

Learning at Home in Times of Crisis Using Radio

Interactive Audio Instruction
Repurposing Toolkit: Summary



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OVERVIEW

Legacy series of IAI (Interactive Audio Instruction) programming can be tremendously useful in a time of crisis. EDC is excited to provide our catalogue of IAI series for free use by the development community, under a creative commons license. The programs are already written, recorded, field tested and approved by local authorities which saves significant time and resources. In many cases, they can be rebroadcast on short notice, providing an instant school solution for any learner with access to a radio. In other circumstances some level of adaptation of the programs is advisable.

IAI programs have generally been designed for use in school settings. One challenge is to provide support to parents/caregivers/older siblings to use them in a home setting. Another challenge is that for programs to be fully effective when used in this crisis context, they need to be deployed in a carefully thought out manner with certain support systems and mechanisms in place. Writing the program scripts involved a refined set of skills and required adherence to a strict code of practice, and if they are altered for use during the COVID-19 crisis by inexperienced instructional designers without a clear understanding of the principles of IAI, they could fall well short of their potential. But this is an educational emergency and there are few, if any alternatives to quickly reach the world's most underserved learners in their homes.

This document will assist you through the adaptation process by highlighting key considerations and suggesting solutions to common challenges. Its contents will help you define the parameters you will need to work within during this adaptation. Each consideration is outlined in its own section of the toolkit, which includes information about the decisions and preparations you will likely need to make.

If you are looking for more information about the production of IAI, or its educational impact, you may also consider these reports.

- [Improving Educational Quality Through Interactive Radio Instruction](#)
- [Expanding Access to Early Childhood Development Using Interactive Audio Instruction](#)
- [Tuned In To Student Success: Assessing the Impact of Interactive Radio Instruction](#)

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I. CONSIDERING BROADCASTING CHANNELS

EDC has used numerous ways to distribute programming in different country contexts, and the distribution channel is always finalized after close consultation with the host country government. Most countries in the world have a nationwide radio network, and this is normally the simplest way to get the programs to as many households as possible. But if this approach is not viable, or it needs supplementing, there are alternatives such as:

- Community radio station broadcasting
- Audio downloading & streaming
- Podcasting
- Interactive Voice Response
- Phone to phone distribution
- Shortwave & satellite radio

Community Radio Stations (CRS)

CRS make for excellent broadcasting partners. They are often staffed by dedicated and community service-oriented employees who can also provide a number of supportive radio initiatives for the IAI broadcast, raising public awareness and sharing widely the most successful family approaches to using radio. They are also normally a trusted local media voice.

Audio Downloading & Streaming

It is a relatively simple task to create a web page for the series, with a web hosting service, government site, or through a social media outlet. Families can then download the programs and listen to them at their leisure.

Audio streaming refers to playing a file on the internet without downloading it. YouTube is a well-known example of a streaming service. The audio or video file plays in your browser, or other internet app, constantly downloading a stream of data just in time to play it for you, while also constantly deleting the data that it has just played. Streaming allows you to enjoy content that you do not have to save on your device. It also allows you to begin playing a file immediately, instead of having to wait for the entire file to be downloaded. Streaming often runs with a short buffer so the data stream is more than a few seconds ahead of playback, and this allows the file to keep playing even if there is a temporary interruption in connectivity.

Podcasting

A podcast is simply an audio file, available for download, that is generally delivered as a series. An IAI program series could be delivered as podcasts. However, by uploading the programs to a Podcast Hosting Service, you allow your listeners to subscribe to the series, which sets it apart from a manual download. This is more convenient than having to seek out and download each

new episode, as the host service RSS feed will automatically deliver the next episode to your podcasting app.

Interactive Voice Response (IVR)

IVR systems are run by telecoms to deliver audio recordings over the phone network. Users typically call a specific number, navigate through some audible menus using their phone keypad, and then listen to the program through their phone speakers. IVR systems can be setup using 3rd party software to manage call-in flows and streamline message playback. Like radio they can be setup to be free to the user when the system is structured to reverse charges from the beginning. There are several situations in which an IVR system will pose some advantages over radio. First, it can track listenership in a way that radio cannot, as it is possible to record the phone number, and any associated data collected along with it, of every single call-in listener. Second, the IVR system can customize the message for each caller. Instead of sharing a blanket broadcast indiscriminately with the entire audience, a caller can be presented with some initial menu choices and self-select to only hear a particular message – perhaps a specific grade of IAI – or even a single subject from within a grade. Finally, an IVR system can be helpful as a mechanism that delivers support materials (see Section 5) to illiterate parents.

Satellite and Shortwave Broadcasts

FM radio requires a terrestrial network of broadcast towers and repeater station to reach a wide area. The FM signal can be poor to non-existent in areas that aren't covered by this network, and while most national networks have been setup to leave as few of these shadow areas as possible they are still quite common, especially in low population areas. This problem can be fixed by broadcasting on satellite or shortwave.

Shortwave radio is broadcast on the medium to high end of the spectrum and uses a frequency which can travel over vast distances. The broadcasts are aimed at the ionosphere because radio waves of shorter length can be bounced around the earth, in a phenomenon called skip propagation. This allows shortwave to travel immense distances, and it is common to hear shortwave broadcasts coming from outside the country or even the continent you are in.

Satellite radio is the most recent type of radio broadcast, having only been created in the 1990s. It is broadcast from the ground to a satellite in Clarke belt orbit, which then bounces the signal back to earth, thereby greatly expanding its coverage area. Sometimes it is also backed up by repeater stations on the ground, especially in urban areas where buildings can block the satellite signal. It is normally a subscription-based service.

2. CURRICULUM AND CONTENT CHANGES

It is not advisable to change the content of an IAI program unless absolutely necessary. Not only is it a lot of work, it can also be disruptive to the integrity of the series. A well created set of programs has built in revision cycles and connects learning objectives across subject areas to maximize learning. Changing a specific part of the series without fully seeing how it integrates with the whole can have unintended consequences and compromise the education of the listeners.

Given that we are responding to a health and educational emergency, we must weigh the advantages of providing immediate educational services against disadvantages such as imperfect alignment with existing curricula. Also, older programs may contain outdated information and methodology or may reference a curriculum or historical policy that is no longer relevant. These aspects might be irritating, but they are likely more acceptable than the alternative, which could possibly be that learners are entirely out of school.

Means of alteration

Sometimes changing a program is necessary. There are three basic means of alteration: cuts, additions, and overdubbing. Of the three, additions are the most expensive and time consuming to do, while cuts are the least.

Cuts	Sections of programming are removed, and the episode is shortened.
Additions	New segments are written, tested, recorded, and added in to make the program longer (unless the additions are offset by cuts).
Overdubbing	Small sections of new recording are spliced into the program to replace unwanted portions.

Governments and donors will need to decide if the time and money to make these sorts of changes are absolutely necessary.

Modifications if programs are material-dependent

Interactive audio instruction programs are sometimes material dependent. While nearly all programs have an accompanying teacher guide, some may refer to that guide during the course of the program and may even depend on that guide for the teacher to know what to do. For example, the audio program may say, *Teacher, please write the vocabulary words found on page 10 in your guide on the board.* The same may be true for student workbooks. It can cause great confusion if a lesson is material-dependent and the materials are not available. This could lead the person guiding the instruction in the home to decide that it is not possible to use the programs if the materials are not present.

The first recourse is to identify a means of distributing the materials – see section 5 for more details. However, if this is not possible then strategic cuts can be made to sections of the program that are material dependent, as described above. Great care must be taken, however, that the cuts do not undermine future learning objectives which are being iteratively built towards. A third option is to identify specific programs in which the support materials are mentioned but not essential, and then to add a short disclaimer at the top of the broadcast, encouraging listeners to persevere with listening as the missing materials aren't critical.

Associated Costs

The actual costs will be determined by the extent of the changes. Programs used “as is” are the least expensive option, and the quickest. If edits are necessary, as a rule of thumb, cutting is cheapest, followed by overdubbing and then by additions, simply because each step requires more time and the help of more people.

3. CREATING NEW TYPES OF CLASSROOM

Most IAI programs are designed for use in school settings, be they formal or informal. If social distancing requirements dictate that learners remain at home, each household will need to create a space that will act as a classroom during broadcast times.

New Types of Classmate

Classmates are an essential part of the learning experience because many programs require group interaction. Learners are often put in pairs to complete a task or practice a new skill. Sometimes they are divided into groups so a competitive game can be played. The activities are always simple, as they must be clearly delivered by audio instructions alone. And they rarely require any equipment, since IAI is designed to be used easily in resource-lean settings. But one resource which is almost always assumed is that of classmates.

Social distancing expectations may prevent learners from gathering, even in small groups. Where this is not the case, households should be advised to gather learners from the surrounding homes to form small learning groups. This consolidation of students improves their learning experience and reduces the teaching burden placed on multiple parents or caregivers.

When learners are confined to their homes and cannot gather in small groups, families must get creative to find a way to provide classmates. This will likely involve other household members roleplaying as student peers to the pupil. The expectation to provide classmates must be made clear to families when the programs are first being announced and advertised. There is more on this topic covered in Section 6.

New Types of Blackboard

Many things can serve as a blackboard, especially when the class is limited to just a few learners who are sitting close enough to the roleplaying teacher that they can see easily. Most likely a regular notebook is entirely suitable to turn sideways and write on immediately in front of the learner(s). Here are some other ideas as well:

- Flipcharts stuck to the wall
- Cardboard boxes, opened and turned inside out
- Whiteboard markers used on smooth, white surfaces like tile or the side of a fridge
- Packed earth outside which can be written on (scratched) with a stick

4. CREATING NEW TEACHERS

Teacher's Role

IAI programs are produced for use by under-skilled teachers, and as such they expect very little¹ of the live teacher. The role of the live teacher is largely to guide the learner's response to the radio and provide them with feedback when they answer radio questions. Sometimes the live teacher is asked to write or draw on the board, so a basic level of literacy may be required, but no content knowledge is necessary since all instruction is driven by the radio.

Home Teachers' Skills

Therefore, during the advertising phase prior to initial broadcast, each household should be instructed to select a parent or older sibling or other older family member to roleplay as the 'home' teacher. The same individual should play this role for each broadcast, as they will grow accustomed to the role and improve their performance over time.

Before broadcasts begin, the home-teacher will need to be given a basic understanding of how IAI works and what their role is. These topics are covered in the Teacher Training section below.

¹ A beauty of IAI methodology is that there is ample room for a highly skilled teacher to use the programs without any eroding of their autonomy. Such a teacher simply reframes his/her role to focus more attention on critical skills like reinforcing and encouraging the learning, of assessing learners during instruction, and looking for ways to expand on concepts or replay favorite games post-broadcast. The programs are designed to provide planning support and pedagogical modeling, yet still leave room for the customized instruction and inspired elaboration that only a human can provide.

‘Teacher’ Training

The first step to training the roleplaying teacher is to recruit them. This is done before the program broadcasts begin, when it is first being advertised and explained to parents. As the advertising phase draws to a close, a short series of teacher training programs should be aired, along with radio announcements on the broadcast schedule.

Training Series Format

The training information should be provided over several programs, with repetition and scaffolded content built in to consolidate understanding of how the programs work and the role of the ‘teacher’. The actual radio show format should be selected according to what is most suitable for the local audience. Ideally, several show formats can be produced so as wide a selection of the national audience as possible fully understands this new educational service.

Associated Costs

The training of parents to be teachers is one of the most important steps in ensuring that IAI is successfully taken up. It should be carefully planned out and training programs produced in as professional a manner as is possible for local studios. If possible, it should be outsourced to experienced writers, who then work alongside educational advisors who understand IAI. For these reasons, this training of parents will likely be one of the most expensive parts of the adaptation process. However, it is a critical investment.

5. DISTRIBUTING SUPPORT MATERIALS

IAI series are normally written to make as few assumptions as possible about the resources available to the teacher, so most programs can work well without any support materials. However, a Teacher Guide is almost always created so teachers can read ahead and mentally prepare for the lesson. This guide should not be a requirement, but it is normally a helpful asset.

At other times, IAI series assume that students have materials themselves. It might be a poster to reference, or a student workbook to write in. Some programs, particularly if they are teaching science, expect students to have access to basic materials such as a ruler, or simple lab equipment like a magnet. If your series is reliant on any of these items, it may require some careful thought about how to get these materials to children in their homes.

It is difficult to provide concrete advice on the distribution of these materials because there are so many variables: the exact nature of the materials, their current availability in country, the restrictions on movement / interaction that are in place locally due to covid-19, etc. The best solution is to work closely with the national government or with EDC to identify the most

suitable channels given the circumstances. Barring a creative solution, it may be that cutting the programs so that they do not reference external materials is the best option.

6. BUILDING CIVIL SUPPORT THROUGH SOCIAL MESSAGING

A series of information and sensitization programs should be developed to raise awareness of the IAI resources coming online and encourage parents and community members to use them while schools are closed. This media campaign perhaps designed around the principles of Social and Behavioral Change Communication (SBCC) can have three stages.

Stage 1: Initial advertising

An obvious first step while preparing to broadcast IAI is to advertise the upcoming programs and their broadcast timetable, and to recruit households to organize home-based ‘teachers’ to facilitate the listening and learning by the students in the family. This may involve a multifaceted campaign, tailored to the characteristics of the targeted households, and employing a variety of engaging advertising formats to raise awareness.

Stage 2: ‘Teacher’ Training

Just prior to beginning broadcasting, a series of training programs should be aired to recruit and prepare family members to roleplay as teachers. Details of these messages are provided in section 4 above.

Stage 3: Ongoing SBCC Messaging

While the first two stages will stop broadcasting shortly after the IAI programming begins, Stage 3 messages can play periodically but continuously from before the first IAI program until the end of the series.

These messages should be designed as an SBCC campaign, all focused on establishing new habits of behavior among the listening population in order to take full advantage of IAI. There are many important messages that can be useful for parents and caregivers, and they must be custom-made for the cultural context of your listeners. This messaging campaign is likely only going to reach all households through radio, but other media can be utilized as well.

CONCLUSION

Having a ready-made series of IAI programming will save considerable time – it normally takes a full year to produce each grade’s worth of programming. Broadcasting them as an emergency

education solution during the COVID-19 crisis can be done quickly and cheaply, and if done properly will produce remarkably good education outcomes for learners. And using radio remains one of the only ways to reach large numbers of the most disadvantaged communities at low cost. In many countries, a large percentage of the population is out of school in normal times. This crisis presents an opportunity for those children or youth to have access to quality educational programming as well. It is important to see these programs as a potential bridge to formal schooling for that population as well as a tool that could help improve quality in formal or non-formal schools once they are no longer closed.

Merely broadcasting the series without any consideration for how it will be used is not likely to succeed. There are several important steps that must be planned and coordinated to take advantage of this solution. But some modest emergency funding and careful thought about the social factors at play, the supportive technology at hand and the creativity and flexibility of the human spirit, can help create an effective adaptation strategy. Of all the human values commonly held, the commitment of a parent to the betterment of their child's future is one of the most reliable and sustainable resources. IAI is a powerful tool in harnessing that resource to offset the tragic closing of schools during this crisis.

For more advice on how IAI can be used in your context, or for technical assistance to either adapt a current series or to create an entirely new series, please contact EDC.



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EDC 43 Foundry Avenue, Waltham, MA 02453

Phone: 617-969-7100

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