



Literacy Boost

El Salvador

Baseline Report

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I. Executive Summary

This report examines the results of a student background survey and reading assessment conducted in April and May 2013. The survey and reading assessment covered 875 grade 2 learners throughout 57 schools in the 3 areas of El Salvador. The 57 schools are split into 21 primary schools designated to receive Save the Children's Literacy Boost program and 36 comparison primary schools receiving no intervention. The Literacy Boost program includes teacher training, community reading activities, and age-appropriate local language material creation to support emergent literacy skills among early-grade children.

The students in this sample are eight years old on average, and 84 percent have attended early-childhood development (ECD) programs. Twenty percent of students report having repeated grade 1 and 10 percent repeated grade 2. On average, students live with families who own almost six of eight common amenities (electricity, refrigerator, stove, toilet, television, bike, running water, cell phone). Ninety-two percent of students do chores around their house, and 95 percent report studying at home.

Unique to the El Salvadorian context, questions were asked to determine whether students are having trouble seeing or hearing in class as well as whether they experience abuse or harassment at school or at home. Sixteen percent of students report having trouble seeing the board in class and 10 percent have trouble hearing the teacher speak. Twenty-three percent of students have experienced abuse or harassment at school and 12 percent report experiencing these behaviors at home.

Overall, very few significant differences exist between Literacy Boost and comparison students, indicating that these groups will be appropriate for comparing students' literacy skill gains at endline. In general, girls tend to show stronger literacy skills than boys in all areas except comprehension. Community literacy activities and teacher trainings should make an effort to identify why boys are falling behind girls in their literacy development and identify strategies for engaging boys in classroom and community activities as much as their female peers.

Students in this sample generally have strong home literacy environments, compared to Literacy Boost students in other countries. Almost all children report having someone at home who reads and 80 percent have someone at home who reads to them. On average, students have 3 different types of reading materials at home, but 40 percent report not having storybooks. Multivariate analyses find that students' home literacy environments play an important role in their literacy development. Specifically, having a greater variety of books at home is positively related to students' fluency and reading comprehension and students who report reading with someone in their home or community show stronger letter identification, single word reading, and reading accuracy skills. Community reading activity coordinators should take advantage of high print and parental engagement in these communities.

Two findings from the multivariate analyses have additional possible implications for equity and programmatic follow-up in schools and communities. First, having more possessions at home is

positively related to all baseline literacy skills except fluency. In addition, analyses find that children who have more work/chore responsibilities tend to have lower scores on the advanced skills of fluency, accuracy and comprehension. Taken together, these relationships suggest that poor children who spend more out of school time working or doing chores to help support their families could be a particularly vulnerable group in need of additional attention in and out of school.

Finally, harassment or abuse at home and having trouble seeing in class (both self-reported by students) are negatively related to numerous literacy skill areas. These relationships are correlational rather than causal but further investigation into these areas by school and community partners is warranted.

Introduction

This report examines the results of a student background survey and reading assessment conducted in April and May 2013. The survey and reading assessment covered 875 grade 2 learners throughout 57 schools in the 3 areas of El Salvador. The 57 schools are split into 21 primary schools designated to receive Save the Children's Literacy Boost and 36 comparison primary schools receiving no intervention. The Literacy Boost program includes teacher training, community reading activities, and age-appropriate local language material creation to support emergent literacy skills among early-grade children. These skills include concepts about print, letter awareness, single word reading of common words, reading fluency, reading accuracy, and listening/reading comprehension. As part of Literacy Boost, learners are periodically assessed in each of these skills through an adaptable assessment tool to inform programming and estimate program impact. The data gathered from these schools is analyzed to present a snapshot of the emergent literacy skills of grade2 learners in these schools and to inform the adaptation of Save the Children's Literacy Boost program to this context.

The key research questions to be explored in this report include:

How comparable are learners in Literacy Boost schools versus comparison schools in terms of reading skills, background characteristics, home literacy environment, and school environment?

What can the baseline tell us about learners' emergent reading skills? What does this mean for Literacy Boost programming?

How do learners' reading skills vary by student background, school environment, and home literacy environment? What does this mean for targeting Literacy Boost's two strands of intervention?

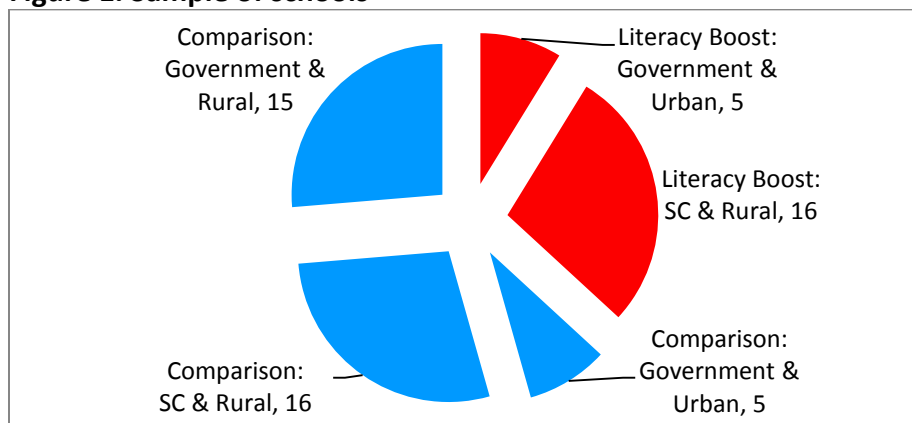
To investigate these questions, this report will first describe the research methods used; including sampling, measurement, and analysis. Next, in order to see if groups are statistically similar, the comparability of Literacy Boost and comparison schools will be examined through clustered t-tests. The comparability of Literacy Boost and comparison learners' scores for each of the emergent literacy skills, exploring learners' strengths and weaknesses in each skill will also be examined. The report will then examine what are the literacy skills that are already present in the sample, and what areas should Literacy Boost focus on. The report will then investigate student backgrounds examined through clustered t-tests. Finally, the report will investigate any correlations with student background, school environment, or home literacy practices and environment variables using multilevel regression analysis.

II. Methods

Sampling

The sample for this baseline assessment encompasses 875 grade 2 learners, divided between 21 schools set to receive the Literacy Boost intervention (341 learners) and 36 comparison schools (534 learners). Schools were selected based on multiple characteristics (e.g., population served, student scores on language tests, access to books, adult literacy rates in the community, school size, distance from urban areas, etc.). Ten government funded urban primary schools in San Salvador were selected to participate in this pilot study (5 intervention; 5 control). The selected intervention schools in non-urban areas are located in Save the Children (SC) sponsorship sites (16 intervention schools) and comparison schools include 16 SC sponsorship schools and also 15 government run primary schools receiving no SC funding. See Figure 1 for a detailed breakdown of the schools included in this pilot program.

Figure 1. Sample of schools



At each of the Literacy Boost and comparison schools where data was collected, 20 children in grade 2 were sampled. If there was more than one section of standard 2 at a given school, one section was randomly selected. Ten boys and ten girls were randomly and voluntarily selected where there were more than 20 learners in the classroom, with the exception of one all-girls school. As a result, there are 432 boys and 443 girls in the sample, and the Literacy Boost sample is 49 percent male and the comparison sample is 51 percent female.

Measurement

School profile data were collected via direct observation and a survey of school head teachers or principals at every school in the sample. This data includes information on enrolment and class size, availability of textbooks, school facilities and construction, and teacher backgrounds. For the student assessment, all learners in the sample were asked about their background characteristics (age, household possessions, household building materials, etc.). Learners were also asked about their family members and reading habits in their home (who they had seen reading in the week prior to the assessment, who had read to them, etc.). Table 1 describes the information collected from students during the baseline assessment in March 2013.

Table 1: Literacy Boost Assessment Instruments

Student background	Examples
General	Sex, age, language spoken at home, work
School-related	Distance to walk to school, repetition history
Socioeconomic status	Type of home, household size, household amenities/possessions
Health	Sickness, meals, vision, hearing
Home Literacy Environment	
Access to print	Materials present in home, types of materials
Reading at home	Presence and percentage of family members who children see read, and who read
Reading Outcome	Description
Alphabet knowledge	Number of letters/sounds known of 56
Single word reading	Number of single words read correctly of 20
Fluency	Number of words in a connected text read correctly in a minute
Accuracy	Percentage of words in a connected text read correctly
Comprehension	Number of comprehension questions answered correctly after reading text aloud of 9

After collecting background information, all learners were also given an emergent literacy test composed of five components administered through four sub-tests: letter awareness, single word recognition (reading of most used words), reading fluency and accuracy (words per minute read correctly and total percentage of passage read correctly; both within the same sub-test), and a set of comprehension questions linked to the fluency and accuracy passage. The same set of comprehension questions were administered for both those learners who could read independently (reading comprehension) and those who could not and thus had the assessor read to them (listening comprehension). Detail on inter-rater reliability is provided in Appendix A.

Analysis

To test the comparability of learners in the Literacy Boost and comparison samples, this report will use comparison of means through t-tests, with clustered standard errors to account for the grouping of student-level data within schools. Summary statistics, accompanied by clustered t-tests, will be used to analyze learners' performance in each of the reading sub-tests. Finally, this report will look to multilevel regression models to explore relationships between literacy skills and student background characteristics, school environment, and home literacy environment.

Note about benchmarks

While Save the Children has implemented the Literacy Boost approach to reading assessment and intervention in Afghanistan, Bangladesh, Burundi, El Salvador, Ethiopia, Guatemala, Indonesia, Kenya, Malawi, Mali, Mozambique, Pakistan, Peru, the Philippines, Rwanda, South Africa, Sri Lanka, Uganda, Zimbabwe, comparison across countries and languages is less helpful than more detailed contextual information for setting expectations of impact. For each measure used in these assessments, the upper end of the range of scores can be used to consider what is currently possible among these children.

III. Children's Background

The students in this sample are eight years old on average, and 84 percent have attended early-childhood development (ECD) programs. Twenty percent of students have repeated grade 1 and 10 percent have repeated grade 2. On average, students live with families who own almost six of eight common amenities (electricity, refrigerator, stove, toilet, television, bike, running water, cell phone). Ninety-two percent of students do chores around their house, and 95 percent report studying at home. Table 2 displays that the only significant difference between comparison and Literacy Boost students are that more Literacy Boost students report working outside the home than comparison students. Similarly, the only differences observed between students in SC schools and students in government schools were that students in governments schools tended to have higher quality roofs and floors.

Unique to the El Salvadorian context, questions were asked to determine whether students are having trouble seeing or hearing in class as well as whether they experience abuse or harassment at school or at home. Sixteen percent of students report having trouble seeing the board in class and 10 percent have trouble hearing the teacher speak. Twenty-three percent of students have experienced abuse or harassment at school and 12 percent report experiencing these behaviors at home. No significant differences were found between students in comparison and Literacy Boost schools or between students in SC and government schools in these areas.

Table 2. Student Background Information

	Comparison (N=534)	Literacy Boost (N=341)	Significant difference
% Female	51.1%	49.9%	
Age	8.2	8.3	
Attended ECD	81.8%	87.7%	
Repeated Grade 1	19.1%	21.7%	
Repeated Grade 2	9.2%	12.4%	
Works outside home	16.1%	24.6%	*
Chores at home	92.5%	90.6%	
Studies at home	94.4%	96.8%	
Time to get to school (minutes)	19.8	17.0	
Total home possessions (out of 8)	5.6	5.7	
Experienced abuse/harassment at school	22.3%	25.2%	
Experienced abuse/harassment at home	11.4%	12.9%	
Ate breakfast this morning	91.6%	90.9%	
Feels sick today	33.6%	26.4%	
Problem seeing in class	17.4%	14.4%	
Problem hearing in class	10.1%	10.6%	
Drinking water at home is purified	37.5%	48.4%	

*p<.05, **p<.01, ***p<.001

Gender Differences

Overall, boys and girls in this sample are very similar on measurable background characteristics that were captured by the assessment. However, as displayed in Table 3, on average boys work more outside of the home than girls, and boys are more likely than girls to report experiencing abuse or harassment at school. Diving deeper into these findings we see that boys in Literacy Boost schools work outside the home significantly more than boys in comparison schools as well as both comparison and Literacy Boost girls (see Appendix B for full details).

Table 3. Student Background Information, by Sex

	Boys (N=432)	Girls (N=443)	Significant difference
Age	8.3	8.2	
Attended ECD	82.2%	86.0%	
Repeated Grade 1	22.2%	18.1%	
Repeated Grade 2	10.9%	9.9%	
Works outside home	23.8%	15.1%	*
Chores at home	91.0%	92.6%	
Studies at home	94.7%	95.9%	
Time to get to school (minutes)	18.0	19.3	
Total home possessions (out of 8)	5.6	5.7	
Experienced abuse/harassment at school	26.9%	20.1%	*
Experienced abuse/harassment at home	11.4%	12.6%	

*p<.05, **p<.01, ***p<.001

IV. Children's Reading Skills

Letter Identification

A chart of 56 letters was shown to children and they were asked to name each letter or pronounce the letter sound. On average, Literacy Boost and comparison learners correctly identified 77 percent (43 letters) out of a combined total of 28 uppercase and 28 lowercase letters. The most difficult upper and lowercase letters were: Q, Ll, Y, and K; the most often named correctly were: O, U, A and E. One possible reason for these trends is that the easier letters are taught to children earlier and used more frequently, whereas the more difficult letters are taught later and used more infrequently in written and spoken language. There were no significant differences between Literacy Boost and comparison students or between students in SC and government schools.

Single Word Reading: Most Used Words

The single word reading or most used words (MUW) sub-test consists of a chart of 20 words that a student is asked to read. These 20 words were identified as the second 'most used' by tabulating the number of times a word appeared in learners' language textbooks. (The 20 most used words from students' Spanish textbooks were pilot tested and found to be too easy for children, so the next 20 most common words were used for the assessment.)

On average, learners in Literacy Boost and comparison schools were able to read 77 percent of words presented (15 out of 20 words), and there were no statistically significant difference between the two groups or between students in SC and government schools in common word knowledge. Learners had the easiest time reading the words *sapo* and *más*, and the most difficult time reading the words *responde* and *texto*. Similar to the trends seen with letters, these easier words are generally taught to students earlier, whereas the more difficult words include less common letters and are used less frequently in written and spoken language.

Fluency and Accuracy

Fluency (words per minute read correctly) and accuracy (percent of the passage read correctly) are presented together here because they are measured together in a single sub-test in which learners read a passage aloud. The number of words learners read correctly in a minute is tracked for fluency. As the student continues to read after the first minute, the total number of words read correctly from the passage as a whole, no matter how long it takes the student, is computed for accuracy.

The average fluency rate for Literacy Boost and comparison students was 36 words per minute, and their accuracy was 66 percent. There were no significant differences between the fluency and accuracy skills of Literacy Boost and comparison students or between students in SC and government schools.

Comprehension

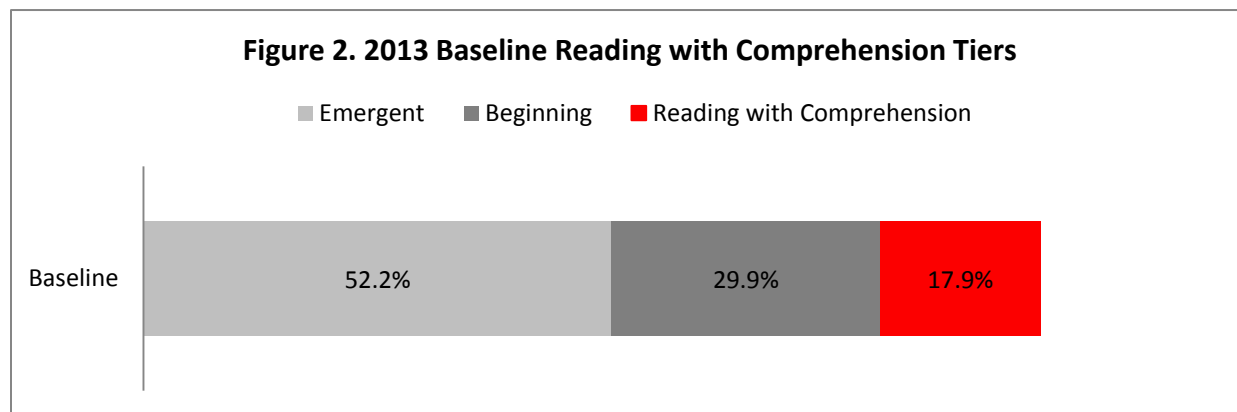
The final sub-test assessed learners on a series of nine comprehension questions related to the reading passage. For those learners who were unable to read five words of the passage within 30 seconds, the assessor read the passage to the student before asking the comprehension questions. Seventy-one percent of Literacy Boost and comparison students could read the passage themselves. Children who could read on their own were not read to by the assessors, and tested on the same comprehension questions. There were no statistical differences in the proportion of Literacy Boost and comparison students or between students in SC and government schools who could read the passage independently.

Literacy Boost and comparison students answered 66 percent of reading comprehension questions correctly, and 59 percent of listening comprehension questions. There were no statistical differences in the scores of Literacy Boost students and comparison students or between students in SC and government schools.

The first question for students was the summary question, which asked students to retell the story in their own words. Students were given a correct mark on this question if they were able to accurately recount three of the four most important parts of the story. The easiest type of comprehension question to answer were the factual questions, where students were asked to recall facts that were presented in the story. This type of question asked the students questions like "What was the name of the main character?" and "Where did the main character go?" The next hardest questions were both the inferential and the evaluative questions. Inferential questions ask students to use the information from the text to make inferences, while the evaluative questions ask student to state an opinion on a feature of the story and support that opinion with reasons for that opinion. Students had the most difficulty with the literal and inferential questions that required use of specific portions of the text to answer questions.

The Literacy Boost program classifies students into Emergent, Beginning, and Reading with Comprehension tiers based on their fluency, accuracy and comprehension skills. In this sample, we see that 52 percent of Literacy Boost students are classified as being beginning readers – meaning they are

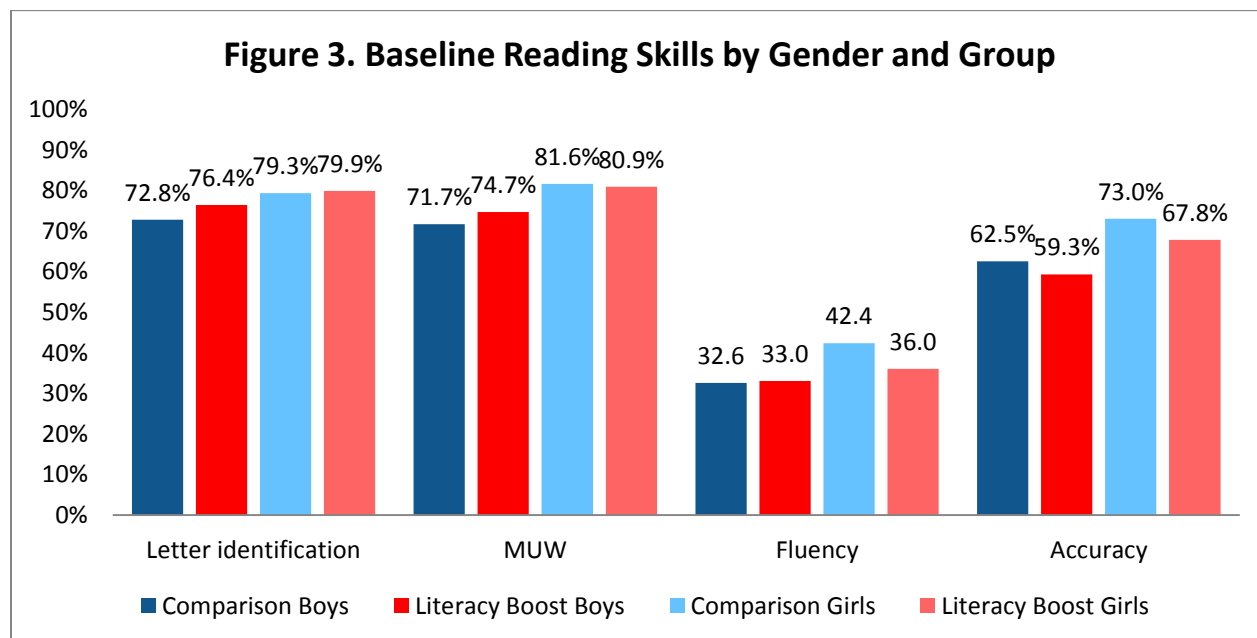
either nonreaders altogether or are readers with very low comprehension, and only 18 percent have reached the level of reading with comprehension (see Figure 2). There were no statistical differences in the scores of Literacy Boost students and comparison students or between students in SC and government schools.



Note: Emergent Readers correctly answers less than 40-50 percent of the comprehension questions; Beginning readers correctly answers between 40-50 and 75-80 percent of the questions correctly; Readers with Comprehension correctly answers more that 75-80 percent of the comprehension questions. Tier cut-offs were set in combination with associated fluency and accuracy levels in each language and country, vary based on the number of comprehension questions asked.

Gender Differences

Overall, marginal significant differences exist between the literacy skills of boys and girls at baseline in letter identification, single word reading, fluency and accuracy ($p < .1$). Figure 3 displays an analysis of gender differences by group which finds that comparison and Literacy Boost girls score higher than comparison boys on letter identification and single word reading. In addition, comparison girls score significantly higher than boys in both the comparison and Literacy Boost groups in fluency and accuracy ($p < .05$).



V. Children's Home Literacy Environment

Differences in the Home Literacy Environment

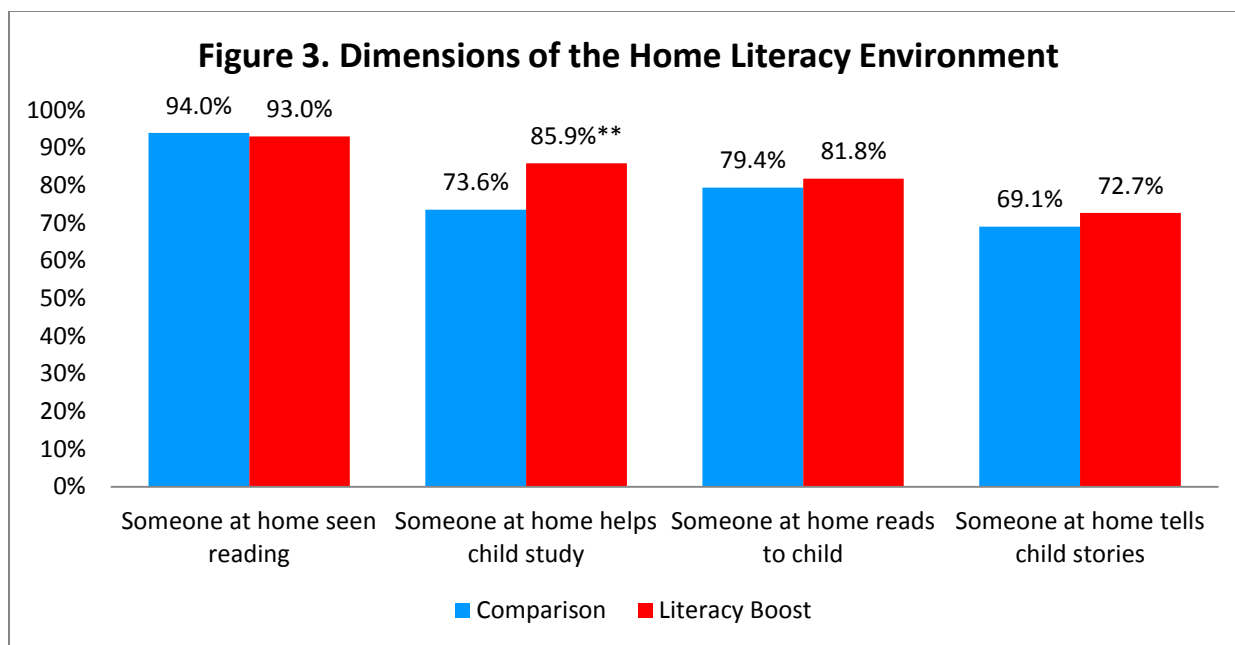
An important aspect of reading development concerns the home literacy environment (HLE). How are children exposed to the printed word in the home? How much access do they have to books and print to practice their nascent reading skills? Many Literacy Boost activities are centered on helping parents and communities to enhance the HLE. As such, it is important to measure where learners' HLEs begin, and how they change over the course of time. Table 4 displays the different types of printed materials that children have at home.

Table 4. Presence of Reading Materials in the Household

	Average (N=875)	Comparison (N=534)	Literacy Boost (N=341)	Significant difference
Textbook	69.7%	68.5%	71.8%	
Religious material	87.9%	88.9%	86.3%	
Magazine	77.1%	77.1%	77.1%	
Newspaper	48.8%	48.6%	49.2%	
Story book	59.3%	60.3%	57.7%	
Comics	8.0%	5.0%	11.1%	
Total book types (out of 6)	3.3	3.4	3.3	

Nearly all learners have some type of reading materials at home. The most common reading resource in students' homes is religious material, and the least common is comic books. It should also be noted that only about a quarter of students answered the question about comics and further investigation is needed to determine why this happened. No statistically significant differences exist between Literacy Boost and comparison groups or between students in SC and government schools.

The HLE is not only about materials in the home, but also how those materials are used to engage the child in reading and learning. Hess and Halloway (1984) identified five dimensions of the home literacy environment that are theoretically related to reading achievement in children. The first is *value placed on literacy*, which we operationalize by asking the learners whether they see anyone reading at home. The second is *press for achievement*, which we operationalize as individuals telling or helping the student to study. The third is *the availability and use of reading materials*, which we operationalize as the amount of printed materials at home (see Table 2). The fourth dimension is *reading with children*, which we operationalize by asking the learners whether anyone reads to them at home. The last is *opportunities for verbal interaction*, which we operationalize as family members telling stories to learners. Figure 3 shows how the Literacy Boost and comparisons groups measure up in terms of engagement in these four home literacy environment activities.



* $p < .05$, ** $p < .01$, *** $p < .001$

Over 90 percent of learners come from a home that has at least one person who actively reads. In addition, more than two-thirds of students have someone at home that helps them study, reads to them and tells them stories. Significantly more Literacy Boost than comparison students report that someone at home helps them study. No significant differences exist between students in SC and government schools.

Overall, we find that 45 percent of students are lending/sharing books with people in their homes or communities, and 68 percent of students report reading with someone in their family or community. Finally, 94 percent of students said that they like to read. There are no differences between Literacy Boost and comparison students. Please see Appendix B for a full list of home literacy environment results from the baseline assessment.

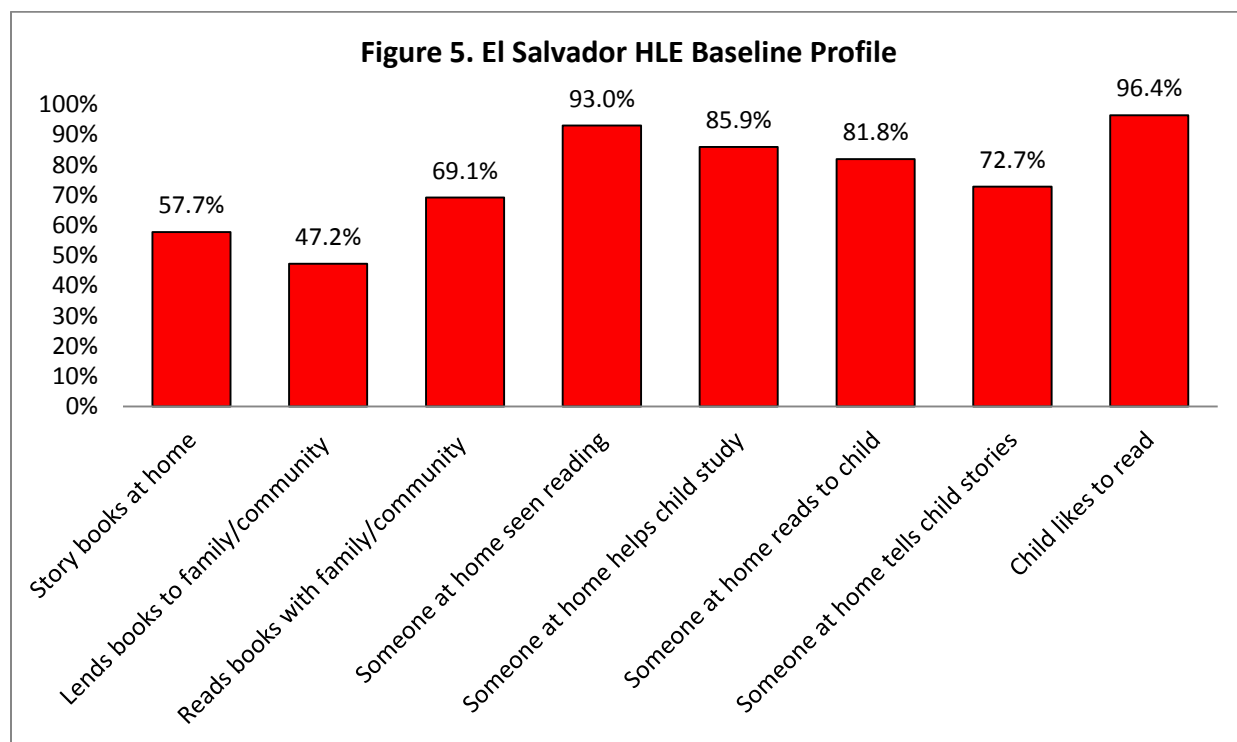
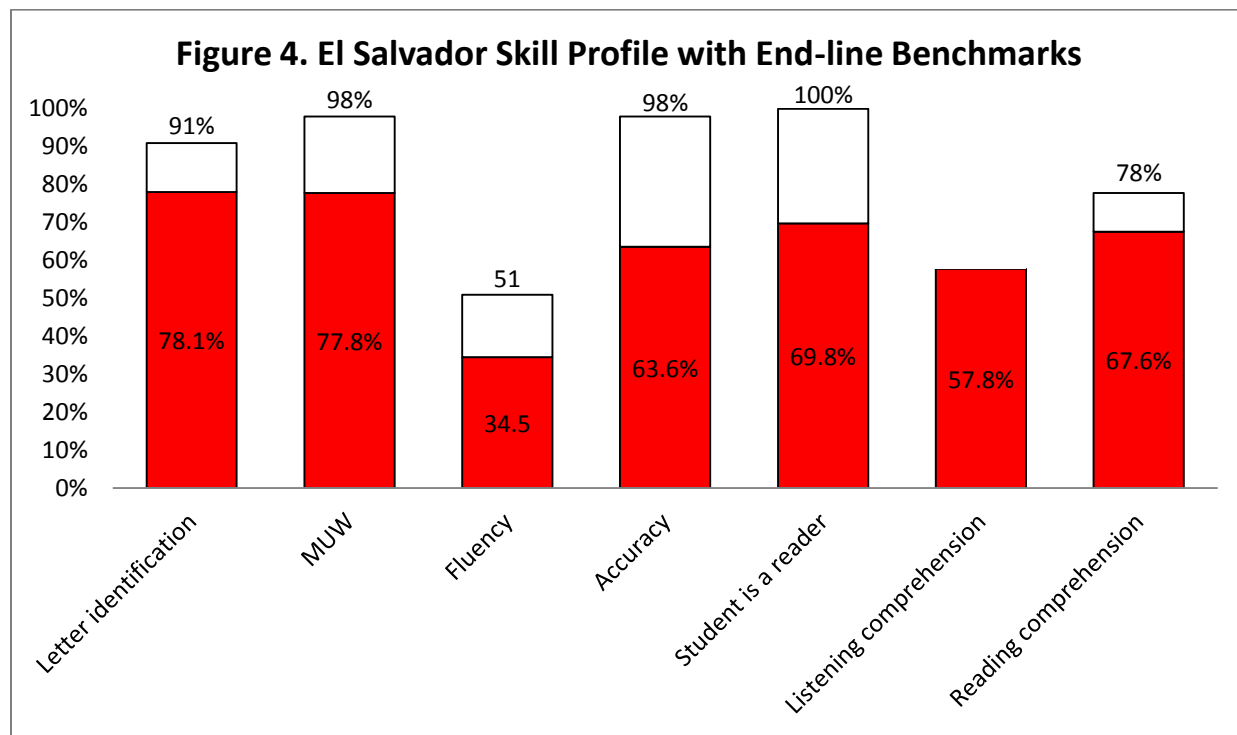
Gender Differences

No differences exist between the reading materials or home literacy activities available to boys and girls in this sample. However, girls report reading with family or community members more often than boys (72 compared to 64 percent, $p < .05$).

VI. Literacy Boost Site profiles: Skills and Home Literacy Environment

This section summarizes the reading skills and home literacy environments across Literacy Boost schools. It includes a chart summarizing letter identification, single word reading, fluency, accuracy, and comprehension scores as well as a chart summarizing students' home literacy environments. Figure 4 displays Literacy Boost students' average scores on all literacy sub-skill assessments, with the white

segments on top of the red baseline averages representing the 75 percentile benchmarks against which to measure Literacy Boost students' skill growth at the end-line assessment. In addition, Figure 5 displays students' average home literacy environment.



The average literacy skills and home literacy environments seen in Figures 4 and 5, will be used to help decide on appropriate benchmarks for Literacy Boost students at the end-line assessment. The following is an outline of the skill goals we have for students as well as in-school and out-of-school activities associated with improving these skills.

1. Letter identification – Endline benchmark: 91 percent
 - a. Given that Q, Ll, Y, and K and were the most difficult letters for students to identify, the program team will encourage teachers to focus on activities that emphasize these letters.
2. Single Word Reading (MUW) – Endline benchmark: 100 percent
 - a. Given that responde and texto were the most difficult words for students to identify, the program team will encourage teachers focus on multisyllabic words and also words with uncommon letters, like X.
3. Fluency – Endline benchmark: 51 words per minute
 - a. Teachers and reading camp leaders can encourage students to read aloud to others in class, in camps and at home.
4. Accuracy – Endline benchmark: 98 percent correct
 - a. Through emphasis of word knowledge in school and reading aloud in many contexts, students should also improve the accuracy of their reading
5. Comprehension – Endline benchmark: 78 percent
 - a. There no listening comprehension goal because we aim to have all students become independent readers by endline.
 - b. This is the area with the greatest growth potential for the children in this sample. Teachers and community program leaders should continue to incorporate comprehension exercises into all of their lessons so students can further develop their ability to understand and extrapolate from written texts.

Figure 5 displays that students' home literacy environment are generally strong with reading materials and literacy activities occurring in most homes. However, 40 percent of students do not have story books at home so Book Banks have the opportunity to encourage more child-friendly books in the home. In addition, efforts should be made to reach those students who do not have family members reading to them or telling them stories as they are the vulnerable to falling behind their peers living in stronger home literacy environments.

VII. Relationships between Skills and Home Literacy Environment

This final section explores the results of a series of multivariate regressions, accounting for clustering of students within schools. To arrive at the most relevant regression model, the significance of student background and home literacy environment variables were tested in both univariate and combined multivariate models, using reading skill sub-tests as the dependent variables. Appendix C presents the results of the final multivariate models for each literacy subtest. It should be noted that these

relationships convey correlation rather than causation. To establish causation requires further research and/or endline analysis.

Student Background

Analyses show consistent relationships between student characteristics and reading skills. Specifically, we find that for letter identification, single word reading and fluency, girls have stronger baseline scores than boys, and across all skills students who have repeated the second grade have lower scores than peers who have not repeated this grade. In addition, having more possessions at home is positively related to all baseline literacy skills except fluency (Figure 6). Finally, students who live in urban areas have stronger literacy skills than students living in rural areas on all dimensions assessed. These four trends follow patterns seen in other Literacy Boost countries, as well as other research studies on similar topics. However, the trend of girls outperforming boys in early literacy skills tends to occur only in more highly developed countries.

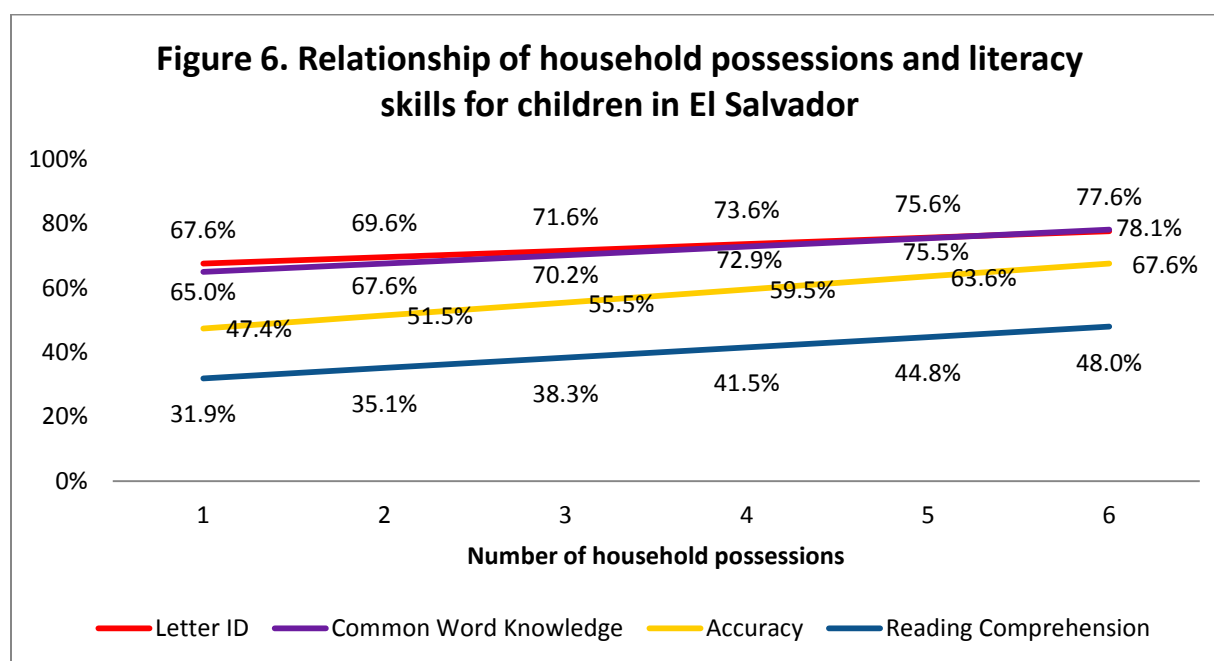
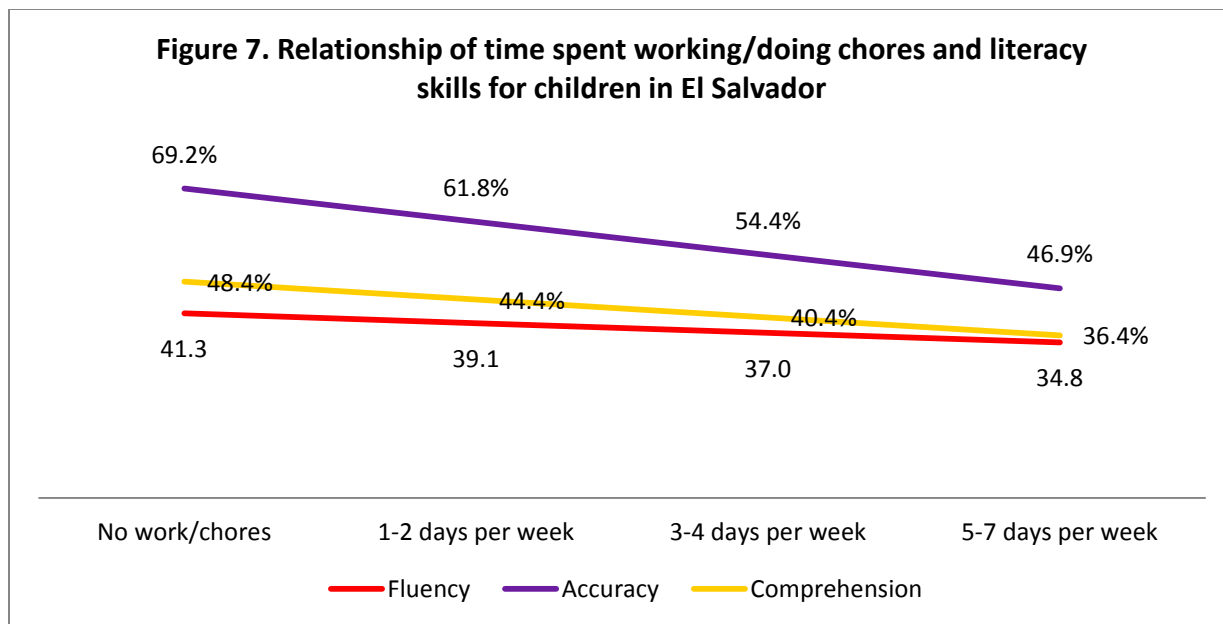
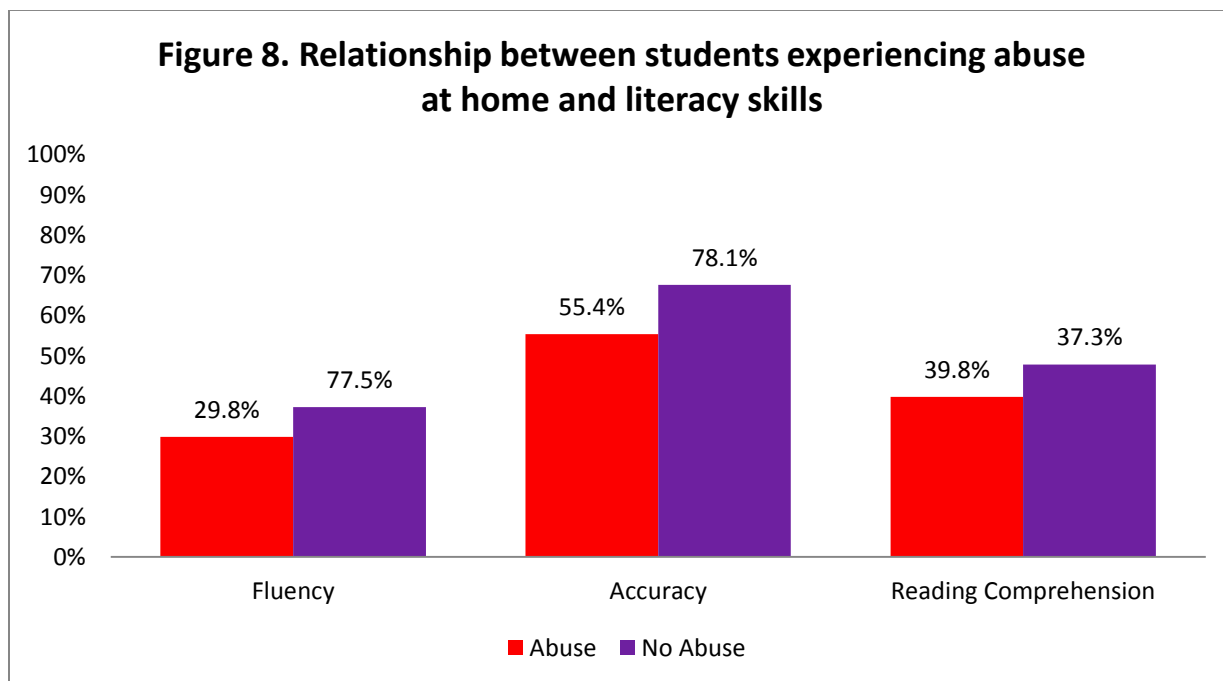


Figure 7 displays that the more time children spend working or doing chores outside of school the lower their scores are on the more advanced early literacy skills of fluency, accuracy and reading comprehension. In addition, time spent working was negatively related to the likelihood of being an independent reader.

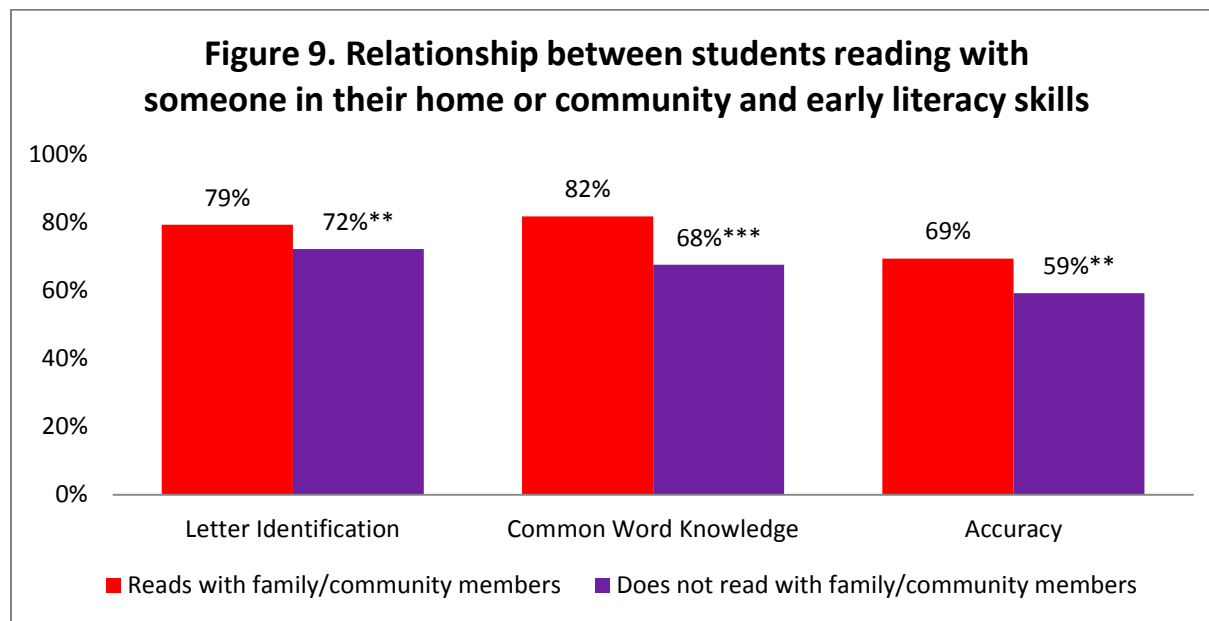


The El Salvadorian assessment also asked students whether or not they were physically, emotionally or verbally abused at home or at school. Multivariate analyses find that students who reported experiencing abusive behavior at home had statistically significantly lower predicted fluency scores than students who were not abused. Univariate analyses further corroborate that this negative relationship between abuse at home and emergent reading skills is also significant for accuracy and reading comprehension. Children who experience abuse at home also score marginally ($p < .1$) lower than non-harassed/abused children in letter identification and single word reading.



Home Literacy Environment

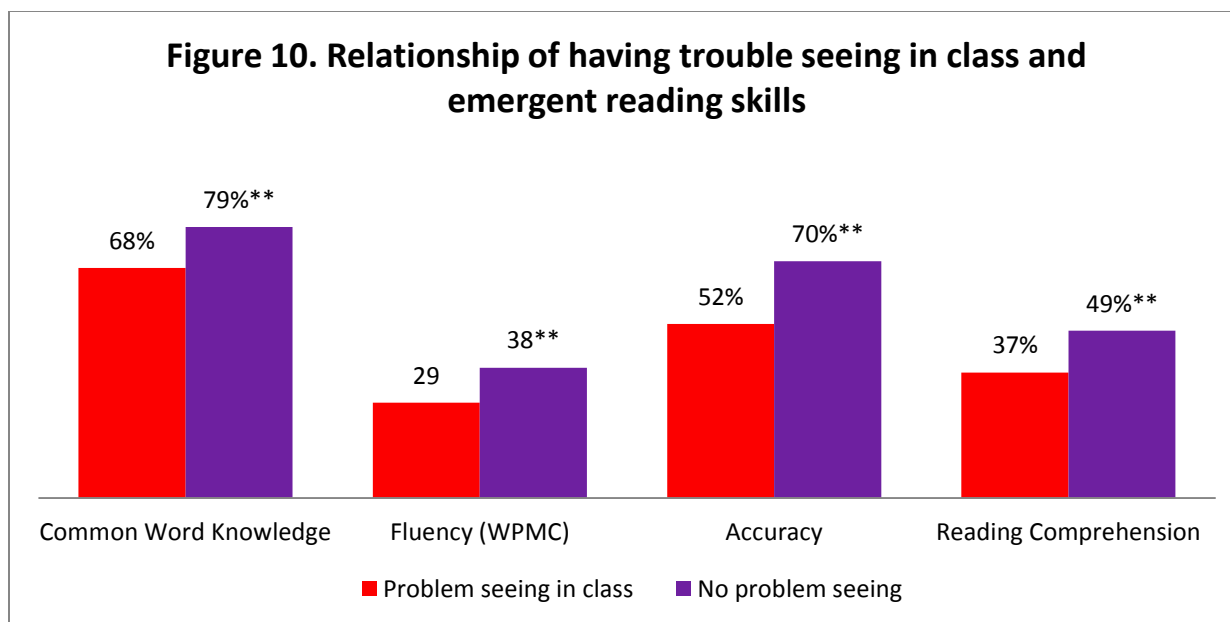
Similar to trends seen in other Literacy Boost countries, strong home literacy environments are found to be positively related to their early literacy skills. Specifically, having a greater variety of books at home is positively related to students' fluency and reading comprehension. Further, students who report reading with someone in their home or community show stronger skills in letter identification, single word reading, and reading accuracy (see Figure 9).



An additional question asking children whether or not they like reading was found to be significantly positively related to all reading skills. Interestingly, 94 percent of children report that they like to read. So it seems that the small numbers of children who report not liking to read are those who struggle the most to learn the foundational skills necessary to read with comprehension. This has important implications for programming as teacher, community members and families can help children overcome the frustration of becoming an independent reader.

School Health and Nutrition

The most prominent health concern captured in this data collection is the fact that children who have trouble seeing in class are not performing as well as their peers who do not have trouble seeing in all skill areas except letter identification (see Figure 10). In addition, feeling ill on the day of the assessment is associated with lower fluency and accuracy scores. It is unclear whether feeling ill only impacts students' literacy scores on the day that they are feeling sick or whether there are longer lasting effects, and this should be the subject of future analyses.



*** p<0.001, ** p<0.01, * p<0.05

VIII. Conclusion

Overall, very few significant differences exist between Literacy Boost and comparison students, indicating that these groups will be appropriate for comparing students' literacy skill gains at endline. However, significant baseline skill differences do exist between other groups of interest in this sample.

In general, girls show stronger literacy skills than boys in all areas except comprehension. Community literacy activities and teacher trainings should make an effort to identify why boys are falling behind girls in their literacy development and identify strategies for engaging boys in classroom and community activities as much as their female peers.

Multivariate analyses find that students' home literacy environments play an important role in their literacy development. Students in this sample generally have strong home literacy environments, compared to Literacy Boost students in other countries. Community reading activity coordinators should take advantage of high print and parental engagement in these communities, especially when recruiting volunteers for Reading Camps. In addition, 40 percent of children do not have access to storybooks, and Book Banks could be an important resource for bringing more child-friendly reading materials into communities.

The strong positive relationship between possessions at home, which is used as a proxy for students' socioeconomic status, and literacy skills suggests that economically disadvantaged children need more support in their literacy development than more advantaged children. Taken with the other associations between gender, time spent work/doing chores, and urbanicity programmatic focus on the poorest boys, children in the rural areas and those with the heaviest work/chore load could be warranted.

With the finding that children who have more work/chore responsibilities tend to have weaker skills in the more advanced areas of fluency, accuracy and comprehension, program coordinators should take care to schedule activities at times when the most children can attend. One effective strategy could be to vary the scheduling of Reading Buddy or Reading Camp meetings on different days or different times of the day over time.

Two other findings also warrant follow-up in schools and in communities. First, experiencing harassment or abuse at home (self-reported by children) is associated with lower average fluency scores. Going forward, community reading activities that involve parents could share the findings of this report and encourage parents to focus on less aggressive behavior toward their children. Finally, students who self-report having trouble seeing in class show lower average literacy skills than other students who do not have trouble seeing in all areas except letter identification. Within schools, efforts should be made by teachers to accommodate students who are having trouble seeing (e.g. moving a student who cannot see well to the front of the classroom).

Appendix A: Inter-rater reliability

To test inter-rater reliability, about 10 percent of learners (59 out of 887) were assessed by two enumerators simultaneously. Long one-way ANOVA techniques were used to calculate the intra-class correlation within pairs of assessors for a measure of reliability. Using Fleiss' benchmarks for excellent ($ICC > 0.75$), good or fair ($0.75 \geq ICC > 0.4$), and poor ($0.4 \geq ICC$) we find that all of the literacy outcome variables exhibited excellent inter-rater reliability. Table A1 shows the percent of agreement between the raters.

Table A1. Inter-rater Reliability		
Literacy Skill Sub-Test	Inter-rater Reliability	Rating
Letter Knowledge	.982	Excellent
Most Used Words	.949	Excellent
Fluency	.937	Excellent
Accuracy	.889	Excellent
Comprehension	.963	Excellent

There was excellent inter-rater reliability on every measure. Raters had near perfect agreement on the scoring of all measures. In general, inter-rater reliability was very high, and we can be confident that the internal validity of the scores is good.

Appendix B. Additional Descriptive Statistics

Table B1. Student Background Information, by Sex and Intervention Group

	Comparison Boys (N=261)	Comparison Girls (N=273)	Significant Difference Comparison Boy v. Girl	Literacy Boost Boys (N=170)	Literacy Boost Girls (N=170)	Significant Difference Literacy Boost Boy v. Girl	Significant Difference Literacy Boost v. Comparison (Boys,Girls)
Age	8.3	8.1	*	8.3	8.3		
Attended ECD	79.7%	83.8%		86.0%	89.4%		*
Repeated Grade 1	23.0%	15.4%		21.1%	22.4%		
Repeated Grade 2	9.2%	9.2%		13.6%	11.2%		
Works outside home	19.2%	13.2%		31.0%	18.2%	*	*, **
Chores at home	92.0%	93.0%		89.5%	91.8%		
Studies at home	93.5%	95.2%		96.5%	97.1%		
Time to get to school (minutes)	19.5	20.0		15.8	18.2		
Total home possessions (out of 8)	5.6	5.6		5.6	5.7		
Experienced abuse/harass- ment at school	24.5%	20.1%		30.4%	20.0%		
Experienced abuse/harass- ment at home	10.7%	12.1%		12.4%	13.5%		
Ate breakfast this morning	93.1%	90.1%		90.1%	91.8%		
Feels sick today	30.7%	36.4%		26.9%	25.9%		
Problem seeing in class	18.8%	16.1%		15.8%	12.9%		
Problem hearing in class	11.1%	9.2%		11.1%	10.0%		
Drinking water at home is purified	35.2%	39.6%		46.8%	50.0%		*

*p<.05, **p<.01, ***p<.001

Table B2. Home Literacy Environment by Sample Group

	Comparison (N=534)	Literacy Boost (N=341)	Significant difference
Textbook	68.5%	71.8%	
Religious material	88.9%	86.3%	
Magazine	77.1%	77.1%	
Newspaper	48.6%	49.2%	
Story book	60.3%	57.7%	
Comics	5.0%	11.1%	
Total book types (out of 6)	3.4	3.3	
Lends books to family/community members	43.1%	47.2%	
Reads books with family/community members	67.5%	69.1%	
Child likes to read	92.6%	96.4%	
Someone at home seen reading	94.0%	93.0%	
Someone at home helps child study	73.6%	85.9%	**
Someone at home reads to child	79.4%	81.8%	
Someone at home tells child stories	69.1%	72.7%	
% of household seen reading	68.7%	70.1%	
% of household helping child study	36.1%	43.7%	*
% of household reading to child	41.0%	46.2%	
% of household telling child stories	35.3%	42.2%	

*p<.05, **p<.01, ***p<.001

Table B3. Student Background Information and Home Literacy Environment, by Type of School

	Save the Children	Government	Significant difference
% Female	50.2%	51.3%	
Age	8.3	8.2	
Attended ECD	86.3%	80.7%	
Repeated Grade 1	19.4%	21.3%	
Repeated Grade 2	10.2%	10.8%	
Works outside home	45.2%	31.8%	
Chores at home	91.4%	92.4%	
Studies at home	96.6%	93.3%	
Time to get to school (minutes)	18.6	18.7	
Total home possessions (out of 8)	5.4	6.0	
Experienced abuse/harassment at school	24.4%	21.9%	
Experienced abuse/harassment at home	12.8%	10.8%	
Textbook	69.5%	70.0%	
Religious material	86.2%	90.5%	
Magazine	76.6%	77.7%	
Newspaper	46.0%	53.1%	
Story book	56.9%	63.1%	
Comics	8.8%	5.1%	
Total book types (out of 6)	3.2	3.5	
Lends books to family/community members	46.4%	42.0%	
Reads books with family/community members	69.1%	66.7%	
Child likes to read	95.4%	92.0%	
Someone at home seen reading	93.4%	93.9%	
Someone at home helps child study	80.1%	75.8%	
Someone at home reads to child	79.9%	81.0%	
Someone at home tells child stories	69.2%	72.6%	
% of household seen reading	69.3%	69.2%	
% of household helping child study	40.0%	37.6%	
% of household reading to child	43.4%	42.5%	
% of household telling child stories	38.7%	36.9%	

Appendix C. Regression Results

Table C1. Regression results

VARIABLES	(1) Letter identification	(2) MUW	(3) Fluency	(4) Accuracy	(5) Reading comprehension	(6) Reader
Age	-0.0212* (0.00942)					
Sex (Female=1)	0.0452** (0.0149)	0.0753** (0.0227)	6.28*** (1.757)	0.0738* (0.0280)	0.0523* (0.0209)	0.329* (0.152)
Repeat grade 2	-0.0666* (0.0261)	-0.14*** (0.0393)	-8.900** (2.640)	-0.175** (0.0505)	-0.118** (0.0356)	-0.828** (0.255)
Possessions at home	0.0101* (0.00450)	0.0222** (0.00797)		0.0291** (0.0105)	0.0171* (0.00680)	0.108* (0.0504)
Abuse/harassment at home			-4.143* (1.850)			
Chores at home			-2.182** (0.789)		-0.0246 (0.0123)	
Work outside home				-0.0597** (0.0177)		-0.269** (0.0823)
Book types at home			2.103** (0.624)		0.0163* (0.00735)	
Reads with family/community	0.0589*** (0.0166)	0.124*** (0.0283)		0.0887* (0.0335)		0.468** (0.164)
Feels sick at assessment			-4.956** (1.616)	-0.0747* (0.0286)		
Problem seeing in class		-0.120** (0.0420)	-9.160** (2.896)	-0.161*** (0.0451)	-0.123*** (0.0329)	-0.731** (0.225)
Urban school	0.0667** (0.0196) (0.0988)		13.0*** (3.518) (3.231)	0.115* (0.0439) (0.0705)	0.115*** (0.0293) (0.0501)	0.838* (0.353) 0.0749
Constant	0.821***	0.559***	33.2***	0.470***	0.355***	(0.314)
Observations	856	861	860	859	862	860
R-squared	0.110	0.104	0.139	0.125	0.094	NA

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05