Literacy Boost

Afghanistan Year 1

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Executive Summary

This report examines the results of a learner background survey and reading assessment conducted in Faryab and Saripul prior to beginning the Literacy Boost intervention and again after a year of implementation. The baseline survey and reading assessment covered 600 grade 3 learners throughout 30 schools in the Faryab (16 schools) and Saripul (14 schools) Provinces of Afghanistan and the follow up gathered data again from 567 of these children. The 30 schools are split into 15 primary schools designated to receive Literacy Boost and 15 comparison primary schools receiving no intervention. This report explores: the comparability of the learners in Literacy Boost and comparison schools at endline, the skills profiles at endline and gains from the baseline, equity in learning by gender, poverty, home literacy and other characteristics. These results will inform targeting of further intervention.

At endline, learners in Literacy Boost schools had higher gains in reading comprehension, fluency and accuracy and lower gains in the rest subcomponents of the test. However, the difference in gains between comparison and Literacy Boost schools is not statistically significant for any of the subtests. One factor that can be influencing this result is the fact that some of the components of the program (classroom readjustment in Faryab and teacher training in Saripul) were conducted just a few months before the endline assessment. Therefore, the endline assessment could not be capturing the effect of these components. Furthermore, benchmarks show LB students meet reading comprehension, accuracy for non-readers, and fluency for readers benchmarks set at baseline. The rest of benchmarks for subtests were not met. Literacy Boost should continue to pursue different activities as reading camps and buddies and activities and games that teach letters to continue to move towards meeting benchmarks.

In terms of home literacy environment, comparison and Literacy Boost students presented gains from baseline. In reading materials, the increase is more evident for picture, coloring and story books and in terms of reading exposure in both indicators tracked (people at home that read to the child and people seen reading). For all Home Literacy indicators, Literacy Boost learners had bigger gains than those from comparison schools but the difference is not statistically significant. Also, the analysis shows that learners on the lowest Home Literacy Environment quintiles have lower gains, in particular in concepts about print. Literacy Boost should continue to encourage the provision of print materials and reading activities with family and community members.

The final section of the analysis deals with equity and struggling students. Taking only the students present at baseline and endline, girls and boys do not score significantly different or have different gains, meaning that the program has not disproportionately benefitted any gender. Students from disadvantaged backgrounds, Home Literacy Environments, and those that have not attended ECD have lower predicted scores than other students. Finally, struggling students are more likely to be younger, to not have attended an early education program and have a poorer Home Literacy Environment. They also have lower gains in all subcomponents of the assessment than their more skilled peers.

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I. Introduction

This report examines the results of a learner background survey and reading assessment conducted in Faryab and Saripul prior to beginning the Literacy Boost intervention and again after a year of implementation. The baseline survey and reading assessment covered 600 grade 3 learners throughout 30 schools in the Faryab (16 schools) and Saripul (14 schools) Provinces of Afghanistan and the follow up gathered data again from 567 of these children. The 30 schools are split into 15 primary schools designated to receive Literacy Boost and 15 comparison primary schools receiving no intervention. This report explores: the comparability of the learners in Literacy Boost and comparison schools, the skills profiles at baseline and endline, equity in learning by gender, poverty, home literacy and other characteristics. These results will inform targeting of further 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 most used words, reading fluency, reading accuracy, and 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 grade 3 learners in these schools and to inform the adaptation of SC's Literacy Boost program to this context.

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

1. How has the sample of learners changed over time?
    - Are the learners who were able to be found at midline different than those who were not able to be found? If so, how?
    - Did the attrition rate differ between Literacy Boost and comparison learners?
2. Of the students who were able to be found at midline, how comparable are baseline background characteristics and reading skills among Literacy Boost learners versus comparison learners?
3. What can the midline assessment tell us about students' reading skills?
    - What does this mean for continuing Literacy Boost programming in this area, especially the upcoming implementation of the Literacy Boost Teacher Training component?
4. Did the Literacy Boost program exhibit impact on learners' reading skills?
    - For which types of learners was impact the greatest/least?
    - Does this impact result in more equitable outcomes for traditionally disadvantaged groups?
5. How does learners' development of reading skills over time vary by learner background and community literacy environment?
    - What does this mean for targeting Literacy Boost's various intervention components?

To investigate these questions, this report first describes the context and implementation history of Literacy Boost in Faryab and Saripul. Next, this report gives an overview of the research methods used; including sampling, measurement, and analysis. The report will then analyze the attrition of the sample over time and how intervention and comparison groups have or have not remained statistically similar. The report will then present results from impact analysis investigating the extent to which Literacy Boost appears to have improved learners' reading skills. After this, learners' endline scores for each of the reading skills will be analyzed to determine which skills learners have mastered and which require additional improvement. Finally, the report will investigate any correlations between baseline-endline reading skill development and student background or community literacy environment variables using multilevel regression analysis.

II. Context

Faryab Province is divided into 15 districts including the capital Maimana and has a population comprising mainly ethnic Uzbek and Tajik with some Pashtun and Turkmen communities. The land in the north, close to the border with Turkmenistan, is low-lying and flat while the southern-most districts are hilly and mountainous. The whole province is arid, semi-desert – very hot in summer and cold in winter, with spring floods as the snow melts. The overwhelming majority of families gain their livelihoods by irrigation farming, and most families also have some livestock, while in many parts of Faryab and Saripul, carpet and *gilim* (flat weaves) making is famous as well as a major source of family income.

Saripul Province is situated between the central highlands and the northern Turkmen plains, north of Faryab. It is a mountainous province especially in its southern part, and three quarters of the population of Saripul lives in rural districts while one quarter lives in urban areas. Dari (Persian) is the dominant language in the province and in the region, and Uzbeki the second most frequent language followed by Pashto, spoken in some villages. Saripul is also known in Afghanistan for producing a particular kind of hats, and for its grapes grown in the lower valleys. But due to the limited employment opportunities available locally, many families depend substantially on remittances from family members working in Iran, Saudi Arabia or other Gulf countries. Both Faryab and Saripul Provinces have limited asphalt roads and electricity in town areas.

III. Implementation History

The Literacy Boost program in Afghanistan began at the end of 2012 for the Faryab and Saripul provinces. Baseline data was collected in October 2012 for Faryab and between November and December in Saripul. Actual implementation started significantly earlier in Faryab (March 2013) than in Saripul (October 2013) with reading camps, classroom readjustment-for Faryab-, and teacher training. By October 2013 there were 71 reading camps and 41 classrooms readjusted in Faryab and 51 reading camps in Saripul. Complete details of implementation can be found on Tables 1 and 2.

Table 1. Implementation Timeline and Outputs. Faryab Province.

Date	Activity	Output
October 2012	**Baseline** 3rd grade students tested on literacy concepts	- 320 students assessed, 160 from 8 intervention schools and 160 from 8 control schools
March 2013	**Stakeholders Orientation** Literacy Boost Program orientation to introduce project to PED and DED representative and community elders	- One day orientation for PED representatives, 8 participants - One day orientation for two DED staff, School Management Teams, PTA members and community elders, 92 participants
March - July 2013	**Conducted community mobilization meetings (LB Shuras)** Continued efforts to mobilize community members through regular meetings to raise community awareness about LB program, their roles and responsibilities and how they can support implementation to help improve literacy in eight schools' catchment areas	- Continued meetings with community members – 120 community members participated (23 women, 97 men) - 96 participants from schools (24 head teachers, 40 teachers, 32 student)
March - July 2013	**Reading Camp Establishment and Facilitators training** - Identified place/location for running reading camps - Identified Volunteer Facilitators for reading camps - trained volunteers in facilitating camps for grades 3-4, supporting phonemic awareness, letter knowledge and vocabulary.	- 70 Reading camps were established in 8 schools' catchment areas - 124 volunteers trained to run camps - 1528 students enrolled to reading camps
August 2013	**Classrooms Readjustment** - All of the selected schools are furnished with tall desks and chairs which were not very child friendly for lower primary grades and difficult for teachers to practice active methods - Depending on availability of enough classrooms by coordination with MoE removed those desks and chairs and provided floor covering/carpet/Muket - Provided small tables for children to sit on the floor and work on the tables - The classrooms were designed putting the tables around the classroom and blackboards were installed around the classroom lower part of the wall for children to sit and practice writing - Kits of stationeries were provided for the classes to use	- 41 classrooms were readjusted/designed and kits were provided
September - October 2013	**Teacher training** Teachers trained on reading skill, letter knowledge, phonemic awareness and reading fluency. The training package was not exactly the same TT package from LB program as it was under translation. This was another version developed by staff using other resources earlier.	- 3 day training in one go -120 teachers
2013	**Monitoring** SCI staff conduct monitoring of teachers performance from Literacy Boost program schools and Reading Camps	- 120 teachers observed - 70 Reading Camps were monitored
November 2013	**Endline assessment** 4th grade students tested on literacy concepts in 8 intervention and 8 comparison schools	-313 students tested (the same students assessed during baseline), 159 students from 8 intervention schools and 154 students from 8 comparison schools

Table 2. Implementation Timeline and Outputs. Saripul Province.

Date	Activity	Output
November –Dec 2012	**Baseline** 3rd grade students assessed on literacy concepts	- 280 students assessed, 140 from 7 intervention schools and 140 from 7 control schools
December 2012	**Stakeholders Orientation Workshop** Literacy Boost Program orientation workshop with MoE to introduce program to them and get their support	- 1 day orientation workshop - 18 participants which included representatives from Provincial Governor's Office, District Governor's Office, Provincial and District Education directors, School Headmasters
April - July 2013	**Conducted community mobilization meetings** Continued efforts to mobilize community members through regular meetings to raise community awareness about this program, their roles and responsibilities and how they can support implementation to help improve literacy	- Meetings conducted in seven Literacy Boost schools' catchment areas - 115 community members attended
October – November 2013	**Teacher training** Trained teachers in the seven Literacy Boost program intervention schools. The training package was not exactly the same TT package from LB program as it was under translation. This was another version developed by staff using other resources earlier which focused on reading skills, letter knowledge, phonemic awareness and reading fluency.	- 3 day training in one go -38 teachers and 2 principals participated
October 2013	**Establishing Reading Camps and Training Facilitators** Facilitators trained in facilitating reading camps for grades 3-4 and supporting phonemic awareness, letter knowledge and vocabulary.	- 51 Reading Camps (21 for boys and 30 for girls) - 2 day training - 104 volunteer facilitators
October - November 2013	**Monitoring** SCI staff conduct monitoring of teachers' performance from Literacy Boost program schools and Reading Camps	- 38 teachers - 51 Reading Camps
November 2013	**Endline assessment** 4th grade students tested on literacy concepts	- 280 students assessed, 140 from 7 intervention schools and 140 from 7 control schools

IV. Methods

IV.1. Sampling

The sample for the baseline assessment encompassed 600 grade 3 learners, divided between 15 schools set to receive the Literacy Boost intervention (n of learners = 300) and 15 comparison schools (n of learners = 300). From the schools selected 50% of them are girls and 50% are boys (7 boys schools, 7 girls schools, 1 mixed school) for each of the intervention and comparison areas. These schools in intervention and comparison sites are selected from the villages based on similarities between these two groups, including equal numbers of schools where the children speak either of Dari, Pashtu and Uzbek languages in both of intervention and comparison sites. Even so, the comparison schools in Faryab Province are closer to the capitol Maimana with better access to the city with better road condition and exposure to more reading materials in capital Maimana.

Save the Children doesn't program in the comparison schools, but in the program schools we have also methodology trainings for teachers, provision of teaching and learning materials, Reading Buddy training, etc which will now come under Literacy Boost as there are similarities. Also we have ECCD and SHN programs in the Literacy Boost program schools, Recently Save the Children started programming in some of the comparison schools a one year long SZOP (Schools as Zone of Peace) project which includes establishing and training PTAs and Student Councils, Positive Disciplinary Training for teachers, Disaster Risk Reduction training, developing Codes of Conduct, etc., but with no specific focus on literacy and numeracy.

At each of the Literacy Boost and comparison schools where data was collected, 20 children in grade 3 were sampled. If there was more than one section of grade 3 at a given school, one section was randomly selected. In Faryab Province, the schools are equally divided between eight boys' and eight girls' schools. In Saripul, there are six boys schools and eight girls schools and one mixed school. Thus, the school samples are either 20 boys or 20 girls with one mixed school exception of 10 boys and 10 girls. As a result, there are 290 boys and 310 girls in the sample, and the Literacy Boost sample is 53 percent female and the comparison sample is 50 percent female.

IV.2. Measurement

For the student assessment, all learners in the sample were asked about their background (age, household possessions, household building and reading materials). Learners also were 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).

After collecting this background data, all learners were also given a literacy test composed of six components administered through five sub-tests: concepts about print, letter awareness, single word recognition (reading of most used words), reading fluency & 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 & 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). All instructions were given in the learners' home language while the tools were in Dari which is the school language of all selected schools. Table 3 shows the assessment instruments used.

Table 3. 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
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 have someone read to them

Community Reading Activities	
Participation in community reading activities	Participation in reading buddy, community reading and book bank activities.
Reading Outcome	**Description**
Concepts about Print	Familiarity with books (e.g. cover, direction of text); 14 items
Alphabet knowledge	Number of letters/sounds known of 71
Fluency	Number of words in a connected text read correctly in a minute
Accuracy	Percentage of words in a connected text read correctly
Comprehension	Four comprehension questions answered correctly after reading a text aloud

V. Student Descriptive Statistics

V.1. Presence at Endline

Out of the 600 students who were surveyed in the baseline assessment, 567 were present at endline. The 33 students missing belonged to 14 different schools and included:
7 students missing from the same school (Panje Qala Mix) and 3 from each of four schools. In the rest of schools where students were missing it was not in bigger quantities than one or two students. The following is the breakdown between the students missing in each of the provinces for which we know the reasons for their absence.
Saripul Province:

- 7 students from Panji Qala Mixed School have permanently moved to another province

Faryab Province:

- 2 students were absent participating in a wedding party
- 2 students were sick and absent on the assessment day
- 3 students were absent on the assessment day because flooding had closed the road to school on that day

After taking out the students not present at endline, the remaining database contains 287 students at literacy boost and 280 and 280 students at comparison schools. A multilevel regression analysis controlling for socioeconomic and home literacy variables shows that attrition seems to be random and not significantly related to any of the variables collected.

V.2. Student Background Characteristics

At endline, students were 10 years old on average, 51% were female, and 50% spoke Dari at home. Also, the vast majority of them (97%) lived in a house with a wooden beam with thatch roof and mud or clay walls (89%). In terms of assets, TV is the most common, with 58% of kids having one at home.

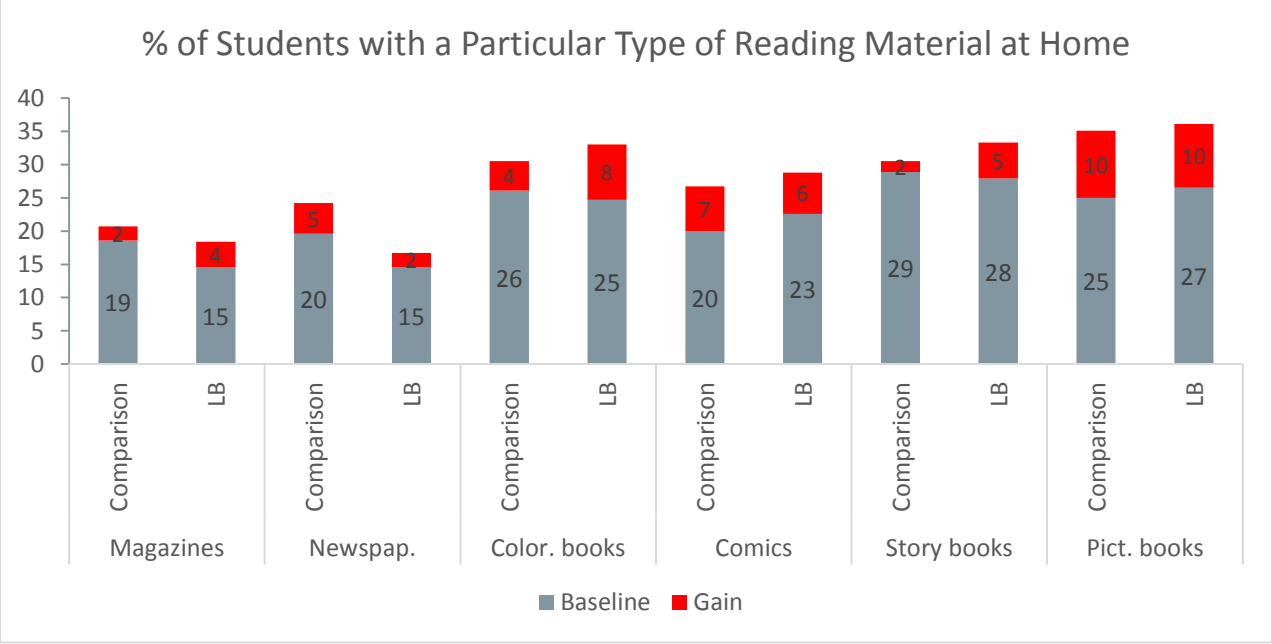
In terms of comparability between Literacy Boost and comparison students, statistically significant differences were found on bike ownership (owned by 26% of comparison vs. 40% of Literacy Boost students), and whether the child attended ECD (3% in comparison vs. 23% in Literacy Boost students). While ECD was statistically different amongst groups at baseline, the difference in bike ownership can be attributed to attrition. *When conducting impact analysis it is important to take the variables in which the groups are different and control for them.* All other characteristics were equal amongst groups.
Further details and the comparability of all other variables between Literacy Boost and comparison students can be found on Appendix A.

V.3. 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' HLE begins and how it changes over time.

Figure 1a presents the gains of reading materials at home and figure 1b the gains in reading habits. Both figures are for those students present at endline for Literacy Boost and Comparison students.

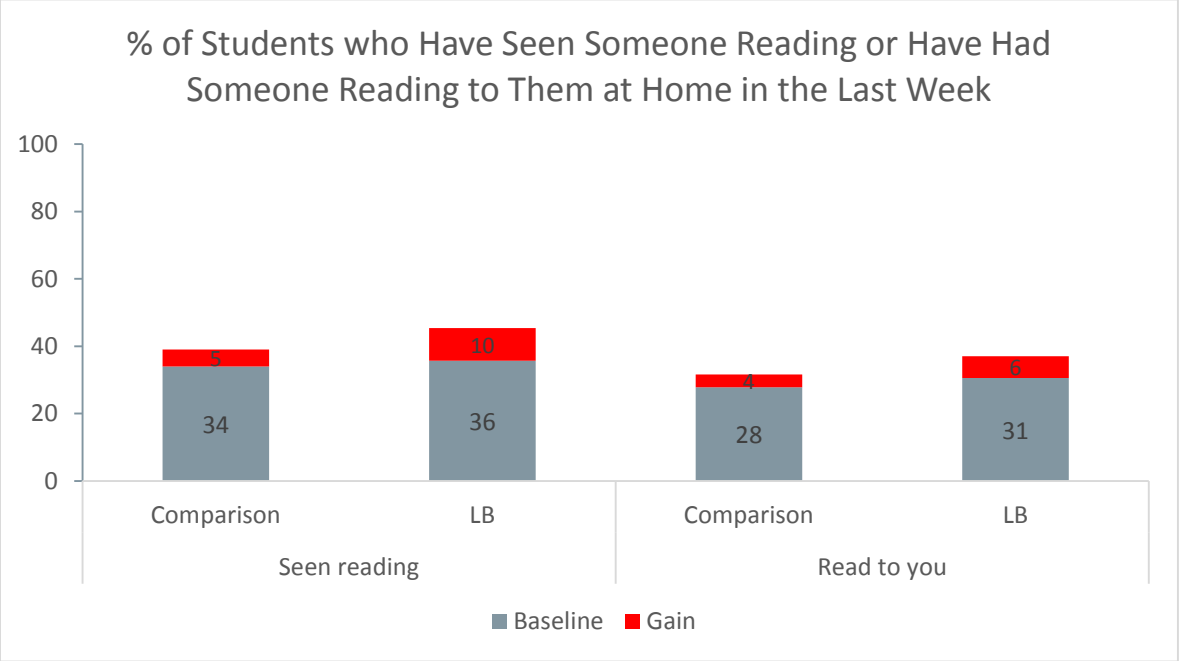
Figure 1a. Home Literacy Environment. Reading Materials



At endline, almost all students had some type of reading material at home, textbooks and religious books being the most popular in the households with more than 95% students owning

them. Nevertheless, only somewhat over 30% of students had storybooks or had seen someone reading or someone that had recently read to them at home. From baseline to endline, reading materials and exposure increased somewhat more for LB than for comparison school students but this difference is not statistically significant. **Literacy boost should continue to focus on enhancing the amount of child-friendly reading materials in the home of earners.**

Figure 1b. Home Literacy Environment. Reading Habits



VI. Endline Results

In this section we examine average and gain scores in each literacy skill area to assess the impact of Literacy Boost on student learning outcomes. Table 4 provides a summary of baseline, endline and gain scores on each subtest for all students present at baseline and endline. Significance tests use clustered standard errors to account for the grouping of students within schools.

Table 4. Baseline, Endline and Gains in Literacy skill scores by Intervention Groups

Variable	Sample Group	Baseline Score	Endline Score	Change from Baseline to Endline	Sig. Diff. in Change between Groups
Concepts about Print (%)	Comparison	78.5	87.5	9.0	-
	LB	77.8	85.8	8.0	
Letters (%)	Comparison	66.0	84.2	18.2	-
	LB	68.7	83.0	14.3	
MUW (%)	Comparison	46.9	72.7	25.8	-
	LB	48.3	70.5	22.2	
Fluency (wcpm)	Comparison	8.6	22.8	14.2	-
	LB	7.9	25.8	17.9	
	LB - readers	25.3	42.9		
	LB - nonreaders [a]		18.1		
Accuracy (%)	Comparison	21.0	42.3	21.3	-
	LB	21.6	49.4	27.8	
	LB- readers	68.3	72.6		
	LB - nonreaders [a]		38.8		
Reading Comprehension (%)	Comparison	64.8	78.6	13.8	-
	LB	62.7	82.5	19.8	
Listening Comprehension (%)	Comparison	35.6	57.5	21.9	-
	LB	40.4	56.9	16.5	

a. Non-readers at baseline defined as those students that were not able to read the text given to them

Table 5 presents the endline scores with their corresponding benchmarks set at baseline. Benchmarks were met for four of them: readers and non-readers fluency, non-readers accuracy and reading comprehension.

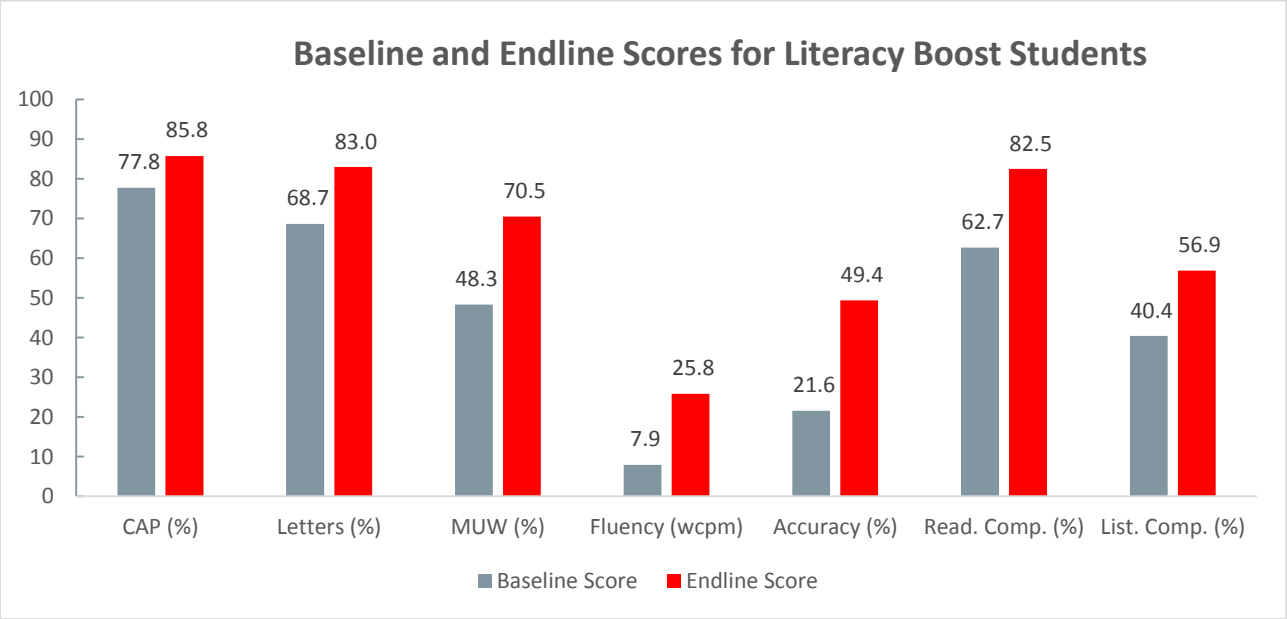
Table 5. Endline Scores and Benchmarks set at Baseline

Variable	Sample Group (within LB)	Endline Score	Baseline Benchmark	Met / Not Met
Concepts about Print (%)	All	85.8	100	Not Met
Letters (%)	All	83.0	100	Not Met
MUW (%)	All	70.5	90	Not Met
Fluency (wcpm)	All	25.8		
	Readers	42.9	43	Met
	Non-readers	18.1	5	Met
Accuracy (%)	All	49.4		
	Readers	72.6	94	Not Met
	Non-readers	38.8	18	Met
Reading Comprehension (%)	All	82.5	75	Met
Listening Comprehension (%)	All	56.9	75	Not Met

VI.1. Program Impact of Literacy Boost

At the moment that the endline was collected, Literacy Boost students made greater gains than comparison students in the majority of basic and advanced literacy skills (for baseline and endline scores of LB students refer to Figure 2). However, the difference in their gains is not statistically significant. **A main driver for the lack of a statistical significant difference in gains can be the fact that LB activities were implemented later in the year for Saripul province so the program has not had enough time to show its real impact.**

Figure 2. Baseline and Endline Scores for LB Students



VI.2. Individual Skill Analysis

This section analyses the endline results of students from Literacy Boost schools. There was no statistical significant difference between the average endline results between Literacy Boost and comparison school students.

VI.2.A. Concepts about Print

LB students made a significant progress between baseline and endline results in CAP. At baseline students recognized 78% of the structural components of books and by endline students recognized 86% of these components. **Continued exposure to printed materials will increase children's comfort with and knowledge about books. As most students are reaching mastery of this skill, programmatic efforts can begin to focus on more advanced skills.**

VI.2.B. Letter Awareness

Letter identification is a skill in which LB students made good progress. At baseline, students recognized 69% percent of letters (49 out of 71 letters) presented to them and by endline students correctly identified 83 percent of letters (59 out of 71 letters). **As most students are reaching mastery of this skill, programmatic efforts can begin to focus on more advanced skills. However, any students appearing to struggle with letter identification should be given additional attention as soon as possible so as not to fall behind their peers.**

VI.2.C. Fluency and Accuracy

Fluency is measured by the number of words students read correctly in one minute from the reading passage presented to students. At baseline LB students could read on average 8 words per minute. By endline, this result had increased to 26 words per minute, increasing in more than three times from baseline.

Accuracy is measured by the percent of words read correctly out of the total reading passage. At baseline, LB students' accuracy was 22% and by endline it had increased to more than double, 50%.

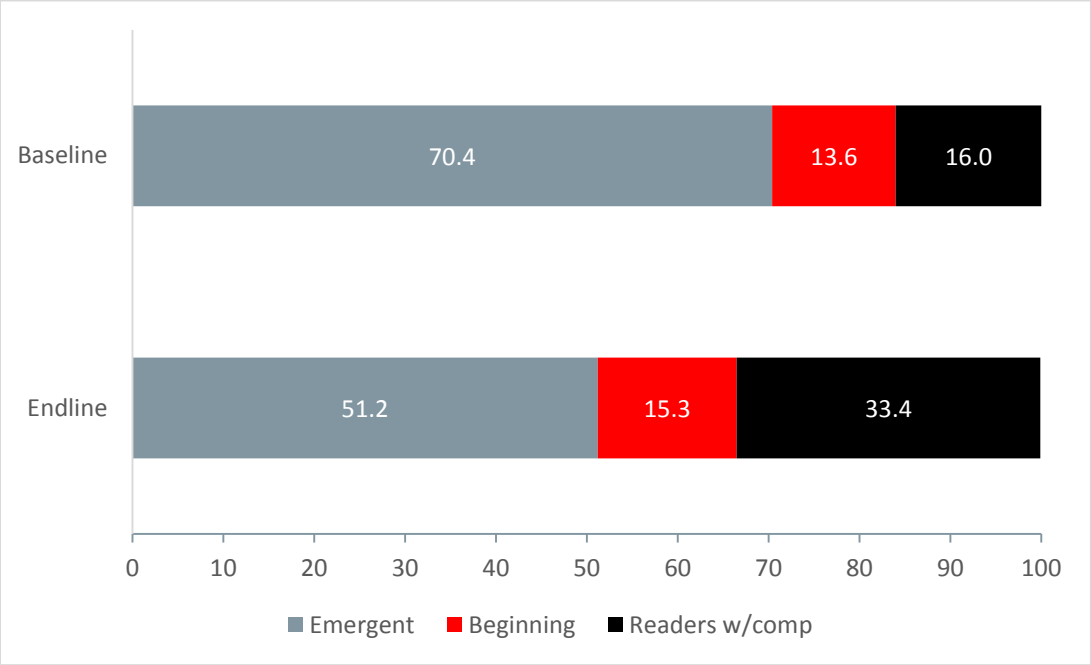
Taken together, fluency and accuracy show that students are making strong gains in advanced skills. However, there is still a big road ahead for students to master these skills. Techniques that help doing so is practice reading aloud in small and large groups.

VI.2.D. Comprehension

Students were given a passage in Dari followed by four comprehension questions. Students were asked to read aloud, and those who could not read a single word were read the passage by the assessor. Within LB students, those who read the passage by themselves (153) - were stronger in comprehension skills answering 83% of questions correct. In contrast, those read the passage by the assessor (134) answered correctly only 57% of comprehension questions, highlighting the importance of getting children to a level where read by themselves. **Enabling children to read with comprehension is the ultimate goal of the Literacy Boost program and should be the main focus of in and out of school activities going forward. As the program moves forward, one of its main goals should be to move those almost 50% children that could not read the passage by themselves to active readers.**

A further measure of children's reading skills is to classify them into emergent, beginning, and reading with comprehension tiers (see Figure 3). Afghanistan has made great progress in this respect. At baseline, 70.4% of LB learners were emergent readers and 16.0% were readers with comprehension. By endline 51.2% of learners were classified as emergent readers and 33.4% were readers with comprehension.

Figure 3. Literacy Boost Learners by Reading Tiers. Baseline and Endline (%).



Note: Emergent Readers correctly answer less than 40 percent of the comprehension questions; Beginning readers correctly answer between 40 and 80 percent of the questions correctly; Readers with Comprehension correctly answer more that 80 percent of the comprehension questions. Tier cut-offs were set in combination with associated fluency and accuracy levels.

VII. Learning Equity and Struggling Students

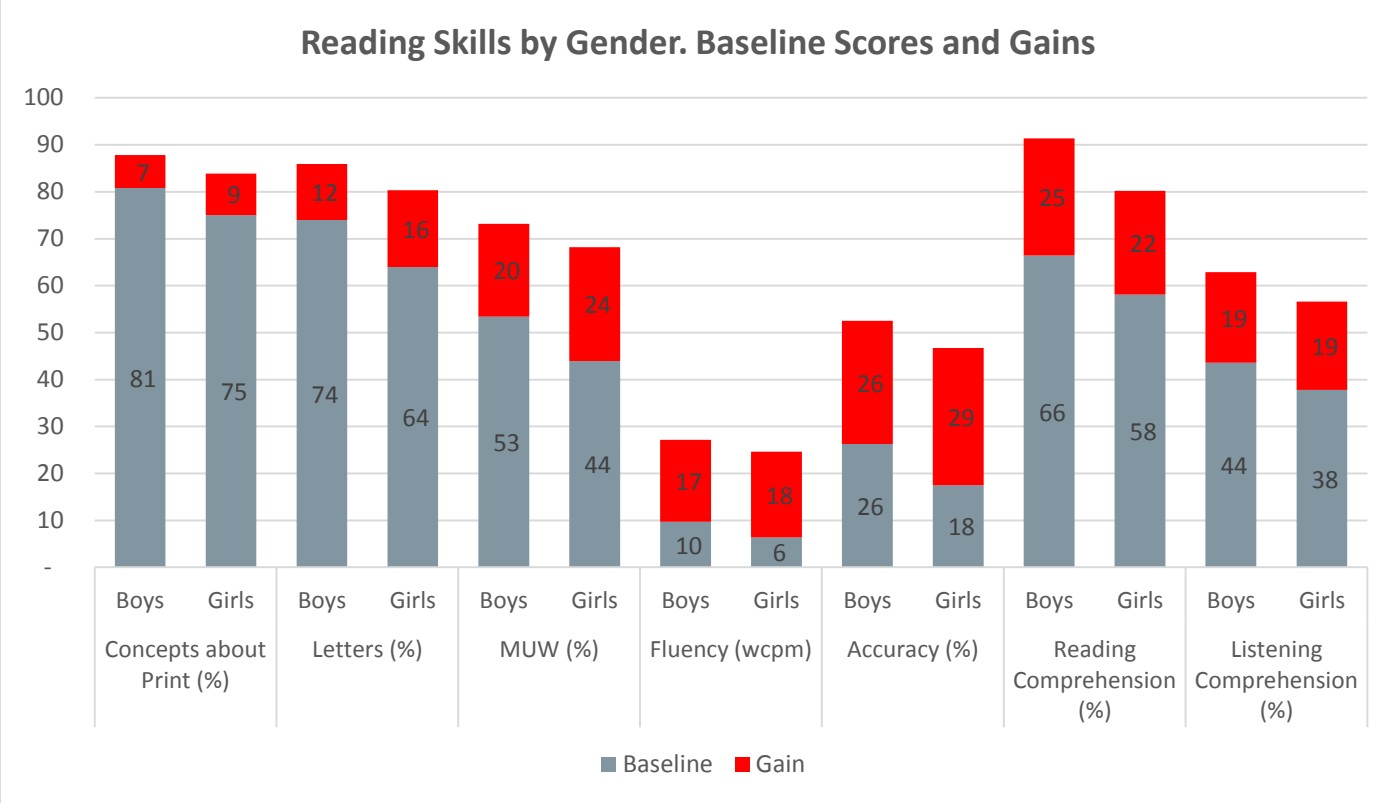
This section analyzes the factors that relate to to higher endline reading skills and higher gains in reading skills for the group of Literacy Boost students. Specifically, we investigate whether baseline reading skills and reading skill gains differ for traditionally disadvantaged groups, such as girls, the poorest of the poor, the HLE-deprived, and children without previous ECD experience. We also investigate whether students who struggled at baseline improved their test scores differently than other students, and whether struggling students share certain demographic characteristics. To conduct this analysis, baseline and endline data were used to construct indices to place children into quintiles of socio-economic status (SES) and HLE. Multivariate regression models were used to estimate the correlation between reading skills outcomes and these measures of equity.

VII.1. Girls

Results between girls and boys in Literacy Boost schools that were present at baseline and endline are not statistically different. These results include concepts about print, letters, fluency, accuracy, reading comprehension, and listening comprehension. **Literacy Boost has not**

benefitted one gender disproportionately. Figure 3 presents results disaggregated by gender with the corresponding gain for each set of students.

Figure 4. Reading Skills by Gender for LB Students



VII.2. Home Literacy Environment

Home Literacy Environment is significantly related to lower gains and lower endline scores for some skills when controlling for students' baseline result, background characteristics, and socioeconomic level (see Appendix C2 for details on the multivariate regressions). Specifically, having a lower Home Literacy Environment predicts a lower gain and endline results in concepts about print. **Literacy Boost should continue to encourage the provision of print materials in the home and reading activities with family and community members.**

VII.3. ECD Attendance

Early education predicts higher gains for LB students in concepts about print, most used words, and fluency-words correct per minute- (see Appendix C3 for the corresponding multivariate regression). **Literacy Boost should make a special effort with students that have not attended early education as they will need more help in making gains.**

VII.4. Struggling Students

Finally, we investigate the characteristics and gains of struggling students, defined as those students who scored in the bottom two quintiles on the letter identification component of the assessment at baseline (see Appendix C4 for the corresponding multivariate regressions). Younger students, those who did not attend an early education program, and those in a lower home literacy environment quintile are more likely to struggle on this subcomponent of the test.

Also, these students have the lower gains in all subcomponents of the assessment with the exception of letters, which means that they are far from catching up from their more skill-advantaged peers. **Literacy Boost should continue to provide enough support to struggling students so that they can make larger gains than their peers not only in letters but also in the other subtests.**

VIII. Conclusion

After one year of Literacy Boost programming in Faryal and Saripul provinces in Afghanistan, Literacy Boost learners have shown gains in Home Literacy Environment, and all basic and advanced skills. However, these gains are no different to those of comparison schools, probably because the timeline of implementation of several activities was a few months (and for some activities even less time) before the endline data collection.

The largest gains for Literacy Boost students are seen in most used words, fluency, and accuracy. Out of these dimensions, benchmarks were met for fluency of readers and non-readers, accuracy of non-readers, and were not met for most used words despite the large increase.

Despite gains being no different between Literacy Boost and Comparison, the results continue to highlight the importance of an appropriate Home Literacy Environment for learners. Struggling students are more likely to come from poorer Home Literacy Environments, be younger and have to not have attended early education. Furthermore, those students in the lowest Home Literacy Environment quintiles have lower endline results and gains in concepts about print and are more likely to be struggling students. Literacy Boost should continue to encourage the provision of print materials in the home and reading activities with family and community members.

Appendix A. Student Background Characteristics by Sample Group

	Comparison N= 285	Literacy Boost N=288	Statistically Significant Difference
General			
Home Language (%)			
Dari	46.7	59.4	-
Pashto	3.2	0.4	-
Uzbek	50.2	40.3	-
Female	50.9	52.8	-
Age (yrs)	10.3	10.2	-
Attended ECD (%)	2.8	22.6	***
Repeated grade 1 (%)	15.8	15.6	-
Repeated grade 2 (%)	16.1	11.1	-
Repeated grade 3 (%)	16.8	11.8	-
Household members at school (%)	24.0	25.6	-
SES (%)			
Wooden beam with thatch roof	97.5	97.2	-
Mud/Clay walls	86.0	91.7	-
Radio	50.5	51.4	-
Electricity	94.7	91.7	-
Toys	27.7	35.4	-
Bike	26.3	39.9	**
Motorcycle	42.5	47.2	-
TV	63.9	54.5	-
Number of household members	5.8	5.9	-

* 10%, **5%, ***1%, - not statistically different

Appendix B: Home Literacy Environment by Sample Group

	Baseline			Endline			Gain		
	Comparison N= 285	**Literacy Boost N=288**	**Sig. diff.**	**Comparison N= 285**	**Literacy Boost N=288**	**Sig. diff.**	**Comparison N= 300**	**Literacy Boost N=300**	**Stat. Sig. diff.**
Reading Materials									
Textbooks	94.6	97.6	-	95.8	99	-	1.2	1.4	-
Religious books	98.9	99.3	-	98.9	99.3	-	0.0	0.0	-
Magazines	18.6	14.6	-	20.7	18.4	-	2.1	3.8	-
Newspapers	19.6	14.6	-	24.2	16.7	-	4.6	2.1	-
Coloring books	26.1	24.7	-	30.5	33	-	4.4	8.3	-
Comics	20.0	22.6	-	26.7	28.8	-	6.7	6.2	-
Story books	28.9	27.9	-	30.5	33.3	-	1.6	5.4	-
Picture books	25.0	26.5	-	35.1	36.1	-	10.1	9.6	-
Literacy Exposure									
Seen reading	34.0	35.7	-	39.0	45.4	-	5.0	9.7	-
Read to you	27.8	30.6	-	31.6	37	-	3.8	6.4	-

Appendix C. Regression Models

C1. Relation Between a Lower Socio-Economic Status and Gains, LB students

VARIABLES	CAP Gain	Letters Gain	MUW Gain	Fluency Gain	Reading Comp. Gain	List. Comp. Gain
Lowest Socioeconomic quintiles	-0.0307	0.0165	-0.0110	-0.469	-0.0351	-0.132*
	(0.0180)	(0.0236)	(0.0330)	(2.231)	(0.0411)	(0.0588)
% CAP at baseline	-0.698***					
	(0.101)					
Female	-0.0210	-0.0158	-0.0120	1.364	-0.0367	-0.0826
	(0.0421)	(0.0404)	(0.0518)	(5.873)	(0.0574)	(0.0550)
Age at endline	0.0282*	0.0146	0.0483**	3.040~	0.00735	0.0616~
	(0.0115)	(0.0131)	(0.0144)	(1.504)	(0.00784)	(0.0301)
Household members at endline	0.00425	0.0130	0.0156*	-0.125	-0.00439	0.0414*
	(0.00751)	(0.00835)	(0.00714)	(0.696)	(0.0118)	(0.0147)
Attended ECD	0.0493*	0.0451	0.124**	9.516*	0.0117	0.0916
	(0.0206)	(0.0377)	(0.0379)	(3.318)	(0.0632)	(0.0726)
% Total letters at baseline		-0.535***				
		(0.0609)				
% Most used words at baseline			-0.565***			
			(0.0595)			
Total words correct per minute at baseline				0.0464		
				(0.122)		
% Read comp at baseline					-0.849***	
					(0.110)	
% Listening comp at baseline						-1.041***
						(0.113)
Constant	0.326~	0.273	-0.107	-15.42	0.768***	-0.179
	(0.158)	(0.197)	(0.215)	(14.37)	(0.139)	(0.297)
Observations	287	287	287	287	61	126
R-squared	0.405	0.425	0.418	0.037	0.688	0.521

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ~ p<0.1

C2. Relation Between a Lower Home Literacy Environment, Gains and Endline Results, LB students

VARIABLES	% CAP at endline	% Total letters at endline	% Most used words at endline	Total words correct per minute at endline	% of words read correctly regardless of time	% Read comp at endline	% Listening comp at endline
Low Home Literacy Environment at endline	-0.0864~	-0.0778	-0.0953	-4.822	-0.0227	-0.0567	-0.0933
	(0.0431)	(0.0662)	(0.0771)	(4.452)	(0.0699)	(0.0432)	(0.0713)
Female	-0.0337	-0.0545	-0.0479	-1.539	-0.0512	-0.00664	-0.0740
	(0.0389)	(0.0528)	(0.0664)	(6.508)	(0.0959)	(0.0655)	(0.0550)
Age at endline	0.0301*	0.0347~	0.0594**	3.486*	0.0617*	-0.0110	0.0586*
	(0.0124)	(0.0168)	(0.0189)	(1.387)	(0.0228)	(0.0181)	(0.0265)
Household members at endline	0.00113	0.0106	0.0148*	0.0243	0.00323	-0.0101	0.0390*
	(0.00572)	(0.00610)	(0.00667)	(0.846)	(0.0147)	(0.0114)	(0.0143)
Attended ECD	0.0589**	0.103*	0.164***	11.10*	0.185**	0.0214	0.0595
	(0.0175)	(0.0349)	(0.0387)	(4.257)	(0.0567)	(0.0439)	(0.0709)
SES quintiles at endline	0.00907	0.00264	0.00758	1.330	0.0187	0.00860	0.0354
	(0.00798)	(0.00949)	(0.0114)	(1.739)	(0.0213)	(0.0160)	(0.0207)
Constant	0.559**	0.441~	0.0157	-12.98	-0.209	1.011***	-0.260
	(0.145)	(0.222)	(0.229)	(16.48)	(0.265)	(0.168)	(0.285)
Observations	286	286	286	286	286	152	134
R-squared	0.117	0.097	0.136	0.047	0.065	0.025	0.166

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ~ p<0.1

VARIABLES	CAP Gain	Letters Gain	MUW Gain	Fluency Gain	Reading Comp. Gain	List. Comp. Gain
Low Home Literacy Environment at endline	-0.0751~	-0.0301	-0.0802	-4.404	0.0168	-0.109
	(0.0397)	(0.0501)	(0.0617)	(3.699)	(0.0657)	(0.0782)
% CAP at baseline	-0.706***					
	(0.0949)					
Female	-0.0211	-0.0190	-0.0147	1.363	-0.0434	-0.0886
	(0.0394)	(0.0392)	(0.0489)	(5.989)	(0.0620)	(0.0604)
Age at endline	0.0240*	0.0132	0.0439**	2.780~	0.00937	0.0500
	(0.0106)	(0.0118)	(0.0116)	(1.438)	(0.00837)	(0.0289)
Household members at endline	0.00189	0.0138~	0.0144*	-0.254	-0.00288	0.0373*
	(0.00686)	(0.00649)	(0.00588)	(0.702)	(0.0145)	(0.0147)
Attended ECD	0.0349*	0.0407	0.110**	8.698*	0.00634	0.0639
	(0.0158)	(0.0337)	(0.0325)	(3.078)	(0.0622)	(0.0722)
SES quintiles at endline	0.00200	-0.00974	-0.00634	-0.411	0.0179	0.0349
	(0.00694)	(0.00693)	(0.00852)	(0.995)	(0.0129)	(0.0223)
% Total letters at baseline		-0.530***				
		(0.0593)				
% Most used words at baseline			-0.562***			
			(0.0583)			
Total words correct per minute at baseline				0.0475		
				(0.121)		
% Read comp at baseline					-0.854***	
					(0.106)	
% Listening comp at baseline						-1.056***
						(0.108)
Constant	0.400*	0.324~	-0.0135	-9.419	0.675**	-0.137
	(0.137)	(0.155)	(0.154)	(13.04)	(0.160)	(0.298)
Observations	286	286	286	286	61	126
R-squared	0.423	0.423	0.429	0.042	0.689	0.527

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ~ p<0.1

C3. Relation Between ECD Attendance and Gains, LB students

VARIABLES	CAP Gain	Letters Gain	MUW Gain	Fluency Gain	Reading Comp. Gain	List. Comp. Gain
Attended ECD	0.0473*	0.0460	0.124**	9.482*	0.00465	0.0860
	(0.0193)	(0.0382)	(0.0377)	(3.314)	(0.0600)	(0.0752)
% CAP at baseline	-0.696***					
	(0.100)					
Female	-0.0216	-0.0159	-0.0128	1.319	-0.0391	-0.0795
	(0.0422)	(0.0406)	(0.0521)	(5.938)	(0.0542)	(0.0568)
Age at endline	0.0280*	0.0145	0.0481**	3.031~	0.00843	0.0590~
	(0.0114)	(0.0132)	(0.0142)	(1.496)	(0.00820)	(0.0291)
Household members at endline	0.00427	0.0131	0.0157*	-0.121	-0.00395	0.0424*
	(0.00745)	(0.00837)	(0.00710)	(0.688)	(0.0118)	(0.0151)
SES quintiles at endline	0.00910	-0.00669	0.00156	0.0220	0.0158	0.0438*
	(0.00631)	(0.00669)	(0.00929)	(0.892)	(0.0153)	(0.0190)
% Total letters at baseline		-0.535***				
		(0.0611)				
% Most used words at baseline			-0.564***			
			(0.0599)			
Total words correct per minute at baseline				0.0479		
				(0.121)		
% Read comp at baseline					-0.854***	
					(0.107)	
% Listening comp at baseline						-1.040***
						(0.109)
Constant	0.288	0.298	-0.115	-15.65	0.702***	-0.339
	(0.167)	(0.201)	(0.229)	(14.75)	(0.143)	(0.284)
Observations	287	287	287	287	61	126
R-squared	0.404	0.425	0.417	0.037	0.689	0.517

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ~ p<0.1

C4. Characteristics of Struggling Students and their Gains

VARIABLES	Struggling Students
Female	0.0921
	(0.0826)
Age at endline	-0.0709**
	(0.0201)
Household members at endline	0.00867
	(0.0150)
Attended ECD	-0.182***
	(0.0387)
SES quintiles at endline	-0.00783
	(0.0192)
HLE quintiles at endline	-0.0499~
	(0.0242)
Constant	1.212***
	(0.233)
Observations	286
R-squared	0.097

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ~ p<0.1

VARIABLES	CAP Gain	Letters Gain	MUW Gain	Fluency Gain	Reading Comp. Gain	List. Comp. Gain
Struggling Students	-0.149***	0.126**	-0.188**	-14.74***		-0.0734
	(0.0257)	(0.0410)	(0.0486)	(3.345)		(0.0540)
% CAP at baseline	-0.867***					
	(0.0813)					
Female	-0.0157	-0.0190	-0.0113	2.336	-0.0447	-0.0761
	(0.0376)	(0.0400)	(0.0479)	(5.957)	(0.0567)	(0.0589)
Age at endline	0.0173	0.0158	0.0370**	1.787	0.0101	0.0532~
	(0.0100)	(0.0116)	(0.0114)	(1.224)	(0.00685)	(0.0275)
Household members at endline	0.000264	0.0148*	0.0137~	-0.305	0.000292	0.0389*
	(0.00627)	(0.00604)	(0.00662)	(0.608)	(0.0167)	(0.0150)
Attended ECD	0.0245	0.0454	0.0996*	6.341~	0.00798	0.0643
	(0.0196)	(0.0335)	(0.0343)	(3.253)	(0.0632)	(0.0822)
SES quintiles at endline	0.00341	-0.0110	-0.00376	-0.516	0.0226	0.0399~
	(0.00737)	(0.00693)	(0.00832)	(1.166)	(0.0137)	(0.0223)
HLE quintiles at endline	0.0190	0.00430	0.0177	1.030	-0.0165	0.0158
	(0.0128)	(0.0157)	(0.0192)	(1.530)	(0.0261)	(0.0247)
% Total letters at baseline		-0.368**				
		(0.0960)				
% Most used words at baseline			-0.723***			
			(0.0617)			
Total words correct per minute at baseline				-0.0696		
				(0.144)		
% Read comp at baseline					-0.852***	
					(0.106)	
% Listening comp at baseline						-1.078***
						(0.106)
Constant	0.568**	0.109	0.118	2.887	0.693***	-0.235
	(0.145)	(0.191)	(0.191)	(13.82)	(0.137)	(0.247)
Observations	286	286	286	286	61	126
R-squared	0.477	0.429	0.454	0.096	0.692	0.524

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, ~ p<0.1