

# LESSONS FOR INTEGRATING INFORMATION COMMUNICATION TECHNOLOGY

## IN ALTERNATIVE BASIC EDUCATION PROGRAMS

The USAID Liberia Advancing Youth Project:

- Provides increased access to quality alternative basic education (ABE) classes, social and leadership development opportunities, and livelihoods skills training for out-of-school youth, ages 13 to 35, with no or marginal literacy and numeracy skills
- Supports the continued growth of economic opportunity through work-based learning with an emphasis on clubs and local alliances to support youth education and livelihood development

### INTRODUCTION

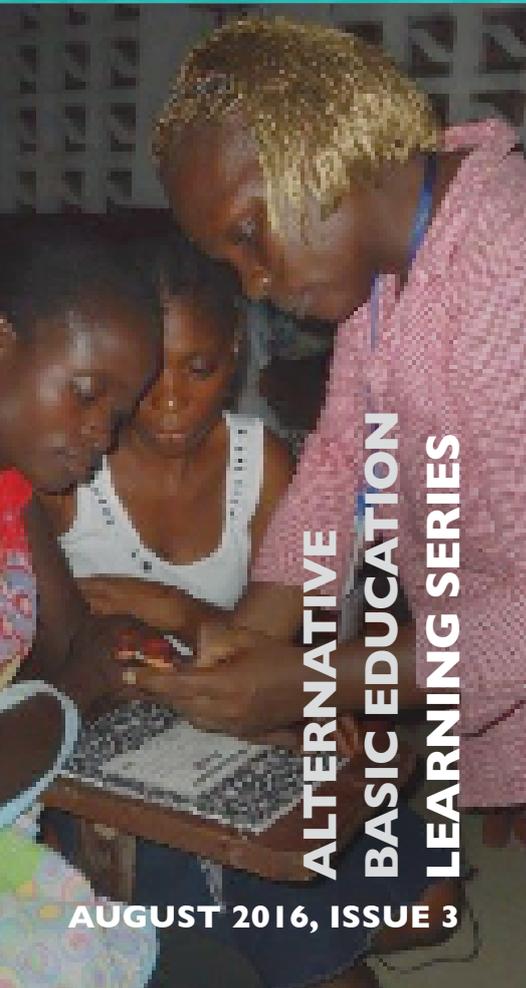
Advancing Youth used two educational technology strategies to support learning in alternative basic education (ABE) classes. **Interactive audio instruction** was included in ABE Level 1 courses (beginning level, equivalent to Liberia primary grades 1 and 2) and **mobile learning** (mLearning) was used with a sample of Level 3 learners (advanced level, equivalent to Liberia primary grades 5 and 6). These interventions (IAI and mLearning) were not used in Level 2 courses.

IAI and mLearning were both well received by learners, and facilitators indicated that there could be benefits of using information and communications technology (ICT) to support literacy learning and educational gains for youth in Liberia.

To understand more about the relative benefits of these educational technologies, Advancing Youth conducted two studies. This Learning Series reports on the results and lessons learned about ICT implementation with out-of-school youth in alternative education settings in Liberia.

### SUMMARY OF RESULTS

Both the IAI and the mLearning studies produced positive results. Learners in the IAI study significantly improved their overall scores on the literacy assessment between baseline and endline. Learners in the mLearning treatment group scored significantly better than those in the comparison group on the end-of-year English completion test, conducted after the Ebola crisis in 2014 and a year after classes had ended.



**ALTERNATIVE  
BASIC EDUCATION  
LEARNING SERIES**

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*I learned a lot of things from IAI. The IAI made me get acquainted with some strange words that I wouldn't pronounce easily. It also made teaching very easy for me for in the classroom and I admire it a lot because the learners were always willing to listen to the information from the IAI.*

*For me as a facilitator it gave me edge over the lesson because it makes presentation very easy.*

— Level I Facilitator,  
Monserrado County

## INTERACTIVE AUDIO INSTRUCTION

Interactive audio instruction (IAI) provides creative and interactive instructional approaches by audio as well as direct instruction on topics that may be difficult for facilitators. Refined over the past 20 years by EDC, IAI combines teaching and learning content with stories, songs, and other creative activities. Learners and facilitator are engaged and interact as guided by the audio program (Ho and Thukral, 2009). Advancing Youth implemented IAI with Level I learners who have minimal or no prior schooling. Liberian voice actors narrated a series of sessions aligned to the ABE Level I curriculum materials for all courses: literacy, numeracy, life skills, and work readiness. Recorded in the USAID Advancing Youth Project office, the lessons were uploaded onto SD cards and played in the classrooms via rechargeable MP3 players. A total of 96 IAI literacy lessons, each 15 to 20 minutes in length, were developed and recorded.

To determine if the use of the IAI literacy programs led to improved reading skills, a study was conducted at 20 ABE sites during the 2012-2013 academic year. The Out-of-School Literacy Assessment (OLA), which assesses phonics, word recognition, oral reading fluency, oral and silent reading comprehension, and functional real-life literacy skills, was administered at baseline and endline to three groups of learners (n=710):

- **Intervention 1 - ABE only:** A treatment group receiving the literacy instruction using ABE curricular materials delivered by a trained facilitator but no IAI (n=421);
- **Intervention 2 - ABE and IAI:** A treatment group receiving literacy instruction using ABE curricular materials delivered by a trained facilitator with an added IAI component (n=138);
- **Comparison:** Learners enrolled in a literacy program managed by another provider, using similar curriculum and pedagogical approaches, though without the IAI intervention (n=151).

The three groups were tested using the OLA tool at baseline and at endline after about 32 weeks of intervention.

### SUMMARY OF KEY FINDINGS

Analysis of the assessment results showed that the IAI intervention group (Figure 1, Intervention 2) had a significant improvement in overall scores, moving from 17.5% correct across all OLA subtests at baseline to 23% correct at the endline.<sup>1</sup> The increase in learner achievement is statistically significant at the  $p < .01$  level. These positive learning gains contributed to Advancing Youth's decision to implement IAI at all Level I ABE sites to complement existing teaching and learning activities.

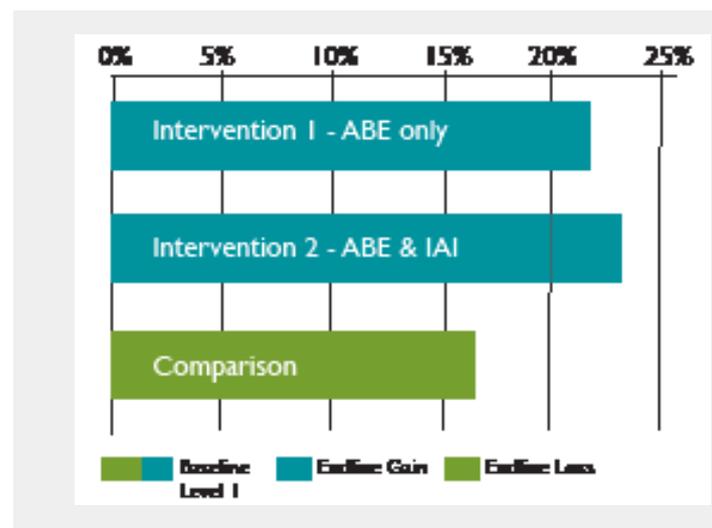


Figure 1. Overall scores on OLA, by subgroup

<sup>1</sup> Overall achievement on the majority of OLA subtests was low, reinforcing the research that indicates older learners with little or no prior schooling take longer to develop basic literacy skills (Abadzi, 1996).

## mLEARNING

mLearning allows the increasing ubiquity of mobile phones to be harnessed to support learning at times and locations that suit learners. Advancing Youth implemented mLearning in Level 3 classes with learners who were able to read text messages relatively confidently. A BYOD (Bring Your Own Device) format was utilized, with learners using their own mobile phones to receive and send Short Message Service (SMS) text messages. Learners received two text messages related to each lesson and a third text message was generated if the learners sent a reply to the question included in the previous messages. Learners were also asked to write the messages and their answers into their copybooks to practice their writing skills.



Advancing Youth conducted a study of mLearning in Level 3 English Language Arts classes at 10 ABE sites during the 2013-2014 academic year. Treatment sites received the regular ABE content with additional support through SMS messages. A comparison group of six sites followed the regular ABE curriculum with no text messages. Both groups were tested in-person using the OLA tool at the baseline. Due to the restrictions imposed by the Ebola crisis, a phone-based assessment and interview tool was developed to collect endline data remotely, which made it impossible to infer any learning gains due to mLearning.

### SUMMARY OF KEY FINDINGS

Analysis of the phone-based endline assessment (Figure 2) showed that treatment group learners (n=67) scored better than the comparison group (n=28) on the grammar subtest (statistically significant at  $p < .05$ ), which was a focus of mLearning. However, the comparison group scored statistically significantly better ( $p < .05$ ) on the oral reading subtask, so no claims can be made about the effects on overall literacy.

In addition to the phone-based assessment, learners from the treatment and comparison sites took the end-of-year completion test to assess overall attainment after the schools reopened in spring 2015. Attendance at completion testing was higher for learners from treatment schools (an average of 16.3 learners per class) than comparison schools (an average of 5.8 learners). Although there may be confounding factors affecting retention, this finding suggests that further research should be conducted to determine if there is a relationship between ICT use and retention. If there is, it would suggest that ICT could be used to help combat the high drop-out rates common in youth and adult education programs (Abadzi, 2003). Of the 57 learners who had taken the baseline, endline, and completion test, the learners from the treatment sites (n=47) scored higher on the English section of the test than those at comparison sites (n=10). Treatment site learners scored an average of 28.11 out of 50 while comparison site learners averaged 20.80 out of 50 (significant at  $p < .05$ ).

Learners and facilitators were interviewed to assess their views of the use of mobile phones to support learning. Learners were enthusiastic to learn with mobile phones, with 92% finding it very helpful or helpful to receive messages and 83% reporting that they practiced writing by writing texts into their copybooks. However, the level of technical phone literacy was much lower than anticipated by project staff, which therefore required a revision in the training protocol to include teaching learners how to receive, write, and send text messages. This also impacted the number of text messages sent by learners and facilitators (just 590 texts received), despite the establishment of a reverse charge system, which allowed learners to reply at no cost.

Although no direct inferences can be made, other mobile learning studies, such as Project ABC in Niger, have found similar results, with reports that “[s]ome of the project’s success can be attributed to the effectiveness of mobile phones as a motivational and educational tool” (UNESCO, 2012, p. 22).

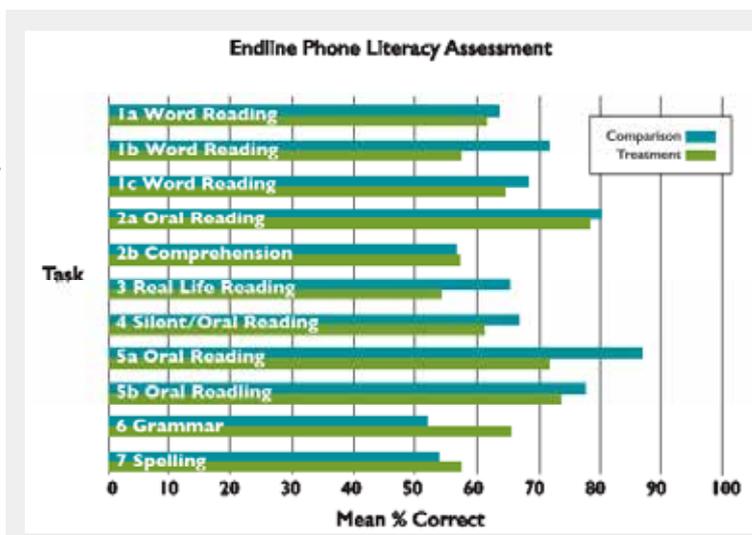
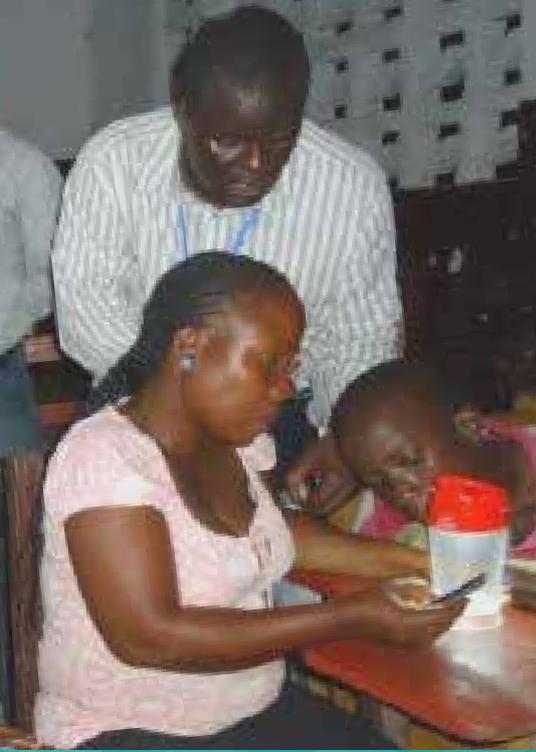


Figure 2: Summary of Performance on Literacy Subtests for Level 3 Learners: Endline Phone Literacy Assessment by subtest



[mLearning] changes their ways of understanding, lets them learn to read on their own, makes them discuss together as groups, which alleviates shyness from some of them, and it also improves their writing skills.

—Level 3 Facilitator,  
Montserrado County

## RECOMMENDATIONS

Based on Advancing Youth's experience, the following recommendations are suggested for ABE providers in Liberia seeking to integrate ICT into their programming.

- 1. Conduct assessments to understand context:** It is imperative to understand the context within which the program is operating (Wagner, Castillo, Murphy, Crofton, & Zahra, 2014). For example, the mLearning pilot study revealed that the level of technical phone literacy was much lower than originally anticipated. Using technology to address low literacy therefore becomes more challenging when low digital literacy also has to be addressed. Accurate assessment of issues related to context, such as existing skills and access to devices, is vital prior to developing ICT interventions.
- 2. Focus on the learning gains:** It is important to remember the focus of ABE programs is to improve the educational levels of learners. ICT is merely a tool to help reach this goal; it must not become the focus of the program. That is not to suggest that ICT cannot have positive benefits, but if ICT becomes the core focus, other aspects of the program will be lost.
- 3. Integrate ICT into the curriculum:** While remembering to focus on learning gains, integrating ICT into the core curriculum makes it much more effective (Naismith and Corlett, 2006). For example, sufficient time can be scheduled for the various components, such as listening to the IAI segments during the lesson or discussing the text messages. Including ICT from the start of the program provides time for training and prevents misconceptions by facilitators that this is a task that warrants additional compensation.
- 4. Provide sufficient training and support for facilitators:** The use of ICT, particularly mobile learning, is new in Liberia, and as such, many facilitators may not be confident with the technology or know how to use it to support their lessons. Providing training and ongoing support to facilitators helps them understand issues such as how to use technology to enable learning outside the classroom and, thus, frees up time for other in-class activities.
- 5. Understand and adapt for hardware constraints:** All ICT interventions require (a) the use of some type of physical hardware and (b) an accurate understanding of any hardware constraints. For example, charging IAI MP3 players can be a challenge where access to electricity is limited. Likewise, a BYOD method provides motivation and a sense of "ownership" for learners (Trinder, Roy, & Magill, 2009), but not all learners have phones. Specific protocols need to be established for dealing with hardware constraints, such as the provision of backup options (e.g., a second MP3 player), the drafting of specific training materials (such as SMS instructions for different phone models), or the creation of collaborative learning circles for learners without phones.

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