

PROJECT IREAD: IMPACT ON READING OF E-READERS AND DIGITAL CONTENT

October 2010



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I. Executive Summary

[Worldreader](http://www.worldreader.org) (www.worldreader.org) is a non-profit organization whose mission is to make books available to all people in developing countries using e-reader technology.

Specifically, beginning in November 2010, 337 students in two Primary Schools, two Junior High Schools and two Senior High Schools in the Eastern Region of Ghana will receive e-readers loaded with a mix of free (out-of-copyright) books, local textbooks, local storybooks and international books, with the choice to search for and download additional content. Worldreader will evaluate the impact of these e-readers along two primary dimensions throughout the school year: do the students with the e-readers read more than the control groups, and does their reading performance increase relative to that of the control group?

Improved literacy leads to economic growth

Education and literacy are critical drivers of economic growth (OECD International Adult Literacy Survey 1994-98). Yet in much of the world, children have access to a small or negligible range of reading material. Distribution issues, logistical problems and payment difficulties all conspire to restrain the availability of books and written material in the developing world.

Emerging technology provides the solution

The technology of e-readers solves these problems. E-readers use the mobile-phone GSM network to provide near *instantaneous access* to hundreds of thousands of books, newspapers and magazines *anywhere in the world*. E-readers are lightweight, durable and use long-lasting batteries that charge rapidly.

E-reader cost is declining rapidly

The cost of e-readers will continue to decline and they will soon be as affordable as mobile phones. Based on benchmarking against historical prices of similar electronic components, the price point for such a device could be under US\$100 within 18 months and under US\$50 within three to four years. Worldreader will use the results of this pilot study to specify requirements and push for the development of an affordable, rugged e-reader that is designed for use in educational settings within developing countries.

The concept has been proven

With a trial conducted in Ayenyah, Ghana, in March 2010, Worldreader demonstrated that:

- E-readers can be used effectively in classrooms in developing countries.
- E-readers are easy for children in developing countries to learn and use (“as easy as using a cell phone”).
- Children read more using the e-reader than before.
- Teachers welcome the use of the e-reader in the classroom.

Next step is to conduct an in-depth study

The Ghana Ministry of Education has invited Worldreader to run an in-depth pilot on the use of e-readers in Ghana secondary schools during the 2010-2011 school year. The study, called project iREAD (Impact on Reading with E-readers And Digital content), will evaluate the impact of e-readers in the classroom and on the students' reading habits and abilities; explore the costs and potential savings involved; and assess the value of moving forward with a randomized clinical trial and scaling up to the widespread adoption of e-reader technology in Ghanaian schools.

Significantly this will be the first such extensive test of the use of e-readers in the classroom in the developing world run under controlled conditions.

Our prediction is that this pilot study will show that use of e-readers in the classroom will:

1. increase reading among students
2. improve student performance in reading, writing and English proficiency
3. reduce the overall cost of suitable reading material
4. increase the availability of educational content in classrooms

Providing access to a wide variety of suitable content

Our main objective is to make a wide variety of content available so that students can find material that is a) at their reading level, b) interesting and c) educational. Books will be chosen in conjunction with Ghana Education Services, teachers, local and international publishers. We strive to put an emphasis on local content.

Strong team and partners

The Worldreader team contributes expertise that is both significant and relevant. David Risher has a background in technology and business, having contributed to driving the early development of companies such as Microsoft and Amazon.com. Colin McElwee brings 20 years of experience in education and international market development. Mike Sundermeyer spent his career in product development at Sun Microsystems, Adobe and Macromedia, and is an expert in research design and implementation. Zev Lowe is a researcher and ethnographer who contributes his experience in educational technology, social entrepreneurship and international development. Elizabeth Wood contributes significant experience in publishing from her multinational career in journalism and communication. Susan Moody has worked in senior marketing roles in technology companies and will ensure the world hears about the success in Ghana, while Barbara Hummel, with her expertise in development, will ensure that funds are available for future roll-outs. Joseph Botwey oversees the daily operations of iREAD on the ground, bringing in considerable knowledge and experience working in Ghana.

We have a strong network of partner organizations locally and internationally, including USAID, Amazon.com, Random House books and ESADE Business School among others. Ecoband Networks and OrphanAid Africa in Accra provide on the ground expertise and support in Ghana. The Ghana Ministry of Education has appointed Dr. Nana Banchie Darkwah as Special Advisor to support Worldreader. The strength of our team and our partners ensures a professional and successful implementation of the iREAD pilot study.

Using a rigorous research approach

The iREAD pilot study will involve 481 students across nine schools, within which 337 students in six schools will receive e-readers while the 144 students in the three remaining schools will serve as a control group. The study will collect data to measure changes in reading habits. All groups will also be tested for reading level using standardized tests before, halfway through and after the pilot study. An independent firm based in Accra called ILC Africa will carry out the monitoring and evaluation activities.

Creating best practice

By creating a best practice for the use of e-readers in an educational setting in Ghana, we lay the groundwork for a randomized clinical trial in 2012, in which we can collect statistically significant data on the most efficient way not only to get books to students but to make sure those books are actively used as sources of knowledge and learning.

Why now?

We believe we are at an important moment in the history of the African continent. There is a convergence of factors that indicates that now is the time to act.

1. 3G coverage in Sub Saharan Africa is now at 51% average penetration and increasing.
2. E-readers (that rely on 3G connectivity) are beginning to gain traction in developed world markets and their prices are falling dramatically (the Kindle has dropped in price from \$400 to \$190 in the last 24 months).
3. There are nearly two million books available for free in digital format and many more available at a very low cost.

Given these facts, we believe that e-readers and digital content have the capability to open up the horizon of available knowledge and give students a chance to learn independently, making an invaluable impact on the lives of these young people.

II. Project iREAD Overview

The Ghana Ministry of Education and Worldreader are partnering to run an in-depth pilot study (called **iREAD**) on the use of e-readers in Ghana primary and secondary schools during the 2010-2011 school year. The goal of this pilot is to evaluate how increased access and choice of reading material affects students' reading habits and abilities and to assess the impact of e-readers in reducing the cost of producing and distributing reading material.

Worldreader is a not-for-profit organization that aims to make books available to all people in developing countries, via e-reader technology. Worldreader's March 2010 trial in a primary school in Ayenyah, Ghana (the Worldreader E-Reader Trial Ayenyah or **WETA** study), suggested that e-readers can successfully be utilized in classrooms, and appear to increase students' interest in reading. In partnership with the Ghana Ministry of Education, Worldreader is initiating a pilot study (**iREAD**) in Primary Schools (PS), Junior High Schools (JHS) and Senior High Schools (SHS) to further validate and expand upon these findings.

An e-reader, like the Kindle shown on the right, is a relatively inexpensive device that can download and store over 2,000 books, magazines, newspapers and other written materials, from an online store containing nearly 800,000 titles. In addition, nearly two million out-of-copyright books are available for download at no charge. A full-length book can be downloaded wirelessly in seconds using mobile phone networks, and the battery lasts at least two weeks of normal use on a 90-minute charge. Many e-readers also have a dictionary to assist with spelling and learning new words. This is helpful to new readers as well as those learning a new language.



In March 2010, Worldreader conducted the exploratory WETA trial at the OrphanAid Africa primary school in Ayenyah, Ghana. Many insights were gained, particularly in terms of infrastructure and training needs, preparation and logistics, and basic feasibility of the use of e-readers in the classroom. There were positive indications that students read more when they had access to a greater variety of material, and that e-readers worked well in the classroom and had the potential to facilitate learning. Most importantly, teachers welcomed e-readers into the classroom, as their

use required little training and teachers perceived them as a complementary tool to their own preparation to teach.

III. Goals and Objectives

The objective of the iREAD pilot study is to introduce a wide variety of reading material, using e-readers, in Primary School (PS), Junior High School (JHS) and Senior High School (SHS) classrooms. This study will evaluate the impact of e-readers on the classroom and on the students' reading habits and abilities; explore the costs and potential savings involved; and assess the value of moving forward with randomized clinical trials and eventually more widespread adoption of the technology in schools in Ghana as well as the rest of the developing world.



The iREAD pilot study will measure:

- The change in a student's reading habits throughout a school year compared to that of control groups.
- The change in a student's reading abilities throughout a school year compared to that of control groups.
- The cost differential of supplying and utilizing reading materials with e-books relative to paper books in an educational setting.

Additionally, the pilot study will collect qualitative data that explores larger questions, including how access to reading material relates to literacy, as well as specification data regarding future versions of e-readers to be designed and manufactured for the developing world. The study will also identify challenges and barriers to adoption of the e-reader technology tested. These include physical, technical, procedural and social issues.

Hypothesis

Our primary research question is: What is the impact of increased access to and choice of books on reading habits and reading performance? To that end, the iREAD pilot will test the hypothesis that introducing e-readers into primary and secondary schools in Ghana will:

- Increase the number and variety of books and other supplementary reading materials read by the participants of the study.
- Improve student performance on standardized tests of reading, writing, and English proficiency.
- Reduce the net cost (per book read) of production, translation and distribution of supplemental reading material.
- Increase the availability of educational content in classrooms.

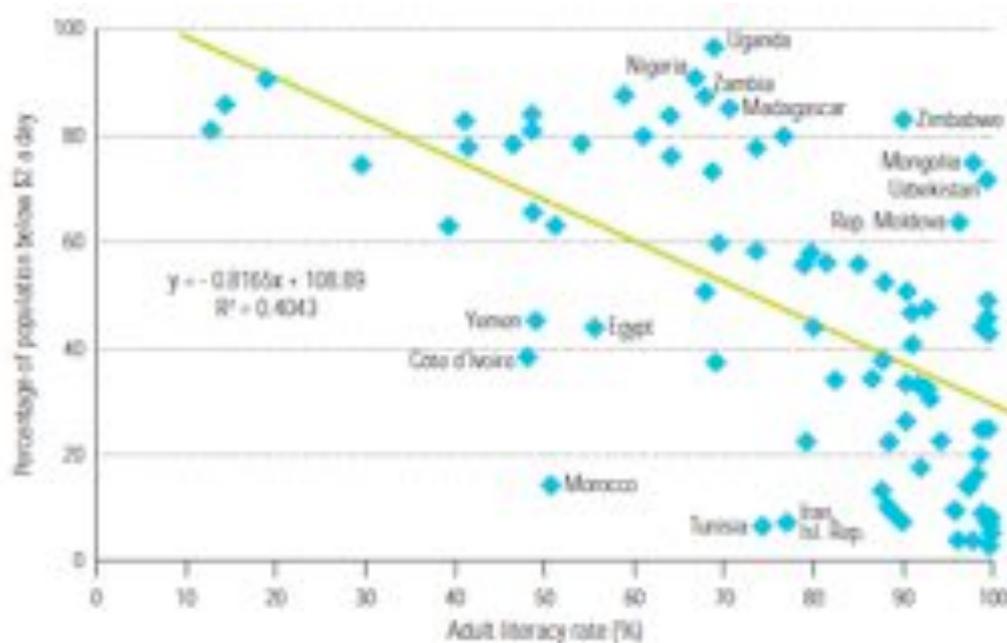
IV. Problem Statement

Ghana is a West African country of approximately 24 million people. Nearly 66% of adults over the age of 15 are considered literate (UNESCO 2008), although the percentages differ by gender. Two thirds of the male population is literate, whereas just under 60% of the female population can be considered so.

The educational system in Ghana is largely centralized. The Ministry of Education is responsible for the syllabus, which is updated over time. These updates result in new textbooks, materials and syllabi. The last major update was in 2007.

Low literacy and poverty

It is widely understood that increased education levels are positively correlated with the standard of living and the general well-being of society, and that literacy is the foundation on which a solid education is built. There is a strong correlation between low literacy rates and high poverty rates in developing countries, as shown by the following figure:



Sources: Statistical annex, Table 2A, and World Bank Development Indicators Database (<http://www1.worldbank.org/prem/poverty/data/>, accessed April 2005).

Figure 1. Literacy Rate and Poverty

Lack of books = low literacy levels

Worldreader seeks to help break the poverty trap in developing countries by using new technology to provide much greater access to books, increasing literacy levels and enriching lives. Studies in the United States have shown a clear correlation between a child's reading level and the number of books in their home.

Currently, books are expensive to publish, translate, print, and distribute, and consequently, many school children in developing countries lack access to the breadth of material available to those in developed countries. Worldreader and the Ministry of Education in Ghana share the belief that e-readers and digital books have the potential to lower these costs and increase access to and the breadth of reading materials available to school children in Ghanaian public schools.

V. Research Methodology

Why E-readers?

The financial and logistical advantages over paper books mentioned above can be realized with e-books, independently of the device on which they are accessed (i.e. e-books can be read not only on e-readers, but also on some mobile phones, laptops, iPads, etc). However, for in-class use, we have found that educators prefer a single function device, as it is less distracting for the students.

E-readers can hold over 3,000 books but cannot be used to chat or text message. Furthermore, e-readers are low-power devices with a single charge able to last for approximately four weeks of normal use. This is ideal in environments where access to electricity is intermittent. Finally, e-readers generally do not have backlit screens and use electronic ink technology, which means they cause less eye fatigue and are readable in bright sunlight.

Comparison of E-Readers, Tablets and Computers for Reading

The following table compares the three types of devices for classroom usage using data available at the time of writing. For comparison purposes, only one device per category is compared.

Characteristic	E-reader (Kindle)	Tablet (iPad)	Computer (Acer)
Price of Device	\$189	\$600 +30/month	\$400
Price of Books	Free-\$12	Free-\$12	Free-\$12
Availability of Books	500k+	500k+	500k+
Simple to learn/use	Yes	Yes	No
Inexpensive/easy to administer	Yes	Yes	No
Rugged enough for school use	Partially	No	No
Low power consumption	Yes	No	No
Low eye strain / Low glare	Yes	No	No
Hold in one hand like a book	Yes	Yes	No
Download books using GSM (mobile phone) network	Yes	Yes	No
Likely to get significantly cheaper	Yes	No	No
Distracting in classroom	No	Yes	Yes
Effective for textbooks	No*	Yes/TBD	Yes
Can browse the internet	No	Yes	Yes
Can write papers, do email	No	Yes	Yes
Runs other educational applications	No	Yes	Yes

Key: Best for classroom reading

Best for other educational purposes

*Future devices are expected to have improved capability for textbooks

Device Agnosticism

We remain firmly noncommittal regarding any particular manufacturer or ecosystem of e-readers. As part of the iREAD pilot study, we will engage product design experts to evaluate the needs of the teachers and students. This will lead to the development of an e-reader that is affordable by developing world standards, power efficient, and that connects using mobile technology. For the purposes of the pilot study, we will use the Amazon.com Kindle for several reasons. Most importantly, the Amazon Kindle has mobile coverage in Ghana, which will make it possible for teachers and students to search for and download books of their choice at any time. Secondly, between free books and paid content from the Amazon store, the Kindle currently has more titles available to it than any other e-reader in the market. In addition, Amazon is very interested in our work and has in the past generously donated

Kindles to our projects.

Content

Our main objective is to make a wide variety of content available so that kids can find material that is a) at their reading level, b) interesting and c) educational. Textbooks will be chosen in conjunction with Ghana Education Service, local publishers, teachers and other representatives. We will strive to put an emphasis on local content.

Worldreader has forged relationships with EPP Book Services, Woeli Publishing, Sam-Woode Limited and Afram Publications among others, and continues to actively pursue new partnerships. Children will initially receive up to 30 books (a mix of textbooks and storybooks) at the start of the pilot study. Their access to books will increase dramatically from that point on, as Worldreader will provision content to them on a weekly basis. In addition, they will be free to search for and download reading materials of their choice from a universe of millions of available books. The children will carry a library of books in the palms of their hands.

Textbooks that have complicated layouts and are heavy on images are not currently cost-effective to digitize. At this time, Worldreader will only digitize textbooks from selected subjects that are most relevant to reading comprehension, e.g. English and Social Studies. Worldreader will provide training to the teachers involved in teaching the supported subjects on how to use the e-reader effectively in their classrooms. Where possible, teachers will also have access to the teacher's guides accompanying the textbooks. Through local publishing partners, Worldreader has also obtained access to Integrated Science textbooks, which will be made available in digital format. However, since Integrated Science is not a reading-intensive class, Worldreader will not provide the same level of support to those teachers.

School Selection

Worldreader chose schools with the assistance of Ghana Education Service (GES). Unlike most organizations that had worked with GES in the past, we were determined not to gravitate towards flagship schools in Accra. Quite the opposite, we sought out schools that were outside the capital, and that would be as representative as possible of the “average” Ghanaian school to prepare for eventual large-scale rollout.

Along with GES, Worldreader developed the following selection criteria for schools:

- Average schools (not flagship schools and not in Accra)
- Good gender balance (about 50/50, or more girls than boys)
- Adequate infrastructure – electricity and mobile network (GSM) access
- Teachers and administrators who were interested and motivated to participate

i-READ schools

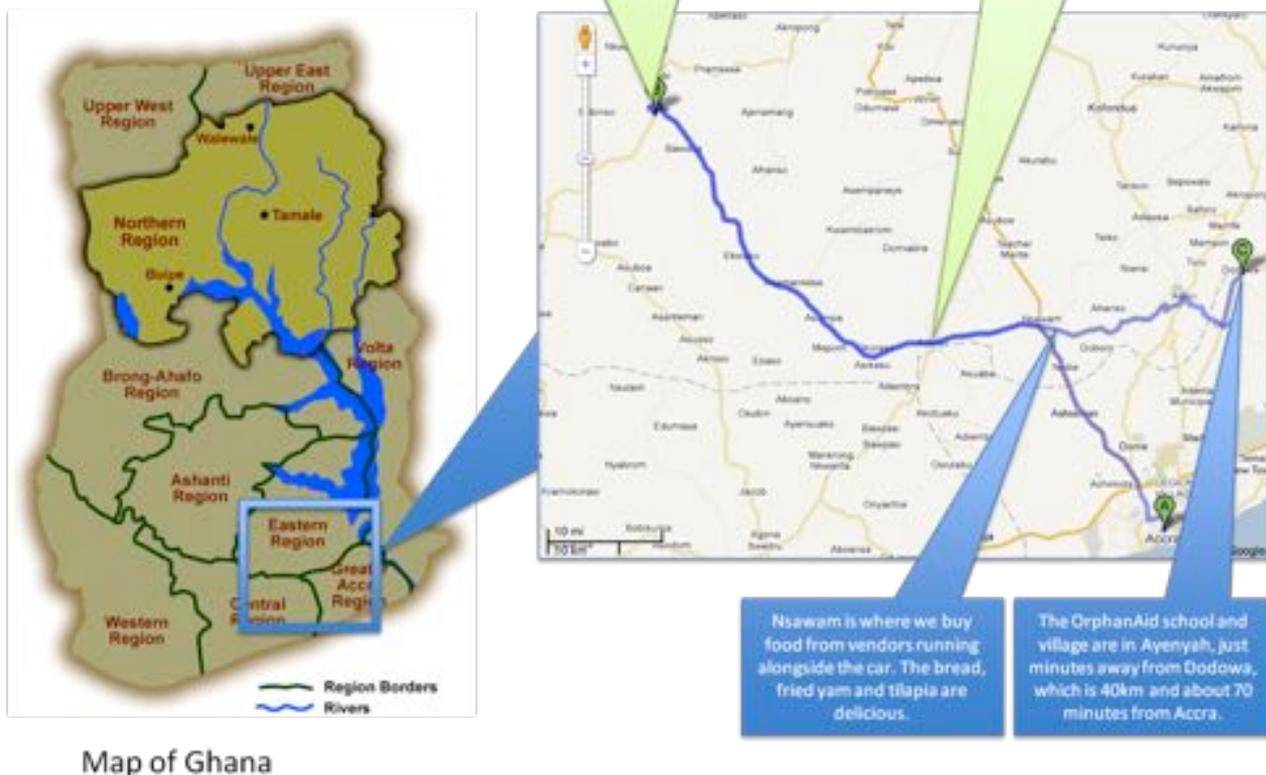


Figure 2. School Selection and Locations

Research Design

In total, there will be approximately 481 students across nine schools involved in this pilot study. 337 of them (Groups E and E+OCE) will be given the use of e-readers, and 144 of them (Group NE) will not.

	Primary School (P)	Junior High School (JHS)	Senior High School (SHS)	Total
No E-Reader Group (NE) <i>No access to e-readers</i>	47	39	58	144
E-Reader Group (E) <i>Access to e-readers</i>	42	45	70	157
E-Reader Group, Out of Classroom Exploration (E+OCE) <i>Access to e-readers and extra-curricular activities</i>	45	75	60	180
Total	134	159	188	481

Listing of Schools

P - NE	Teacher Mante Primary
P - E	Presbyterian Primary in Kade
P - E+OCE	Presbyterian Primary in Adeiso
JHS - NE	Teacher Mante JHS
JHS - E	Presbyterian JHS in Kade
JHS - E+OCE	Presbyterian JHS in Adeiso

SHS - NE	Suhum SHS
SHS - E	Kade Secondary Technical School
SHS - E+OCE	Presbyterian SHS in Adeiso

The three different groups are:

- No E-Reader (NE) – these students will not receive any e-readers. They will simply be tested on their reading proficiency and evaluated on their reading habits prior to the start of the pilot study, at the midpoint and at the conclusion of the pilot study.
- E-Reader (E) – each of these students will receive an e-reader, preloaded with textbooks and storybooks. They will receive technical training on how to read on the device, as well as how to download more e-books. The teachers in classes for which digitized textbooks are available will receive similar technical training on how to use the e-reader. Teachers will also be provided with guidance on how to incorporate the e-reader into classroom learning.
- E-Reader and Out-of-Classroom Exploration (E+OCE) – these students and teachers will receive the same intervention as the (E) group, with the addition of guided out-of-classroom activities run by volunteers. One such activity may teach students to read a story of their choice aloud to one person in their family or community who cannot read. This group will also serve as a “sandbox” (experimental space) in which the Worldreader team can try implementing new ideas that may come up during the course of the pilot study. Having a separate treatment group for exploration and experimentation allows this research study to be agile and respond quickly and flexibly to new developments without sacrificing academic rigor and validity.

The students involved in the iREAD pilot study will be from Primary 4, JHS 1 and SHS 1. Students at the Primary 4 level were chosen because the new National Reading and Literacy Acceleration Program (NALAP) introduces children to reading and writing using their native languages during the first three years of primary education. Therefore, Primary 4 represents the earliest possible point at which English-language books are used in the classroom.

For the Junior and Senior High Schools, first-year students were chosen to allow us to have continuous impact throughout the students’ academic career and to monitor the longer-term impact of the pilot study. Additionally, our first trial in Barcelona showed that senior-year students sitting for important exams are likely to experience more stress, and have less time and interest in tackling the learning curve required when adopting new technology. Starting with first-year students also means that we will be able to start digitizing grade-appropriate learning materials from the beginning and progressively build a library of content that would eventually cover all grade levels.

Monitoring and Evaluation

In order to gauge reading performance, students will be tested before and after the pilot study. These instruments will be chosen by Monitoring and Evaluation specialists, ILC Africa, and will be comprehensive and comparable.

To measure indicators corresponding to reading habits, the Worldreader Ghana Operations Manager will collect qualitative data that focuses on determining how increased access to and choice of reading material affects the students’ interest in reading. To that end, the Operations Manager will conduct periodic structured and unstructured conversations with teachers and students to determine the number of hours a week spent reading, obstacles to reading more, and the advantages and challenges of using an e-reader.

VI. Expected Impact

We expect there to be three main ways in which our pilot study can contribute towards the future of education and reading in Ghana.

1. Pedagogical Impact

During our overview of the Junior High and Senior High schools in the Eastern Region, we found that students had little to no access to books. The libraries in the schools we visited were often locked, even within school hours. The teachers had a copy of a text, from which they would summarize lessons onto the blackboard. The students would copy from the blackboard, and then answer questions by writing in exercise books (notebooks). At the end of each day, they would turn these exercise books in to be graded. Only rarely did the students have the opportunity to engage directly with the text.

In conversations with our Ministry of Education Liaison, Dr. Nana Banchie Darkwah, we learned that a student's learning is strictly perceived as the responsibility of the teacher. If a student fails, it is because the teacher has not taught well. In other words, students have no opportunity to learn independently. They do not receive knowledge save what is spoon-fed to them, and they are not exposed to additional viewpoints or approaches.

While our research study includes rigorous testing for measurable changes in reading habits and reading ability, we believe that opening up the horizon of available knowledge and giving students a chance to learn independently will have incalculable impact on the lives of these young people.

2. Product Development

Our vision is to make getting a book as easy as making a phone call. We foresee e-readers becoming as affordable as mobile phones – not “throw away” cheap, but still attainable to most. Using the results of this pilot study, we will specify requirements for and push for the development of an affordable, rugged e-reader that is designed for use in educational settings within developing countries. Based on benchmarking against historical prices of similar electronic components, the price point for such a device could be under US\$100 within three years and under US\$50 within four to five years.

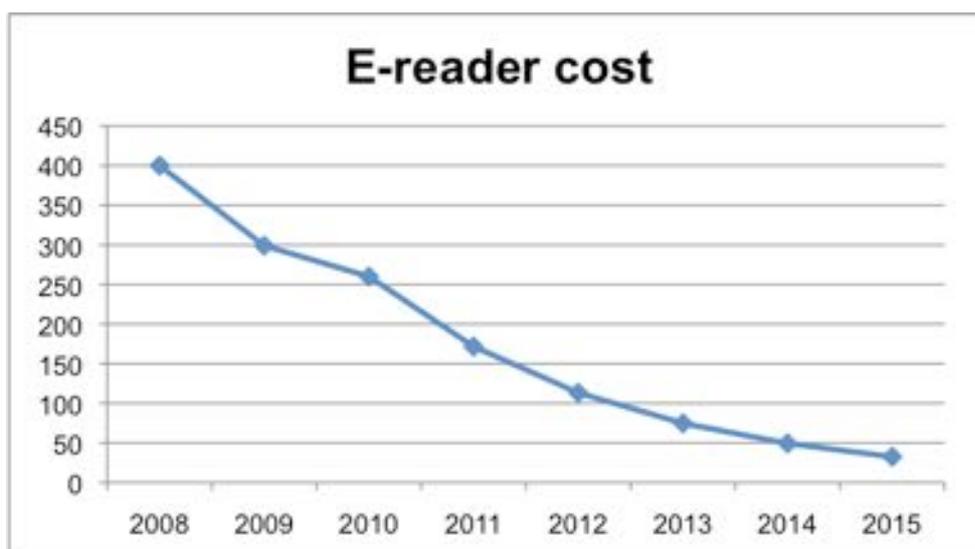


Figure 3. Projected E-Reader Cost (figures on y-axis in USD)

3. Groundwork for a Randomized Clinical Trial

This pilot study aims to provide insight into not only how access to books affects the learning process, but also what is required in order to implement a system in which books are available to students in a practical way, isolating as much as possible from logistical issues and cultural barriers to adoption. By

creating a best practice for the use of e-readers in an educational setting in Ghana, we lay the groundwork for a randomized clinical trial in 2011/2012, in which we can collect statistically significant data on the most efficient way not only to get books to students but to make sure those books get used as sources of knowledge and learning.

VII. Sustainability Plan

Our sustainability plan focuses on both immediate benefits and widespread rollout and adoption.

Immediate Post-study Benefits for Participating Schools

Following our yearlong research, participating schools will transition from a single-user e-reader model to a library model given that they complete the study successfully (i.e. with broken and missing e-readers below a certain threshold). This approach has shown itself to be successful at Ayenyah, where after the conclusion of the trial, several e-readers were left behind in the library under the care of the Community Center Manager. Throughout the year, the librarians will receive training along with the participating teachers and will be involved in devising a system for checking out the e-readers.

Rolling out sustainably

With cheaper and more rugged e-readers available to students in schools across Ghana, we will develop a payment system using scratch-off cards, similar to prepaid mobile phones. For as long as the e-readers themselves are too expensive, we will work with sponsors and funders to subsidize them. With the negligible cost of producing and distributing every book, our conversations with local publishers lead us to believe that we could negotiate highly preferential pricing for e-books, which would be low enough to make books available to most, even if a small premium is added to the price of each book to cover costs.

The key to making this work will be scale. We envision an entire ecosystem around e-readers in Ghana. With e-reader in the hands of every child, students will get to learn independently; parents will be able to buy books for their children to read at an affordable cost; local writers and publishers will have worldwide reach; Ghana Education Services will be able to distribute a year's worth of books to all the students in the nation with a touch of a button and small local businesses that sell cases and handle minor repairs will spring up and flourish.

VIII. Worldreader Team and Partners

Our team at the Worldreader is formed from a small and focused group of individuals with significant experience in education, technology and social development (resumes in Annex). This experience has been honed by the organizational learning derived from two logistical trials of e-readers in the classroom; in Barcelona in January 2010 and in Ayenyah (near Dodowa) in Ghana in March 2010. A comprehensive summary of learnings from the Ghana trials can be found in the E-reader Trial Report (see Annex). We are committed to continuing to develop organizational expertise as well as expand our network and reach through strategic partnerships.

Worldreader	Position
David Risher	Co-founder
Colin McElwee	Co-founder
Zev Lowe	Director of Research and Pilot Operations
Susan Moody	Director of Communications
Elizabeth Wood	Director of Digital Publishing
Barbara Hummel	Director of Development

Joseph Botwey	Ghana Operations Manager
Mike Sundemeyer	Director of WETA (Worldreader E-Reader Trial Ayenyah)
Partners	Contributions
Amazon.com (Seattle, WA)	<ul style="list-style-type: none"> - 30 Kindle e-readers - Turn on of 3G e-reader connectivity in Ghana - On-going technical assistance - Potential best-test products and special support for trials - Discount of bulk order of Kindles estimated at 15%
USAID	<ul style="list-style-type: none"> - Financial support, including covering cost of M&E - On-the-ground logistical support, e.g. importation of devices
ILC Africa	Monitoring and Evaluation activity for iREAD
Random House, Inc. (New York, NY)	100 classic children's books and entire Magic Tree House series (donation)
Gomez-Acebo LLP (Barcelona, Spain)	<i>Pro bono</i> legal support for establishment of Spanish Fundación
Brighton-Jones LLP (Seattle, WA)	<i>Pro bono</i> legal and accounting support for establishment of US 501(c)(3)
ESADE Business School (Barcelona, Spain)	<ul style="list-style-type: none"> - Worldreader Foundation board member: Dr. Jonathan Wareham, Vice Dean of Research - Access to cutting-edge and relevant knowledge and expertise - On-going flow of talent (MBA, PhD students) - Access to corporate partners
i-nique (UK)	"Tuff-Luv" ruggedized e-reader cases for WETA (donation)
M-Edge (Odenton, MD)	Ruggedized e-reader cases and battery-operated reading lights (donation); potential for future cases at reduced cost
Rassak Experience (San Francisco, CA)	<i>Pro bono</i> and reduced cost website design and management
Ecoband Networks (Accra, Ghana)	Service provider of fast internet connection for iREAD setup and operational support in Accra
OrphanAid Africa (Accra, Ghana)	On-going support within Ghana, including introduction to government officials, hiring help and fundraising introductions
Ghana Education Service (Accra, Ghana)	<ul style="list-style-type: none"> - Support and input from Sara Agyeman-Duah, Director of Curriculum Research and Development Division - Authority over/access to schools, District Directors and educational publishers
Woeli Publishing (Ghanaian publisher)	Digital content for iREAD
Sam-Woode Limited (Ghanaian publisher)	Digital content for iREAD
EPP Book Services (Ghanian publisher)	Access to content (local textbooks and storybooks) for iREAD
Ministry of Education (Accra, Ghana)	<ul style="list-style-type: none"> - Dr. J. S. Annan, Deputy Minister of Education: insight, guidance and access to Ghanaian educational system - Dr. Nana Banchie Darkwah: Special Advisor to Worldreader

IX. Budget and Financial Plan

The iREAD pilot study financial plan is available on request.

X. Implementation Schedule iREAD 2010/2011

The iREAD pilot study will take place over the 2010-2011 academic school year, lasting 10 months. Evaluation and results are expected to be finalized by August 2011.

June 2010

- Finalize iREAD pilot study plans

July –August 2010

- Monitoring & evaluation
 - Choose and hire monitoring and evaluation specialists
- Schools
 - Final selection of schools
 - Choose head teacher to lead project in each school
 - Begin training teachers – give Kindle to ‘play’ with so that they feel they are ‘experts’ by the time kids receive devices.
- Content
 - Begin forging relationships with local and international publishers
 - Create relationship with digitization firm
 - Obtain rights to use existing digital content for iREAD pilot at no cost
 - Digitize local content

October – November 2010

- Testing
 - Test all participating children for reading level
- Whispernet (3G connectivity for Kindle)
 - Turn on connectivity in Ghana
 - Test connectivity in school regions
- E-readers
 - Purchase 336 Kindles
 - Ship and receive
 - Unpack, label and load with content
- Teachers
 - Train teachers on use of e-reader
- Students
 - Distribute Kindles to pupils
 - Train pupils

November 2010 – June 2011

- Ongoing project support by Worldreader local staff
- Weekly ‘chats’ with teacher ‘team leaders’ in each school

February and July 2011

- Re-test pupils
- Monitoring & evaluation reports

XI. Annexes – available on request

- Worldreader.org – E-reader Trial Report 2010
- Press Pack
- Worldreader.org 501(c)(3) Bylaws
- Letter from Ministry of Education Ghana
- CVs of Worldreader team members