, subjects, number of learners, etc.) for which Edu Radio has been deployed across the world, see [pages 91-96](#) of this World Bank 2005 report. [4] For more details, see [page 40-44 of this World Bank 2005 report](#). [2] "There is no evidence to suggest that IRI will not be as successful for the higher grades of primary school, although it may be necessary to provide a more extensive range of supporting print materials for those grades. Another consideration is that student ability levels in the higher grades are likely to vary more widely, which would require different programming strategies." ([World Bank 2005](#)) [4] The daily, year-long, full curriculum coverage used in the first IRI series, in Nicaragua, was meant to inaugurate a break with traditional classroom use of radio as a backup element that supplemented conventional instruction only in a minor way.



Click to see [Limitations](#)

[Back to Section Overview](#)



Key Takeaway: There is consistent and significant evidence that IRI can increase learning across subject matter, age, gender, and rural or urban location. Students show progressively greater learning with time. Edu Radio/IRI has been used successfully [across more than 35 countries](#). [1]



Positive impact on students in schools -

Evidence shows that “Interactive Radio Instruction (IRI) had improved learning outcomes in conventional classrooms by **between 10% and 20%** when compared with control classrooms not using IRI” and can be used to deliver their core curriculum. [2]



Positive impact on early childhood development -

IRI has a positive impact in the early stages of both physical and cognitive development. Results from Evidence from programs aimed at pre-primary learners find that they made progress in all assessed categories of holistic early childhood development. [3]



Positive impact on children of marginalised populations -

IRI has shown to bridge gaps in urban-rural achievement. (Limited) Evidence from fragile states demonstrated large effects on student learning outcomes in Math, English and local language literacy. [4]



Positive impact on teachers -

IRI used as for in-service professional development has shown improvements in teacher instructional practices in the short and long term. Teachers showed better understanding of pedagogical concepts & more often used active learning & student-centered techniques in lessons beyond Edu Radio lessons. Studies indicate that governments can successfully use IRI to strengthen teaching practices ahead of school re-openings. [5]



Positive simultaneous impact on students and teachers -

Studies that look at the impact of IRI on students as well as on teachers (by modeling pedagogical techniques and behaviors) simultaneously find positive impact on both. However, teacher practises beyond the IRI instruction make a difference to the extent of learning of students. This shows that the role of IRI & teachers must be well defined & aligned with best practises to be effective. [6]



Better results when facilitated by instructors & combined with activities –

Even though Edu Radio lessons can be self-directed, studies find that they are most effective when facilitated by a trained teacher or caregiver and when combined with interactivities. [7]

Overview: *What is required to start Education Radio?*

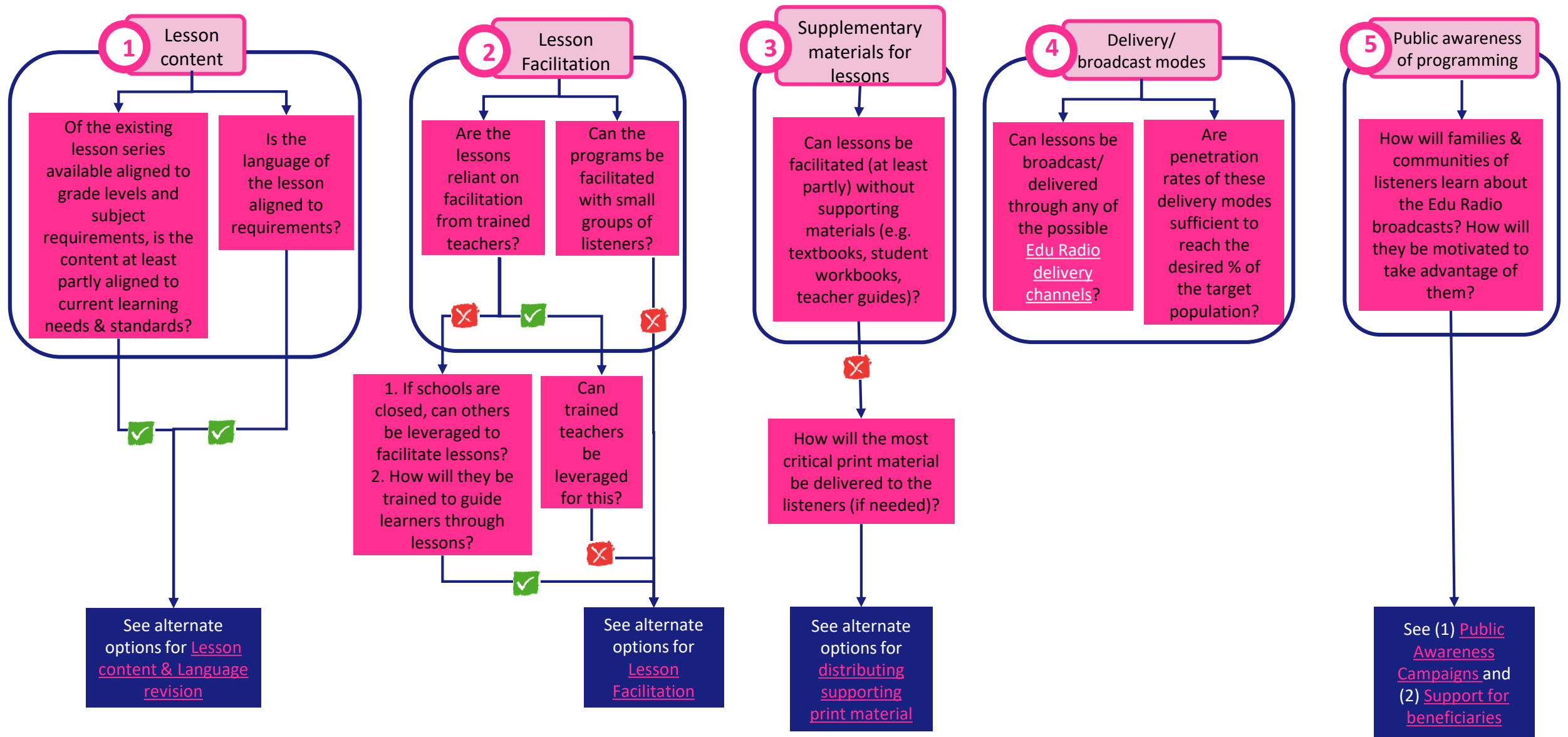
3. WHAT?

- Key [Questions](#) to ask
- Key [Decisions](#) to make
- Key [Capacity](#) elements required
- Role of [Teachers](#)
- Key [Cost Elements](#)
- [Challenges](#)
- [Limitations](#)



Click on any [hyperlink](#) to jump directly to the section.

Key Questions to ask for a quick start



Decision-making Questions

Action Items

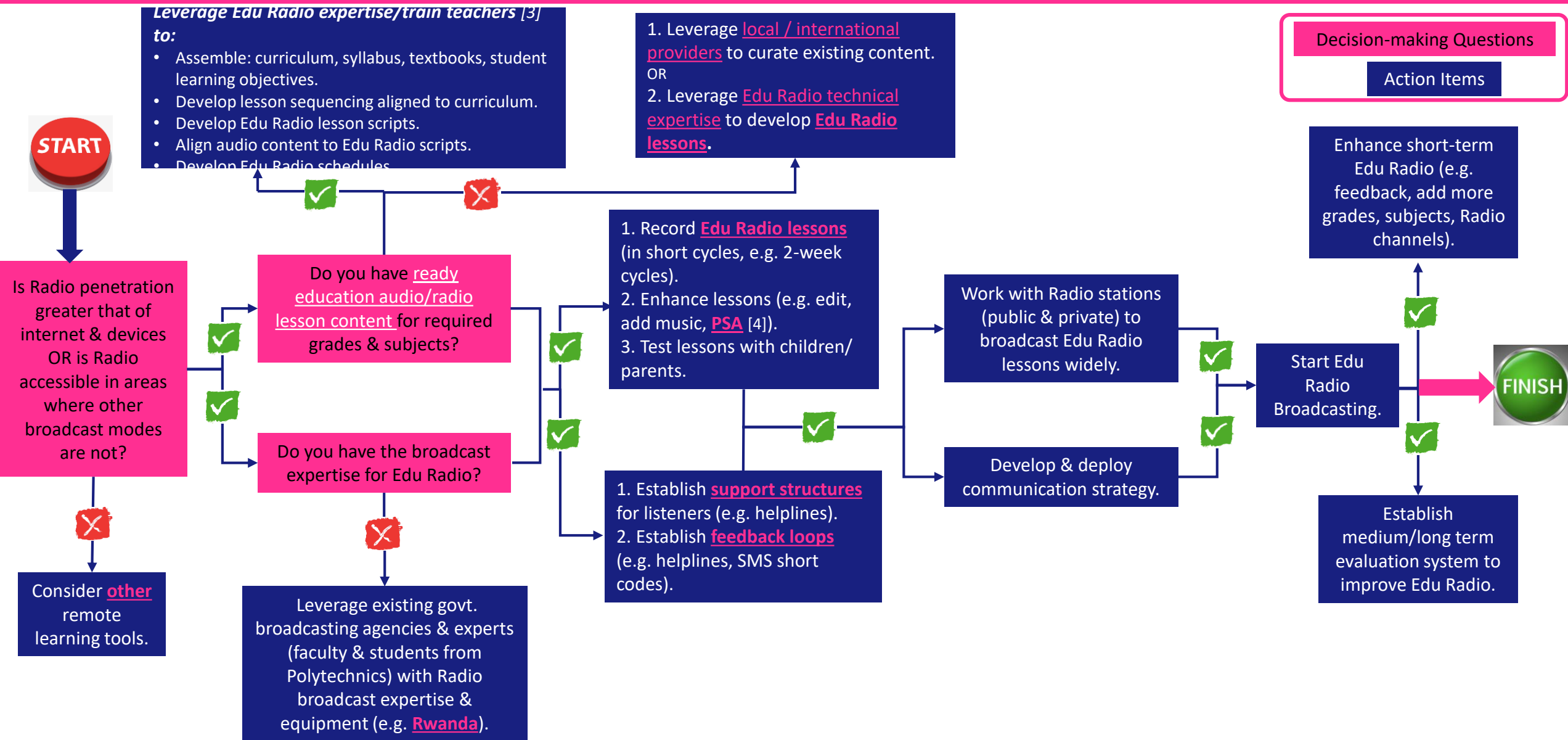
Note: This quick start is assuming existing Edu Radio content is being repurposed.

Source: [EDC, 2020](#) and [World Bank, 2005](#)



Click on hyperlinks to jump directly to the section.

Key Decisions to make for quick start [1] [2]

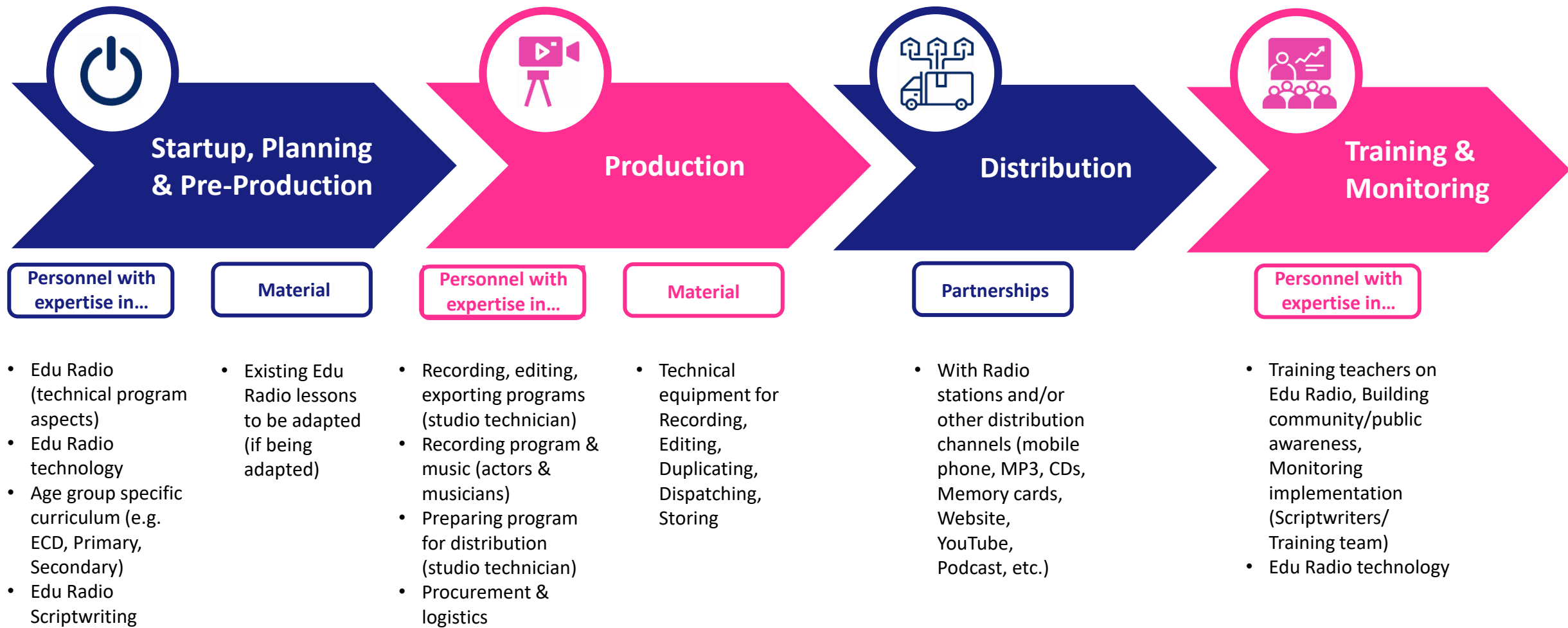


[1] This is a simplified version of a quick start decision tree. Different versions are possible. [2] [3] For a beyond-quick start, it is recommended to leverage technical expertise for program design and implementation. [4] PSA - Public Safety Announcements



Click for a [year-long sample timeline](#) for Edu Radio

Key Capacity elements required





Key Takeaway: “No IRI series has been designed to replace the teacher.” ([World Bank, 2005](#))



Development, testing & delivery of Edu Radio lessons

Teachers play a central role in:

- Development of Edu Radio programs (scriptwriting, supporting scriptwriters, aligning lessons to curriculum)
- Testing/formative evaluation of scripts and lessons
- Delivery & broadcast of lessons (e.g. classroom delivery, recording of Edu Radio programs, facilitating recorded programs while broadcasting on radio, interacting with students during radio lesson broadcasts, say, when they call in).



Teacher professional development

Many teacher trainings have been conducted entirely through Edu Radio programs while some complement in-service / pre-service teacher-trainings. They help teachers assimilate student-centered instructional practices into their own teaching (e.g. Nepal, Guinea, Nigeria, South Africa, Mali, Madagascar).



Scriptwriter asks for teacher feedback on a lesson script after testing in Madagascar



In-service teacher support

- Provides in-service teacher support and just-in-time guidance by building teacher skills (e.g. active teaching methods by guiding them through lessons). Enable teachers to play a more active role in a student-centered and interactive teaching & learning process in the classroom.
- Edu Radio lesson characters introduce and provide direction for games, exercises, and group work that are managed by the teachers. Teachers guide students through questions and answers, organize educational activities, and serve as role models through these lessons. Such lessons are most often paired with teacher guides for best results.



Provides support to low & high skilled teachers (including supporting teacher shortages)

- Low skilled teachers are set up to oversee students, reinforce participation & observe instructional modeling of Edu Radio lessons taking place.
- Skilled teachers work alongside lesson broadcasts to provide instant feedback, encouragement, & further support of lesson concepts to students during/after the lesson.
- Can provide support to substitute lesson facilitators (e.g. community volunteers, older students, [home teachers](#)) in cases of teacher shortages.



Key Takeaway: Estimates of costs for Edu Radio programs range between **US \$1.00 per student/year** [1] to a **few cents (>US \$1) per child/year** at a very large scale & using a broadcast medium [2].



Relativity of Costs

- High fixed costs but recurring costs are low.
- Initial costs are high for program development (e.g. planning, script writing, testing, production) but rebroadcast costs are minimal.
- Annual per-student costs are substantially lower than those for other technologies.
- Cost per teacher to use this as a teacher in-service training & support tool is low.
- Using ready programs is the cheapest. If edits to existing lessons are required, cutting is cheapest, followed by overdubbing and then by additions
- Broadcast airtime is one of the biggest costs.
- Benefits from economies of scale (but benefits accrue mostly to investment in program development rather than to payment of recurrent costs)



Key Cost Elements [1]

Cost to Institutions		Cost to Users
Starting Costs	Recurring Costs	
<ul style="list-style-type: none"> • Audience research/ program design • Lesson planning (Scope & sequence; Overview planning) [3] • Scriptwriting • Testing • Audio Production (e.g. recording of programs, music, editing - including altering existing programs, dubbing) • Developing education print material if needed (e.g. teacher guides) • Public awareness campaigns • Technical assistance • Staff salaries • Teacher & listener/home teachers training & support 	<ul style="list-style-type: none"> • Broadcasting airtime • On-going lessons planning [4] • Lesson delivery devices & supporting material (e.g. radio, mobile phones, memory cards, CDs, MP3 players, batteries, chargers) • Printing of education material (if needed) • Distribution (e.g. teacher guides, radios, batteries) • IVR: Toll-free line (if IVR is funded by institutions) 	<ul style="list-style-type: none"> • Electricity (solar power or crank-charged or battery charging) • Cost of playback devices: Radio, MP3, CDs (if borne by users) • IVR: Telecom use charge (if borne by users)



Teacher training in Zanzibar (one of the biggest cost factors)



See [Annex](#) for example of cost breakdown across years.

Source: [World Bank, 2005](#) & [EDC 2015](#) | Image Source: [World Bank / EDC 2015](#) | [1] [IDB](#) [2] [EDC 2015](#) [3] [4] Lesson planning is not a recurring cost **only** if a all lessons are developed at the start.



Key Takeaway: It is possible to plan around these challenges to some extent. [Click on challenges](#) to redirect to a part of this Knowledge Pack that can help with that challenge.



Student-based

- Lack of [support](#) & orientation on how to use Edu Radio lessons
- Lack of [engagement during lessons](#)
- Lack of reference [print materials at home](#)
- Speed of teacher delivery during lessons (too fast for students to understand)
- Lack of nutrition limits the ability of children to focus
- Limit on the duration during which students can actively learn from Edu Radio lessons



Family-based

- Lack of time to support children during home lessons
- Parental [language barrier](#) (compared to Edu Radio lesson language)
- Lack of [support for home teachers to support learners](#)



Home-based

- Lack of devices/supporting requirements (Radio, Mobile Phones, Batteries, Electricity)
- Energy challenges
- Inconvenient [home environment for learning](#)
- Poor radio signal (e.g. [Rwanda](#))



Institution-based

- Mostly directed at poor, rural areas, even though learning gains have been found in urban areas as well (EDC, 2020). This implies if IRI were also used in wealthier, urban areas, it might get political buy-in to sustain. [1]
- Large scale IRI programs are not seen as 'exciting' enough to maintain political & donor support for continuity. [2]



See [p.36-37 of EDC, 2015](#) for more common challenges &



Delivery mode-based

- **Monitoring:** Difficult to monitor usage of programs used through radio, MP3 & CDs.
- **Audio Volume:** When using Edu Radio on mobile phones/IVR, reach & volume may be limited without speakers. (planning around this - recording can partially address these challenges).
- **Coverage:** For **radio**, coverage is limited to number of hours of broadcast that can be secured; limited by radio network coverage and availability of radios. For **MP3/CDs**, coverage is limited by device availability and electricity availability (for charging, if not for playback). For **mobile phones**, coverage is limited by device & electricity availability (for charging, if not for playback). For **IVR**, coverage is limited by mobile phone network coverage, device & electricity availability (for charging).



Curriculum coverage

- Based on delivery modes, covering entire curriculum is challenging (e.g. [Sierra Leone](#) faced this challenge). No data exists to indicate how much of the school curriculum can be effectively provided through IRI. These issues are largely decided on costs of developing programs, the amount of airtime that is available for broadcasting, and the number of radios required in each school to accommodate multi-subject, multi-grade broadcasting. [1]



Cost of Broadcasting

- Typically, Edu Radio programs use free government radio broadcasting or community radio stations. But, long-term guarantees of these arrangements are challenging to maintain. Privatisation of public radio stations increases operating costs steeply. (E.g. [Sierra Leone](#) used free broadcasting via [Independent Radio Networks](#) during Ebola but is unable to bear these costs during COVID-19 and has thus moved to community radio stations where only limited time slots are available for Edu lessons.)

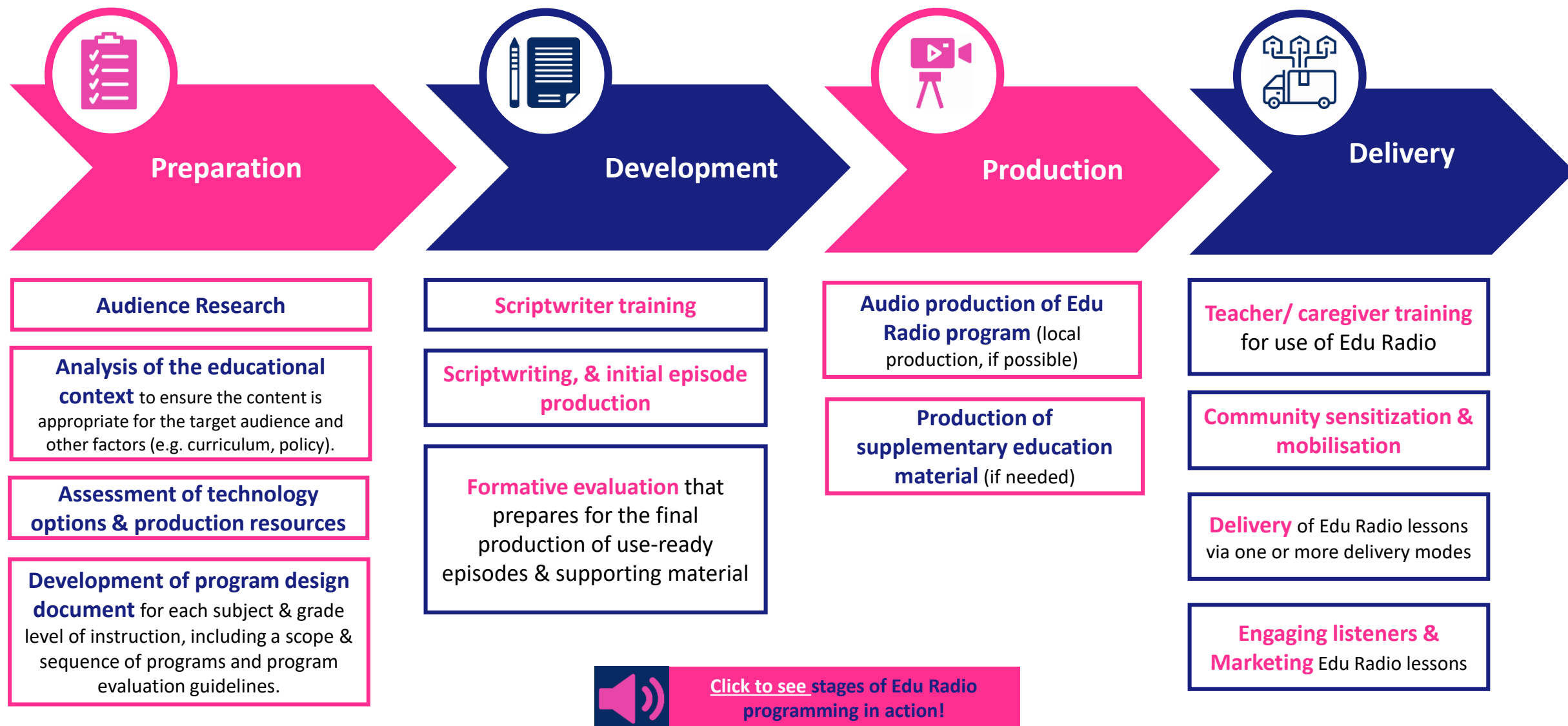
Overview: *How can Education Radio programming be implemented?*

4. HOW?

- [Stages](#) of Edu Radio programming
- [Types](#) of Edu Radio lessons
- How can the impact of Edu Radio programming be maximised?
 - Strengthen [student engagement](#) during lessons
 - Complimentary [multi-media](#) approaches
 - [Support](#) for beneficiaries
 - [Public awareness](#) campaigns
 - Leverage [stakeholders](#) in the ecosystem



Click on [hyperlinks](#) to jump directly to the section.

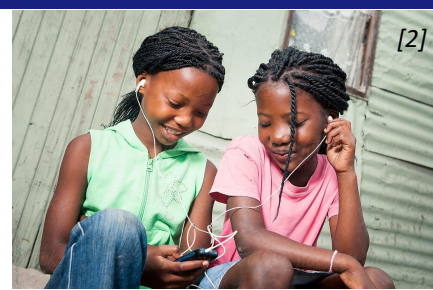


(1) See what this looked like in the [Democratic Republic of Congo](#). (2) For an example of this during COVID-19, [click here](#). (3) For details on each phase, see [click here](#).



[1]

Live Styled Lessons



[2]

On-demand lesson content



[3]

Edutainment content

Program Format



Lessons are pre-recorded & broadcast on radio as a live lesson. What makes this “live” is that the lesson cannot be paused. Being live, allows for live interaction as part of broadcasts. For instance, during the second half of broadcasts listeners can call and engage with facilitators on the content (e.g. [Sierra Leone](#)).

Lessons are pre-recorded & accessible on demand through various [delivery modes](#) like IVR, memory cards or online mediums like podcasts or YouTube. Lessons used as “live-styled lessons” as well as ‘edutainment content’ can be used as on-demand lesson content as well.

Lessons provide education in the form of entertainment and typically are rich with music, and engaging stories and characters (e.g. [Akili Radio](#)). Can be delivered as live-styled radio lessons or as on-demand content. Typically, produced by private providers (e.g. [Rising Academy Network](#), [Ubongo](#)).

Curriculum Alignment



Lessons typically aim to deliver content aligned to curriculum but have also been used to broadcast drama-styled content and edutainment content.

Lessons typically aim to deliver content aligned to curriculum but have also been used to broadcast drama-styled content and edutainment content.

While some lessons are partly aligned to curriculum, most do not aim to deliver curriculum-based lessons. Instead, many, especially content for younger children, aim to build 21st century skills & mindsets in children. (E.g. Ubongo tries to align its radio content to national curriculums before sharing it with countries.)

Advantage



Edu Radio lesson broadcasts follow a schedule for broadcast and ensure a structure and continuity of lesson delivery for students (assuming families listen to all scheduled lessons). Call-in sessions allow for listeners to immediately engage on lesson content making them more engaging.


Can be used as on-demand by teachers during in-classroom lessons (e.g. [Cambodia](#)) or [distributed via ways other than radio](#) like mobile phones, community loudspeakers (e.g. Peru, China), IVR, etc.

Typically, extremely engaging content for children. Even if content is not intended to deliver curriculum-aligned content, edutainment content, especially ones aimed at young children, aims to build skills and mindsets (e.g. [Akili Radio](#)).




[Click here](#) for examples of audio lessons, scripts & providers.

Strengthening student engagement during Edu Radio lessons




Call in during lessons

When using live radio broadcasts, design lessons to build in ample time (almost half) for listeners to call in & engage with the Radio presenter (e.g. [Sierra Leone](#)). Presenters can pose quiz questions during lessons based on the lesson topic for listeners to call in and share responses or invite listeners to call in for clarifications.




Activities during lessons

Build in plenty activities for students to engage in during lessons (e.g. singing, moving, dancing, responding to questions, role playing, evaluate each other's skills). Ensure plenty of student's verbal repetition in responses.




Characters & Storylines

Use engaging storylines & characters to teach lessons (e.g. [Akili Radio by Ubongo](#) uses the main character Akili in all lessons; [Nigeria](#)). Ensure both female & male characters present lessons to ensure especially younger children relate to characters.




Speaking pace of presenters

Ensure radio presenter speaks slowly enough during lessons to ensure students can follow along comfortably, especially if the language of instruction is non-native to listeners (e.g. English) or topics are complex (e.g. Math, Chemistry)



Auditory experience for listeners

Enhance the auditory experience by building in music, jingles, catchy songs to teach lessons (e.g. days of the week song in [Zambia](#), animal song in [Somalia](#)), sound effects (e.g. Madagascar), etc.

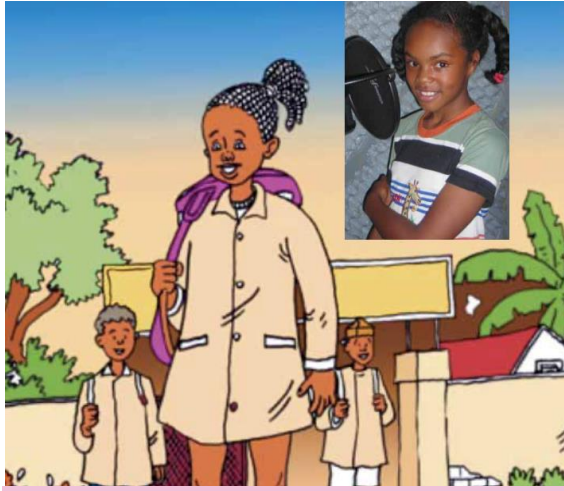


Pauses during lessons

Build in ample pauses during lessons for students to respond to questions & complete activities presented by radio presenters (e.g. [Cambodia](#)).



Creating sound effects in the studio in Madagascar



Child actor recording her voice for her radio character shown above in Madagascar



For strengthening student engagement using multi-media & material, [click here](#).

Image Source: [1] [2] [World Bank/EDC, 2015](#)



Key Takeaway: Use a combination of different media & education material to strengthen impact of Edu Radio lessons (e.g. radio + print in [Liberia](#))

Mobile Phones – Use mass messaging via SMS messaging, SMS short codes, WhatsApp, Call centre helpdesks to:



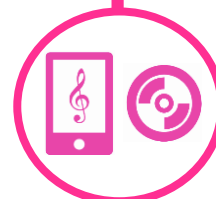
- Train “[home teachers](#)” on supporting students with home lessons
- Build awareness like, sharing schedules
- Use SMS short codes to share Edu Radio updates
- Share reminders/nudges with caregivers/students (e.g. [Ubongo](#))
- Collect Qs from students regarding lessons
- Receive feedback
- Conduct formative assessments
- Provide technical, pedagogical & socio-emotional support

Print – If possible, use print material to:



- As reference & supplementary material for lessons - student workbooks, textbooks, posters
- Guide teachers using lessons in-classrooms - teacher guides
- Guide “[home teachers](#)” to support children with lessons at home - teacher guides
- Provide supplementary activities - newspaper supplements, postcards, worksheets/assignments (eg. [Argentina](#), [Bangladesh](#), Spain) [5]
- Reference for students to follow along - textbooks (eg. Mexico)

MP3 Players/ Memory Cards/ USBs / CDs/ Online Mediums [1]



- Deliver Edu Radio lessons via [CDs/ MP3 format via memory cards/WhatsApp](#) so lessons can be played as [on-demand content](#)
- Podcast apps/Websites [2] can be used for digital downloads of Edu Radio lessons requiring low bandwidth
- Use USB devices to distribute Radio lessons that can be plugged into TVs and viewed as on-demand content. (e.g. [Ubongo](#))

Study Material



- Use supporting educational study material during lessons (e.g. science lessons may need a ruler/magnet)

Community Loudspeakers



- Use them to broadcast lessons; build awareness; sharing radio broadcast schedules verbally; share reminders/nudges (e.g. [China](#), Peru)



Provide Technical & Pedagogical support

- **Technical Support** - Use toll-free call centre helplines, WhatsApp numbers, email addresses, chatbots to provide technical support [1] to Edu Radio listeners (e.g. [Turkey](#)).
- **Pedagogical Support** – If possible, especially during emergencies, leverage teachers to provide pedagogical support using mobile phone (e.g. China). Provide support & subsidise teacher communication (calls, text messages, data).



Provide socio-emotional support

- **Why provide this?** Transition to education entirely through Radio is difficult for students & caregivers. Socio-emotional support will ease the transition.
- **How?** Provide multiple helplines to support parents (e.g. [Jamaica](#) has 36). Communicate directly with students, parents, teachers through SMS, videos, live stream chats, TV programs, etc. (eg. [Croatia](#), [Spain](#)). Turkey has a “Parent Hour” on TV to support caregivers.



Collect & Use continuous feedback

- **Pedagogical feedback** - To understand effectiveness, improve programming & increase uptake of Edu Radio, enable two-way communication, continuous feedback and insights from users (e.g. [China](#), [India](#), [Pakistan](#), [Russia](#))
- **Non-pedagogical feedback** – Collect data on the use data of Edu Radio lessons to understand & improve programming.



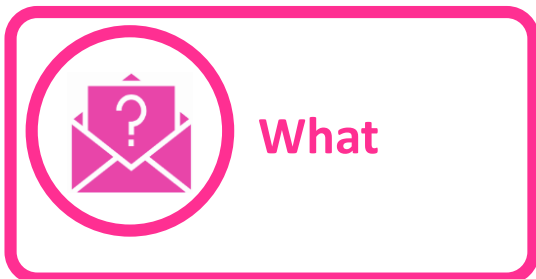
Guidance/ Material for Caregivers/ Families/ “Home teachers” [2]

- Distribute low cost devices to those with no to access lessons like radios/MP3 player (e.g. [Malawi](#))
- For home lessons, provide home teachers with guidance on how to support students during Edu Radio lessons, how to convert home space into classrooms, what learning material is needed for lessons. [3]
- Share image-based, low-text instructions on how to facilitate interactions with media content. [4]
- Send schedules, nudges, activities via SMS [5]/ WhatsApp/ community loudspeakers regarding Edu Radio lessons.

[Turkey](#) collect continuous feedback for monitoring & improvement of its remote learning tools.



Source: [1] Technical support here means support to beneficiaries having technical issues with accessing Edu Radio lessons (e.g. no radio signal, unable to tune into radio station). [2] See slide explaining “home teacher”. [3] See Alternative options for lesson facilitation for home lessons. [4] Source: [INEE, 2020](#); [EdTech Hub](#) [5] Source: Foulds & Bucuvalas, 2019; [EdTech Hub](#)



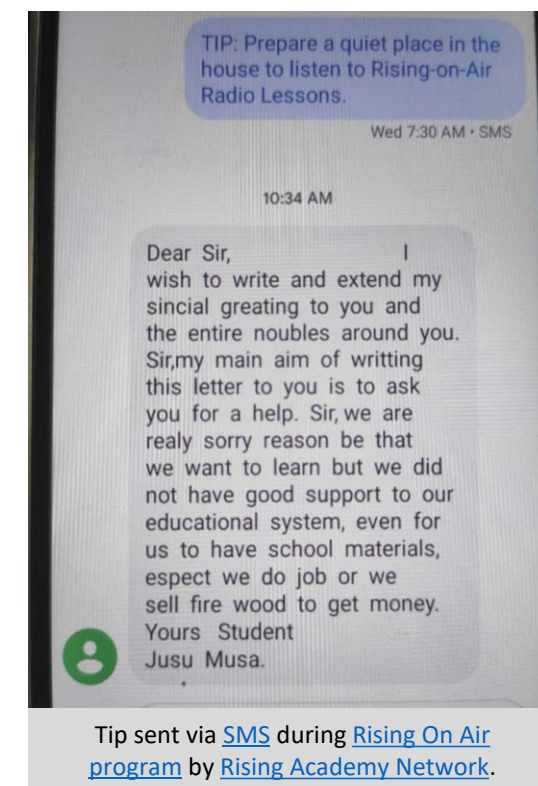
- Communication continuously & widely before as well during Radio lessons are being broadcast.
- Build public awareness & excitement about upcoming programming well BEFORE starting broadcasts through [as many modes as possible](#).
- Share simple schedules for when, where & for whom (grade level, subject, language) lessons will be broadcast on radio.
- At this stage, if lessons are being accessed from home, recruiting & training “[home teachers](#)” should be a critical part of these communication campaigns.



- Ads via print like newspapers & hoardings (e.g. [Brazil](#)); TV or radio (e.g. [Liberia](#)); mass messaging & circulating short teaser videos via text messages or WhatsApp (e.g. [Peru](#), [Pakistan](#)); updates via social media like Facebook (e.g. [Rwanda](#)), websites of education ministries (e.g. [Belize](#)).
- Announcements on loudspeakers in communities/local religious institutions (e.g. [China](#), [Pakistan](#), [Peru](#))
- Work with ministers to share communication on social media to increase media coverage (e.g. [Pakistan](#)).
- Leverage schools & teachers to communicate locally with students & families.
- Even if broadcasting occurs on national radio stations, advertising should be broadcast on as many regional & community radio stations as possible for wider reach.



- Daily broadcast times, channels & supporting resources (e.g. tips, how to access further schedules, helplines, lesson learning material, etc.)
- Children CAN & MUST continue their education despite the emergency.
- Radio is an effective mode of education continuity. Song & play during lessons mean children ARE learning.
- Programs are the government-endorsed alternative to in-person schooling.
- Ensure children listen daily (including protect them from distractions & freeing them from chores) & organise learning spaces & material (e.g. ruler, magnet) for lessons.
- They CAN & MUST facilitate these lessons with help from radio teachers & it is easy! They must participate in training for this before the programming begins.
- Encourage community members to use Edu Radio for their children as well.



Leverage stakeholders in the ecosystem to enhance Edu Radio programs



Students – To ensure a consistent, dedicated listening population; get feedback during market testing of lessons; participate in development of lessons, especially lessons with student character voices.



Teachers & Educators – To support development of lessons; student engagement; assessments; feedback. (See [‘Role of Teachers’](#))

Caregivers/Families – To support student learning at home by acting as “[home teachers](#)” if needed; support students to listen to lessons regularly (free them from distraction & chores); provide feedback during market testing.



Communities, Civil Society & Religious groups – To support & motivate teachers, families & children to use Edu Radio lessons; to set up small listening groups; to distribute supporting print material (if needed).

Private sector – To leverage existing education radio content as well as develop content for lessons.



Government departments & agencies – To coordinate different aspects of Edu Radio programming & support structures like listener helplines, ministry website & public awareness (e.g. district officials, teachers).

Media regulatory authorities & Radio stations (public & private) – To leverage reach of Radio networks to broadcast Edu Radio programs widely.



Telecom operators – To expand access to the Internet by subsidising/ zero-rating educational online platforms, to set up short SMS codes & helplines to improve interactive elements of Edu Radio.

Overview: *In this section, find additional resources.*

5. Additional Resources

- Case Studies: [Overviews](#)
 - Ministry of Education, [Sierra Leone](#)
 - [Rising On Air](#) (Rising Academy Network)
 - Ministry of Education, [Rwanda](#)
- Sample [radio lessons, scripts & providers](#)
- [World Bank projects](#) with Education Radio components (during COVID-19)
- Where to [learn more](#) about Edu Radio?
- [Acknowledgements](#)
- [Annex](#)



Click on any [hyperlink](#) to jump directly to the section.

Ministry of
Education,
Sierra Leone



[Case Study Overview](#)

[Detailed Case Study](#)

Rising Academies
(Liberia, Gambia, Chad,
Guinea, Sierra Leone)

R I S I N G

ON • AIR

[Case Study Overview](#)

[Detailed Case Study](#)

Ministry of
Education,
Rwanda



[Case Study Overview](#)

[Detailed Case Study](#)



Click on hyperlinks to jump to case studies overview.

R I S I N G

ON • AIR

Rising Academies (Rising On Air)

[Rising Academies](#) is an organisation that recently started providing free to use pre-recorded Edu Radio content. [31 collaborators](#) have been using their work during COVID-19. They support other organisations to start Edu Radio lessons as well.

- **Services:** [Audio content](#), [adaptable lessons scripts](#); [teacher tutorials](#) on phone calls to students; [phone call scripts](#); [SMS scripts & plans](#) (aimed at caregivers)
- **Languages:** [English](#), [French](#), [Arabic](#)
- **Grade Levels:** Early Childhood, Lower Primary, Upper Primary and Secondary
- **Subjects:** Literacy, Math
- **Experience with countries:** Sierra Leone, Liberia Gambia, Chad, Guinea
- **Target audience:** Students, Teachers (training), Parents

Education Development Center (EDC)

[EDC](#) has 30+ years of experience in Interactive Audio/Radio Instruction (IAI/IRI). A [catalogue of programs](#) maps each program to grade levels, subjects, languages and countries it has been used for.

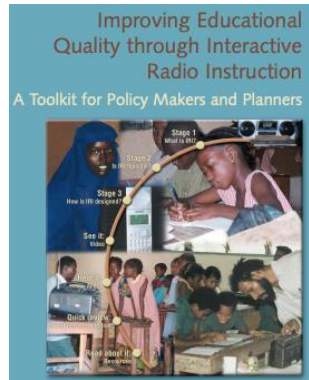
- **Services:** [Audio content & scripts](#) (from government-approved IAI/IRI programmes) also on [YouTube](#) (e.g. [Latin America](#)); Teacher training (e.g. [Liberia](#))
- **Languages:** 20+ (e.g. English, Spanish, French, Malagasy, Chichewa, Bamanankan, Songhai, Kinyarwanda, Kiswahili, Somali)
- **Grade levels:** Preschool to Grade 7
- **Subjects:** Language, literacy, Math, social studies, science, life skills (including socio emotional learning) including accelerated curricular alternatives
- **Experience with countries:** 20+ countries
- **Target audience:** Students, Teachers (training), Parents



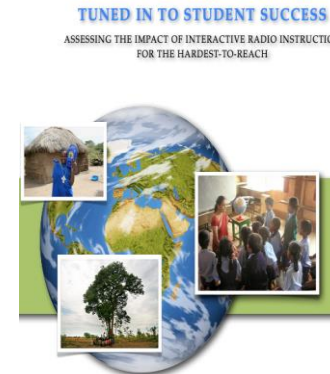
Country	Project Name	P-code	Key TTLs
Angola	Girls Empowerment and Learning for All Project	P168699	Peter Anthony Holland, Leandro Oliveira Costa
Bangladesh	Bangladesh COVID 19 School Sector Response (GPE)	P174268	Tashmina Rahman, Mokhlesur Rahman, Peter Darvas
Burkina Faso	Education Access and Quality Improvement Project Additional Financing	P174268	Adama Ouedraogo
Ghana	Ghana Education Outcomes Fund	P173282	Eunice Yaa Brimfah Ackwerh, Yoko Nagashima
Mali	Mali Improving Education Quality and Results for All Project (MIQRA)	P164032	Adama Ouedraogo
Mozambique	Ending Learning Poverty in Mozambique	P172657	Marina Bassi, Lucia Jose Nhampossa
Rwanda	Additional financing to Rwanda Quality Basic Education Project	P168551	Huma Kidwai, Lillian Mutesi
Sao Tome and Principe	Girls Empowerment and Quality Education for All Project	P169222	Leandro Oliveira Costa

[1] Non-World Bank staff can also access these documents through [this external page](#) using the project codes above (e.g. P174026). These will be shared onto the external page once they are finalised.

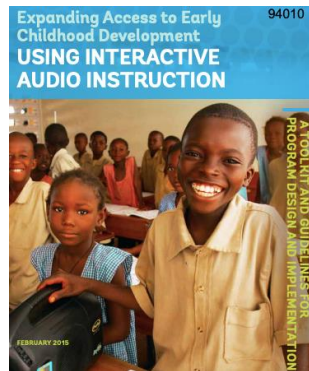
Where to learn more about Edu Radio



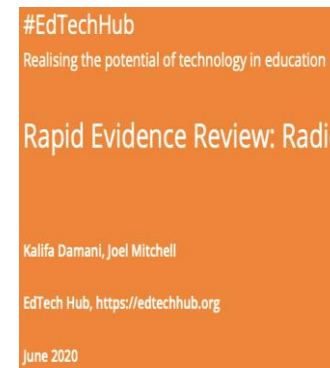
[Improving Educational Quality through Interactive Radio Instruction: A Toolkit for Policy Makers and Planners](#), World Bank, March 2005



[Tuned In To Student Success: Assessing The Impact Of Interactive Radio Instruction for the Hardest-To-Reach](#), Education Development Center (EDC), February 2009



[Expanding Access to Early Childhood Development using Interactive Audio Instruction](#), World Bank/EDC, February 2015



[Rapid Evidence Review: Radio](#), EdTech Hub, June 2020

Acknowledgements

Special acknowledgement and gratitude to the following people for supporting this work:

Name	Organisation
Himdat Iqbal Bayusuf	The World Bank
Lillian Mutesi	The World Bank
Huma Kidwai	The World Bank
Sachiko Kataoka	The World Bank
Pedro Cerdan-Infantes	The World Bank
George Cowell	Rising Academies Network
Rachel Christina	Education Development Center

Overview: *In this section, find even more additional resources.*

6. Annex

- Case Study Overviews:
 - [Sierra Leone](#)
 - [Rising On Air](#) (Rising Academy Network)
 - [Rwanda](#)
- Radio Penetration Data: [Part I](#) and [Part II](#)
- Alternative Options:
 - [Lesson Content & Language Revision](#)
 - [Lesson Facilitation](#)
 - [Distribution](#) of supporting print material
- Sample [Cost Distribution](#)
- Sample [year long](#) timeline for implementation of an Education Radio intervention



Click on [hyperlinks](#) to jump directly to the section.



Lessons are focused on student engagement: Each lesson is 1 hour long of which 30 minutes is lesson delivery and 30 minutes is for listeners to call in with questions and engage with the content.

Lessons content aligned to student performance data: Student performance data from previous years was examined to understand gaps in learning and Edu Radio lessons were aligned to these gaps.



Teachers are leveraged to support teachers: For example, teachers with experience during Ebola were leveraged to train and support newer teachers. Teachers delivered sample lessons to the entire group who observed and provided feedback to improve before recording Edu Radio lessons. Subject teachers lesson planned together to be able to support each other.

Creative communication was used to build public awareness: For example, community loudspeakers were also used. Where possible, people were tasked with going into communities to discuss Edu Radio lessons in-person by playing sample lessons. Where possible, volunteers distributing dry ration food to communities were tasked with sharing communication regarding programming.



Learnings from experiences during Ebola improved Edu Radio: For example, during Ebola, many girls became pregnant. As a response, life skills Edu Radio programs were deployed during COVID-19 to share gender-based messages for communities.




[Click here](#) to access the full case study on Sierra Leone.

RISING ON AIR




Rising On Air’s free Edu Radio lessons can be used across the globe: Their Edu Radio lessons are focused on literacy & numeracy across K-12 and are available for anyone across the globe to use. Lessons are based on general learning objectives across all grade levels & not specific to any one country’s curriculum so that users across the world can adapt them. Their [radio scripts](#) demarcate where they can be contextualised. Resources are available in French, Arabic and English.

Mobile Phones are used to compliment the Edu radio lessons: (1) [SMS](#): Behavioural nudges are sent via SMS to families [covering a range of topics](#) (e.g. public safety announcements, providing guidance to support children, reminders & schedules). (2) **Hotline**: A customer care styled hotline has been set up to field queries from users regarding the Edu Radio programs.




Teachers are leveraged to support regular check-ins with children: Teachers of the Rising Academies schools have been leveraged to make phone calls to students to ensure education continuity & that students return to school. Phone call scripts lasting 6 - 10 minutes have been developed & teachers have been trained on using them. Phone calls cover a variety of topics (e.g. children well being by checking that children are safe given they are prone to domestic violence at home; troubleshooting to help them access Edu Radio lessons at home)

Their teacher training has been adapted to be broadcast on Radio: Rising On Air has been delivering [its teacher training](#) via 15minute Radio broadcasts. [Scripts](#) are freely available to anyone across the globe to use including education ministries.




They support & convene other organisations: Rising Academies has begun working with other organisations to share their expertise with Edu Radio to support others (e.g. MyAgro used expertise shared by Rising On Air to deploy radio lessons to 400K farmers in Mali). Additionally, they are currently collaborating with [30 partner organisations](#) & have set up a [Community of Practise slack channel](#) for all organisations and individuals to collaborate on Edu Radio.

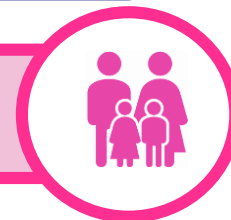


[Click here](#) to access the full case study on Rising Academies.



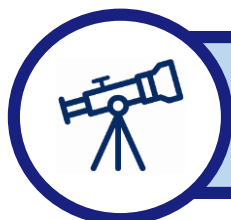
Leveraging stakeholders for quick deployment: Rwanda leveraged stakeholders to quickly deploy Edu Radio programming as a remote learning tool during COVID-19. These include Rwanda Broadcasting Agency, Rwanda Polytechnic faculty and students (specializing in radio production and broadcasting) and University of Rwanda (who has its own radio channel).

Leveraging parents to strengthen Edu Radio: Rwanda is leveraging development partners to collect feedback from parents on Edu Radio lessons broadcasts to strengthen Edu Radio lessons.



Provide parental guidance through Edu Radio: Beyond the short-term, the Rwanda Education Board aims to air instructional broadcasts directed at parents/caregivers to support their involvement in early stimulation, student learning routines and processes, as well as psycho-social wellbeing of children.

Enhancing Edu Radio by meticulously responding to feedback: Some of the feedback received from parents include - lack of engagement during lessons & lack of parental time to support. To this, Rwanda is responding as follows: developing interactive Edu radio lessons & adapting broadcasting schedules to suit parents.

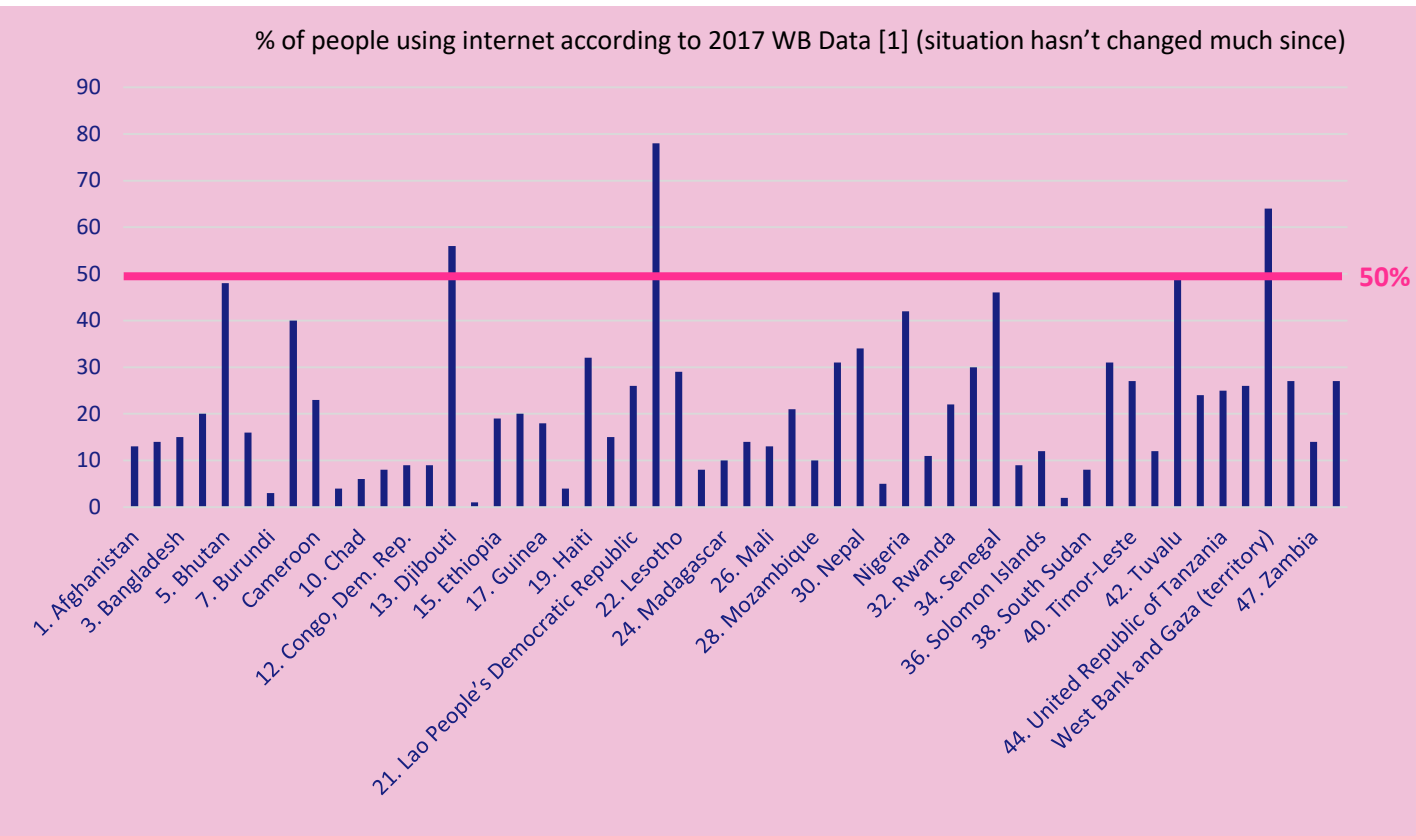


Developing capacity to use in the long-term: Rwanda is working to sustain Edu Radio in the long-term by developing the government's production capacity for programming to reduce costs; broadcast educational content for longer hours; for all grades; for all exam-based subjects; and for health & social campaigns.

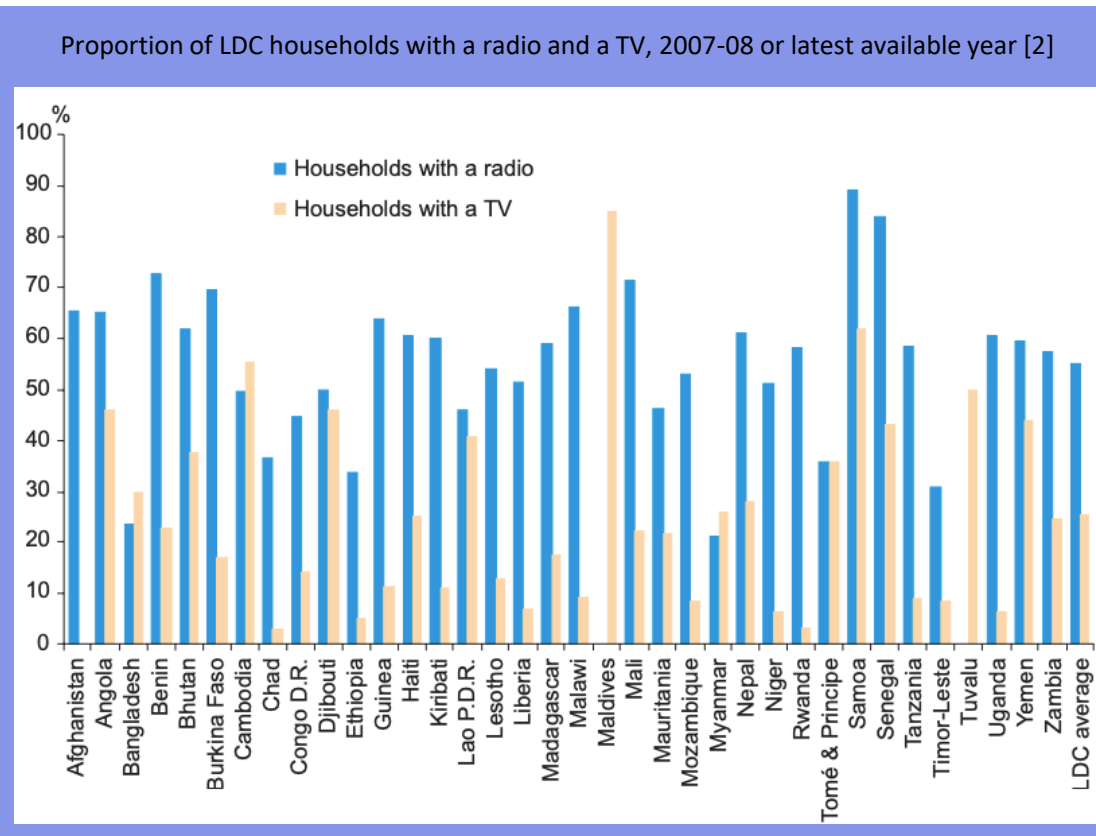


[Click here](#) to access the full case study on Rwanda.

Only 5% (3 of 54) LDC and FCV countries have Internet penetration rates above 50%.



Radio penetration is higher than TV penetration in LDCs



See here for more on Radio penetration data.

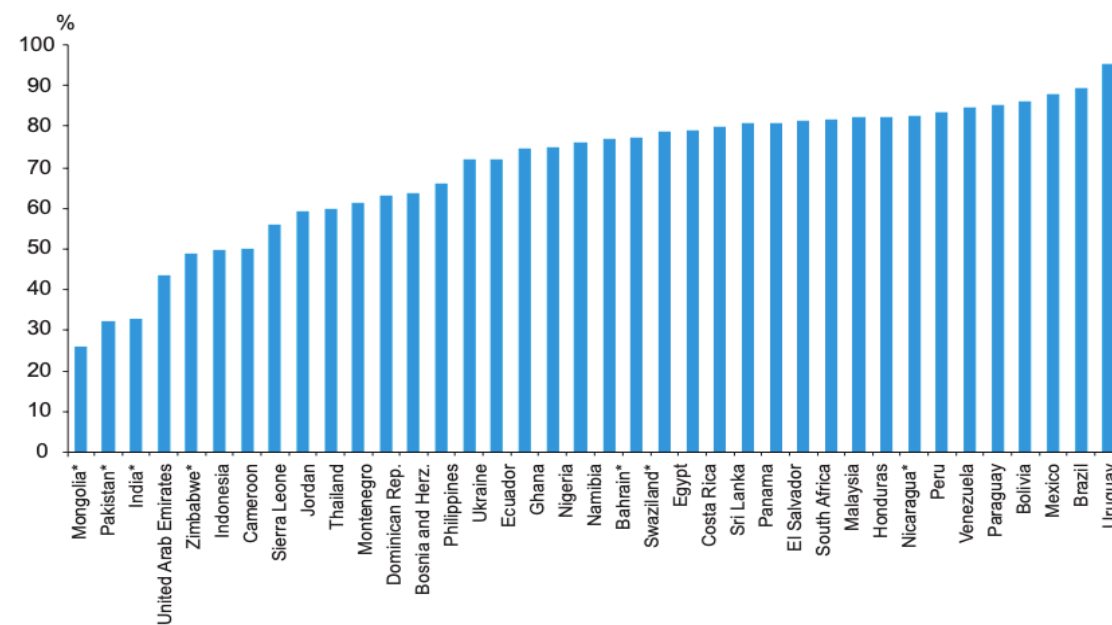
Source: [1] Internet data- [WB Statistics](#). Countries are LDCs as per [UN categorisation](#) and FCV as per [World Bank categorization](#) (from: [Remote Learning Knowledge Pack](#), World Bank 2020). [2] [World Telecommunication/ICT Development Report 2010](#)

Annex: Radio Penetration Data

Households with a radio by urban/rural location & household composition (%):
2019 or latest year available [1]

Economy name	Latest year	Urban households			Rural households			
		All households	Total	with children under 15	without children under 15	Total	with children under 15	without children under 15
Albania	2018	-	...	...	...	...	...	...
Algeria	2018	52.6	54.3	47.5	68.3	48.9	36.0	85.3
Armenia	2016	98.9	98.6	99.1	98.3	99.5	100.0	99.1
Azerbaijan	2018	99.7	99.8	...	...	99.6	...	...
Bahrain	2018	57.6	57.6	...	...	...	...	...
Bangladesh	2019	0.6	...	...	...	...	...	...
Belize	2019	58.7	59.8	60.9	58.8	57.7	56.8	59.1
Bermuda	2016	89.0	89.0	...	...	...	...	...
Bhutan	2017	23.9	18.6	...	...	27.0	...	...
Bolivia (Plurinational State of)	2018	43.9	36.5	34.8	38.4	59.9	54.1	64.8
Bosnia and Herzegovina	2019	64.9	65.8	71.7	63.6	64.2	74.9	60.5
Brazil	2018	62.4	62.3	59.2	64.3	63.6	60.4	66.1
Brunei Darussalam	2018	63.0	...	...	...	...	...	...
Cabo Verde	2018	46.4	50.1	49.2	51.2	38.3	35.8	41.4
Cambodia	2017	42.0	50.0	...	...	39.0	...	...
Colombia	2018	69.7	69.5	...	...	70.4	...	...
Costa Rica	2017	62.1	65.0	63.5	66.1	54.5	52.0	56.7
Cuba	2017	52.0	...	...	...	...	...	...
Denmark	2018	30.8	...	...	...	...	...	...
Dominican Rep.	2017	55.3	56.8	54.1	59.0	49.2	47.5	50.5
Ecuador	2017	25.9	24.3	21.3	28.2	29.7	26.8	34.4
Egypt	2017	28.4	32.3	26.6	37.2	25.2	23.5	27.7
El Salvador	2017	28.6	26.9	24.4	29.6	31.3	30.1	32.9
Georgia	2018	1.5	1.5	1.8	1.3	1.5	1.6	1.5
Iran (Islamic Republic of)	2017	92.7	94.4	96.6	92.3	87.3	91.6	82.6
Jamaica	2016	73.2	72.1	...	...	74.5	...	...
Kazakhstan	2015	5.6	5.7	4.3	6.2	5.5	4.7	5.8
Kuwait	2018	71.6	...	...	...	...	...	...
Malawi	2018	33.6	55.6	...	...	29.3	...	...
Malaysia	2018	95.7	96.6	...	...	92.0	...	...
Mali	2018	100.0	54.5	55.1	50.1	61.2	61.9	52.5
Mexico	2018	56.2	58.2	55.8	60.3	49.0	48.7	49.5
Moldova	2018	59.9	55.1	50.1	...	61.9	52.5	...
Mongolia	2015	13.5	6.6	6.1	7.4	26.6	25.2	28.7
Montenegro	2015	80.6	79.1	...	...	83.6	...	...
Niger	2018	37.0	52.2	50.8	56.3	34.5	36.5	26.6
Panama	2015	71.7	72.7	72.8	72.6	69.3	68.2	70.6
Paraguay	2018	76.4	77.5	78.5	76.3	74.5	73.8	75.9
Peru	2018	71.9	71.5	70.3	72.7	73.3	71.8	74.8
Philippines	2016	29.6 ¹	...	...	...	...	...	...
Qatar	2019	12.9	12.9	5.6	18.7	...	...	...
Rwanda	2016	59.8	67.4	...	...	58.1	...	...
Samoa	2016	61.9	67.6	...	...	60.5	...	...
Serbia	2018	69.6	69.0	52.2	75.4	70.7	55.0	77.1
Singapore	2017	63.0	63.0	63.9	62.5	...	...	...
South Africa	2017	51.3	51.9	50.9	52.5	50.1	51.0	48.9
Spain	2019	67.8	69.6	61.7	72.6	65.7	61.4	67.4
Ukraine	2018	1.0	1.2	...	...	0.8	...	...
United Arab Emirates	2018	18.2	...	...	...	...	...	...
Uruguay	2018	79.5	...	...	...	...	...	...
Uzbekistan	2018	20.8	19.2	19.1	19.5	22.7	22.3	24.2

Proportion of households with a radio: 2007-2008 (non-LDC countries)





Lesson Content Revision

If content revision includes...	Instead try...
Incremental & academic upgrades	No program alterations
Revision of incorrect terminology & references	Overdub unwanted sections
Upgraded ideas & methodology	Selectively cut parts of program
Critical new methodology & approaches	Re-record entirely new segments

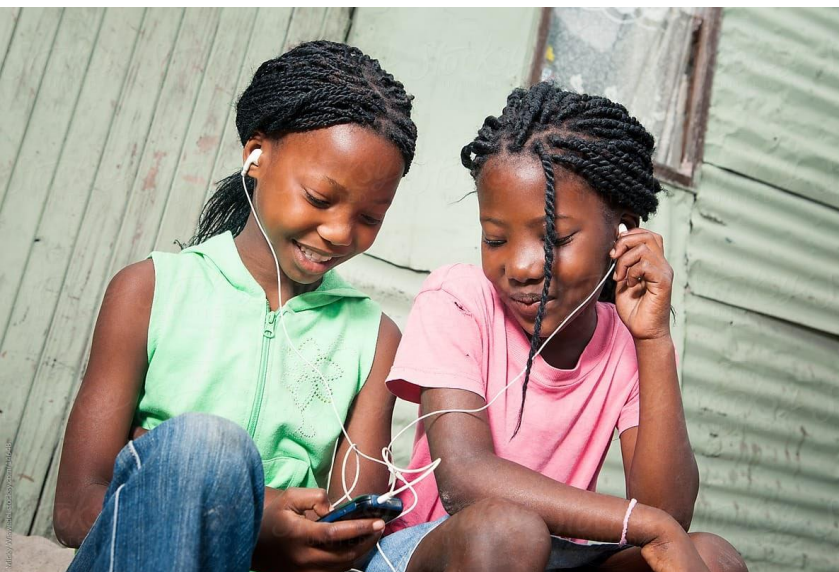


Language Revision











If...	Instead try...
Incremental & academic upgrades	No program alterations
Revision of incorrect terminology & references	Overdub unwanted sections



See [this EDC 2020 report](#) for more details.



Interactive Edu Radio lessons can be used in groups of 2.















If...	Instead try...
 Schools are not yet open but small groups of learners can be gathered	 <ul style="list-style-type: none"> Advise caregivers to gather small numbers of learners. Contact civil society actors, such as community radio stations, local NGOs & religious leaders, and task them to support communities to set up small learning groups
 Listeners cannot be gathered to do lessons activities in pairs & small groups	 Ask parents, caregivers, relatives, older siblings to role-play as “ home classmates ”. Conduct lessons in groups of 2 if peers are required for lessons (all IRI/IAI lessons).
 Blackboards are not available	 Suggest “ home blackboards ” to families i.e. other surfaces to write on like flipcharts stuck to the wall; flattened cardboard boxes; whiteboard markers used on smooth, white surfaces in the house like tiles or the fridge surface; sand/mud which can be written on with a stick
 Listeners cannot enjoy a quiet listening environment free from distraction	 Ask caregivers to: <ul style="list-style-type: none"> Select a space as quiet as possible, minimise interruptions & ensure children remain focused (e.g. from siblings, neighbors, animals) Release children from chores during this time & ensure the child attends lessons as often as it is broadcast
 Trained teachers are not available to facilitate lessons	 Leverage & train parents, caregivers, older siblings, other family or community members to role-play as the “ home teachers ”. In this case, ensure home teachers are trained adequately before lessons begin. This is critical to success of Edu Radio lessons.



See [this EDC 2020 report](#) for more details.



If print material is not available, add disclaimers before lessons to warn about missing material.

If...	Instead try...
 Delivery of student workbooks is not possible at all	 <ul style="list-style-type: none"> • Add disclaimer to lessons about this “missing” material (so listeners are not befuddled by this) • Cut out the parts that are material dependent (be careful that this does not impact the learning objectives)
 Governments cannot deliver supporting print material	 Enlist NGOs & civil society
 Door-to-door delivery is not possible	 Enlist NGOs & civil society Delivering to local businesses/government offices that remain open & broadcast directions to families on how to collect them.
 Normal delivery channels are not working	 Look for private transport systems such as local bus companies, or approach companies such as mobile carriers/bottling companies & negotiate a public-private partnership agreement to piggyback on the means they use to disseminate scratch cards & drinks.
 Book binding costs are high, or print-run timelines are long	 Investigate possibility of publishing regular low-cost inserts in local newspapers.
 Internet accessibility & cost are not prohibitive	 Digitise supporting student workbooks & teacher guides to make them available for download.
 Downloading is not possible but receiving texts is free	 Set up a text- based distribution system. Participants can enroll in a short SMS code system & receive a daily text back that prepares them for the upcoming broadcast. They can then transcribe their incoming texts as needed onto their “blackboard” or into learner’s books.



See [this EDC 2020 report](#) for more details.

Distribution of Costs in an IRI Project in Africa (percent)

Cost item	Year 1	Year 2	Year 3	Year 4	Percentage of total costs
Investment costs					
Curriculum and scripts	4.4	5.7	5.9	5.1	21.2
Radio program production	1.6	1.9	2.0	1.2	6.7
Preparation of printed materials	0.7	0.8	0.9	0.9	3.4
Start-up costs, including upfront training	8.5	6.9	6.9	7.0	29.3
Investment cost as percentage of total four-year budget	15.3	15.3	15.8	14.2	60.5
Recurrent costs					
Air time, other broadcasting	0.0	0.7	1.7	0.0	2.4
Radios (three-year life)	← Donated by a foundation →				0.0
Production of printed materials and cassettes	0.0	1.3	1.4	0.0	2.7
Distribution of materials	0.0	0.0	0.0	0.1	0.1
Training/training supplies	0.1	1.3	1.3	0.1	2.7
Continuing program development	0.0	1.2	3.1	2.4	6.7
Administrative expense	4.8	6.3	5.7	6.0	22.8
Other fixed expense	2.1	0.0	0.0	0.0	2.1
Recurrent cost as percentage of total four-year budget	6.9	10.8	13.3	8.5	39.5
Total project cost per year	22.2	26.2	29.0	22.6	100.0

Annex: Sample year long timeline for Edu Radio (1/3)

Activity	Person responsible	Target	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	Product/ Outcome
Audience and context research conducted	STTA* and ministry counterparts	Preschool teachers and students	✓												Audience and context research conducted and data aggregated
Conduct local technology scan	Local consultant with STTA	Local markets	✓												Technology scan data collected and aggregated
Design document developed	STTA with local counterparts	Program managers and staff	✓												Design document developed
Training of scriptwriters on how to write an IAI lesson (2 weeks, plus refresher after 2 months)	STTA	12 Scriptwriters	✓			✓									Scriptwriters trained
Training of technicians on how to build an IAI lesson	STTA	2 Studio technicians	✓												Technicians trained
Selection of the series title and series design (characters, scene, main objectives, template for each lesson)	Ministry validation committee and scriptwriters	Preschool teachers	✓												Title selected and production document finalized
Development of teachers guide page and script templates	Scriptwriters	Preschool teachers	✓												Layout of teacher guide finalized Template for script finalized
Creation of the introduction song for the series	Musicians	Preschool teachers and students	✓												The song is produced
Identification of actors for each series character	Scriptwriters and technicians	Actors	✓												Actors hired
Scope and sequence for 100 lessons are mapped	STTA and scriptwriters	Scriptwriters	✓												Scope and sequence finalized
Scope and sequence for 100 lessons are validated	Ministry validation committee	Preschool teachers	✓												Scope and sequence validated
Production Plan for 100 lessons prepared	STTA and scriptwriters	Scriptwriters and studio technicians	✓												Production plan finalized

Source: World Bank/EDC 2015

Activity	Person responsible	Target	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	Product/ Outcome
Technology for distribution identified and procured.	Procurement officer	Preschool teachers								✓	✓	✓	✓		Technology ready for use
Master plans drafted for each lesson (10 at a time written)	STTA and scriptwriters	Scriptwriters		✓	✓	✓	✓	✓	✓	✓	✓				Master plans completed
Scripts drafted, reviewed and timed (5/week written)	STTA and scriptwriters	Scriptwriters		✓	✓	✓	✓	✓	✓	✓	✓				Pre-test scripts completed
Recording of pre-test scripts (5/week recorded)	Studio technician in collaboration with actors and scriptwriters/ testing team	Scriptwriters and/or team responsible for testing		✓	✓	✓	✓	✓	✓	✓	✓				Pre-test programs are available for testing
Testing of pre-test programs in local school and subsequent modifications to programs and teachers guide pages integrated (10 tested/wk)	STTA, Scriptwriters and/or team responsible for testing	Scriptwriters and/or team responsible for testing			✓	✓	✓	✓	✓	✓	✓	✓			Modifications to pre-test programs and teacher guide pages made
Scriptwriters and community sensitization team trained on mobilization/sensitization	STTA, scriptwriters and training team	Scriptwriters and/or team responsible for training			✓			✓			✓				Sensitization team trained
IAI and community sensitization materials drafted and recorded and finalized	STTA, Scriptwriters and/or team responsible for training	Scriptwriters and/or team responsible for training			✓	✓									IAI community sensitization materials drafted and recorded and finalized
Studio technicians record modifications to pre-test programs in studio	Studio technician in collaboration with actors and scriptwriters/ testing team	Scriptwriters and/or team responsible for testing				✓	✓	✓	✓	✓	✓	✓			Post-test programs available

Annex: Sample year long timeline for Edu Radio (3/3)

Activity	Person responsible	Target	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	Product/ Outcome
Community sensitization process initiated	Scriptwriters and/ or team responsible for training	Community members			✓	✓	✓	✓	✓	✓	✓	✓	✓		Community sensitization process under way
Community preschool facilitators identified and community support resources mobilized	Training team	Community members/ teachers				✓	✓	✓	✓	✓	✓	✓	✓		Community facilitators identified/ resources leveraged
Final quality control to verify modifications and programs have no issues	Scriptwriters/ testing team	Preschool teachers and students				✓	✓	✓	✓	✓	✓	✓	✓		Final versions are available in digital format
Recordings are built into bundling format for phones	Studio technician/ programmer	Preschool teachers and students					✓	✓	✓	✓	✓	✓	✓		Lessons are available to load onto mobile phones
IAI teacher training materials drafted and recorded and finalized	STTA, Scriptwriters and/or team responsible for training	Scriptwriters and/or team responsible for training									✓	✓			IAI teacher training materials drafted and recorded and finalized
Teachers guide printed	Procurement officer	Preschool teachers and students											✓		Teachers guides available for distribution
Lessons and teachers guides distributed	Logistics officer	Preschool teachers and students												✓	Lessons and teachers guides distributed for use
Conduct initial IAI training with preschool teachers	STTA, Scriptwriters and/or team responsible for training	Preschool teachers												✓	Initial teacher training completed



Connect with World Bank's EdTech team



[Twitter](#)



[World Bank EdTech webpage and resources](#)



[Medium Posts](#) *(Weekly/Monthly mailers)*



[Blogs](#)



Podcast: [Apple Podcasts](#) | [Spotify](#) | [Anchor](#)



Email:

- Internal: EdTech_Core_Team@worldbank.org
- External: szacharia@worldbank.org | iciarrusta@worldbank.org



@EDTECH