

# 1. EXECUTIVE SUMMARY

## ***Introduction***

The iREAD (Impact on Reading of E-Readers And Digital content) Ghana Study is a pilot study spanning from October 2010 to July 2011. It is categorized as a Global Development Alliance (GDA) program between the United States Agency for International Development (USAID) and Worldreader, a non-profit organization.

The pilot study aims to give Ghana public school students access to books through e-reader technology, which is an electronic device that can house thousands of books. The iREAD program aligns with USAID's Strategic Objective 8 (SO8) to "Improve the Quality of and Access to Basic Education." iREAD supports SO8 Intermediate Result 2 to "Improved Quality of Education," through the following expected results:

- Increased access to a number and variety of books and other supplementary reading materials read by the participants of the study
- Improved student performance on standardized tests of reading, writing, and English proficiency among study participants
- Reduced waiting periods in classrooms for classroom material
- Reduced net cost of production, translation, and distribution of supplemental reading material

ILC Africa, an Africa-based private local organization, serves as the Monitoring and Evaluation (M&E) advisory team within the larger iREAD Ghana Study. Throughout the duration of the project, the ILC Africa M&E team collected monitoring data to provide USAID with monthly reports. ILC Africa was also contracted to carry out the baseline, mid-term, final, and administrative close-out reports.

This final report serves as the official, summative assessment of the e-reader within the pilot study, factoring both anticipated and unanticipated effects. A fourth report, summarizing ILC Africa's administrative and financial activities across the project will be submitted in November 2011.

## ***Methodology***

The iREAD team established the following three experimental groups:

- 1) No E-reader Group (NE): no access to e-reader devices
- 2) E-Reader Group (E): access to e-reader devices
- 3) E-Reader + Out-of-Classroom Exploration Group (E+OCE): access to e-reader devices with mentoring and extracurricular support

With the assistance of the Ghana Education Service, Worldreader selected a purposive sample of 481 students in nine project-affected schools from the communities of Suhum District, Kade, and Adeiso. This sample size was determined using a confidence level of 95% and a confidence

interval or margin of error of +/- 4 for an estimated population of 10,700,000 Ghanaian children below 18 years of age.<sup>1</sup>

### ***Hypotheses***

There were several major hypotheses about the outcomes of the pilot study. It was proposed that by the end of the study, the (NE) group would have the least access to reading materials, the least interest in reading, and the least improvement in standardized reading scores as compared to the (E) and the (E+OCE) groups. Also, it was proposed that the (E+OCE) groups would surpass the (E) groups in these measures due to the assumed benefits of mentoring and Out-of-Classroom Exploration activities. Finally, it was proposed that in the long run, the e-reader would serve as a more efficient and economical delivery mechanism for books than the traditional paper book system.

### ***Findings***

Overall, the majority of students and teachers from the iREAD Ghana Pilot Study had positive experiences with the e-reader. Feedback from the mid-term and final evaluation support the general sense that the e-reader has a role in the future of the Ghanaian public school curriculum.

iREAD Ghana Pilot Study findings identified effects related to the use of the e-reader, both positive and negative.

Positive effects included:

- Increased access to books
- Increased enthusiasm towards reading
- Increased resources for teachers
- Increased technological skills
- Increased performance on standardized scores at the primary level, especially among primary students receiving OCE interventions

Data from the pilot study reveal that there are short-term, medium-term, and long-term benefits to incorporating e-readers into the Ghanaian public school system.

There were also many challenges to the management of e-readers within the pilot study. These experiences can serve as lessons learned for future project implementation. The study identified breakage as the greatest project concern, as almost half of e-readers experienced some breakage. In terms of the study's limitations, major limitations were that the sample of students was not geographically representative and that time exposure to the tool was greatly reduced due to challenges, i.e., delayed project start date, device breakages, and teacher strikes.

Unanticipated effects of the e-reader were both positive and negative, as follows:

Positive:

- +Students shared the benefits of the e-reader with family and friends
- +Students and teachers learned to navigate e-reader technology very quickly
- +E-reader loss and theft were dramatically lower than anticipated
- +E-readers increased exposure of Ghanaian authors

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<sup>1</sup> [http://www.unicef.org/infobycountry/ghana\\_statistics.html](http://www.unicef.org/infobycountry/ghana_statistics.html)

Negative:

- E-reader breakages were much higher than anticipated
- Certain e-reader functions caused frustration such as accidental book deletion, and improper use of music and internet during class time.

Negative unanticipated results are currently being addressed by Worldreader in close collaboration with Amazon, the leading e-reader manufacturer.

At this time, the primary factor limiting the e-reader's sustainability is the high device breakage rate. However, should technical improvements to the device reduce the breakage rate to minimal levels, and should the cost of the device continue to fall, the e-reader would be an efficient, cost effective method to distribute textbooks and educational material.

### ***Conclusions***

Data from the pilot study reveal that there are short-term, medium-term, and long-term benefits to incorporating e-readers into the Ghanaian public school system.

Primary among the short-term benefits is that students have immediate and reliable access to books for academic and personal use, without having to depend on the traditional paper book system that is currently practiced. In the medium-term, student and teachers have access to reading materials and teaching resources that facilitate and significantly accelerate the learning process, since students are able to have direct access to information in a home setting. This gives students and teachers the opportunity to extend learning beyond the allotted class time. Unlike the current scenario where students take books home, the e-reader provides the opportunity for extended reading and homework assignments beyond class time. In the long-term, final evaluation data strongly suggest that when the device is introduced and managed properly among primary level students, it has the potential to improve reading performance, and more importantly increase enthusiasm for reading as a lifetime habit. Therefore, the e-reader has impact along a continuum of short- to long-term effects.

### ***Recommendations***

In the spirit of creating recommendations that are directly relevant, manageable, and doable, the evaluation team proposes three categories of recommendations:

1. Methodological/Study Design Recommendations
2. Programmatic Recommendations
3. Technological Recommendations

If and when considering follow-on projects, the evaluation team advises that implementers learn lessons from the pilot study and make the following adjustments:

#### *Methodological/Study Design Recommendations*

- Use a genuine random sample for the purposes of drawing conclusions on Ghanaian public schools
- Limit influences and exposure within the control group
- Modify student weekly logs

#### *Programmatic Recommendations*

- Focus on primary schools and OCE activities to maximize benefits
- Pilot Potential Funding Mechanisms to Explore Sustainability

- Integrate e-readers more fully into the entire curriculum
- Reduce logistical challenges for iREAD 2011-2012
- Expand iREAD Activities to Underserved Areas
- Continue to build the capacity of teachers so that the tool is used to its maximum potential
- Introduce E-Readers to Teacher Training Colleges and Teachers' Unions

*Technological Recommendations*

- Reduce the number of e-reader breakages
- Develop an improved e-reader management system

Although Worldreader has started to address many of the above recommendations, these recommendations could greatly strengthen the program when fully achieved.