



# Literacy Boost

# Sri Lanka

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## **Executive Summary**

This report examines the results of a learner background survey and reading assessment conducted from January to February in 2013 as part of the USAID All Children Reading Grand Challenge. It also includes a section on slow learner learning challenges.

The sample for this baseline assessment encompasses 640 grade 2 learners, divided between 15 schools set to receive the Literacy Boost intervention (n of learners = 315) and 15 comparison schools (N of learners = 325). Students' reading skills were assessed via a one-on-one reading assessment measuring discrete reading sub-skills, such as fluency, accuracy, and comprehension. Further data was collected on a sub-sample of students identified as slow learners via a teacher interview. In general, in terms of reading skills, it was found that Literacy Boost and comparison students scored statistically equivalent.

Slow learners were found to lag somewhat behind their non-slow peers in foundational reading skills. During implementation, Literacy Boost should make sure that all learners have access to books and activities that enforce the learning of the foundational skills of letter identification and single word reading, as well as providing access to books for all learners, particularly those that struggle the most to read.

Using the 75th percentile, this report establishes benchmarks with which to measure the progress of students at endline. For many skills, this benchmark is set high, at 98 percent. The goal for Literacy Boost is to have all students, whether slow learners or not, to be reading at benchmark levels by the end of the school year.

It was found the Literacy Boost students who could not read independently and who hence answered listening comprehension questions significantly lagged behind their comparison peers in terms of listening comprehension. An emphasis should be placed on oral story reading and engaging learners in thoughtful questions (prediction, opinion, summarization) before, during, and after a story is read. This should occur throughout Literacy Boost, including in the classroom with the teacher and outside the classroom with Reading Buddies, in Reading Camps, and in the home.

A consistent gap was observed between the boys and girls of the sample, with the girls significantly outscoring the boys on nearly every sub-skill measured. As Literacy Boost is implemented, the participating schools and communities should be made aware of this difference that favors the girls. A critical examination of the factors that feed into this, including access to reading materials, the amount of work that each sex may differentially do, and others should be examined and discussed, with the aim of helping boys close the gap with the girls and achieve equitable outcomes.

Lastly, a significant portion of “slow learners” are struggling in areas that are indicative of language processing disorders. The Literacy Boost training model will help teachers to break down reading tasks into very concrete steps, while the SNAP tools and reference sheets will guide them in adapting their teaching styles to better reach children with these types of difficulties.

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## **1 Introduction**

This report examines the results of a learner background survey and reading assessment conducted from January to February in 2013 as part of the USAID All Children Reading Grand Challenge. It also includes a section on slow learner learning challenges.

### **1.1 Overview**

The survey and reading assessment covered 487 grade 2 learners throughout 30 schools that belong to the Minuwangoda Zonal Education Office in Gampaha District, Western Province. The 30 schools are split into 15 primary schools designated to receive Save the Children's (SC) Literacy Boost program, and 15 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 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 2 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 the following:

1. How comparable are learners in Literacy Boost schools versus comparison schools in terms of reading skills, background characteristics, home literacy environment, and school environment?
2. What can the baseline tell us about learners' emergent reading skills? What does this mean for Literacy Boost programming?
3. 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?

In addition to the normal Literacy Boost assessment wherein approximately 20 students are sampled from 1 classroom, another sample of students who are deemed "slow learners" was sampled. The classification system of "slow learner" was one already used by teachers in assessing/evaluating students. Save the children provided teachers with a narrower definition by which to identify up to 6 slow learners per classroom. That definition was "a child who has trouble identifying letters and/or who cannot count up to 20". For exact sample numbers, see section 2.2, below.

To investigate the questions above, 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 scores of both the regular sample and the purposively selected sample of slow learners from 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 & environment variables using multilevel regression analysis.

## **1.2 Context**

Gampaha District is located approximately 35km north of the greater Colombo area and Minuwangoda is one of the 4 education zones that belong to Gampaha District. Though there exist some small Tamil and Muslim communities in the project area, the vast majority are Sinhala speaking children. Because of the nature of semi-urban setting, socio-economic status of the people residing in this district is generally better than those residing in rural areas. According to the Primary Director of Ministry of Education, the district's average score of the Grade 5 scholarship examination, an annual nation-wide examination carried out at the end of the primary education, is higher than the average for districts in the entire country. Nonetheless, the results in Minuwangoda area, however, show that there are some rooms for improvement.

In Sri Lanka, primary education lasts 5 years beginning from Grade 1 to Grade 5, which are further divided into 3 key stages; Key Stage 1 consisting of Grade 1 and 2, Key Stage 2 consisting of Grade 3 and 4, and Key Stage 3 solely consisting of Grade 5. Throughout each key stage, students are taught by the same teacher. For instance, a teacher teaching Grade 1 students in a given year will be teaching Grade 2 in the following year as the students go on to Grade 2; likewise, a teacher teaching Grade 2 in a given year will be teaching Grade 1 in the subsequent year.

At the end of Grade 5, students may elect to take the national scholarship exam. Since the students who mark exceptional scores can seek advance study at the recognized schools, most of the parents are eager to send their children to after-school tuition classes.

## **2 Methods**

This section reviews the methods used in this study.

## 2.1 School Assignment

The sample for this baseline assessment encompasses 640 grade 2 learners, divided between 15 schools set to receive the Literacy Boost intervention (n of learners = 315) and 15 comparison schools (N of learners = 325). Minuwangoda Zonal Education Office first selected all schools that meet the following criteria:

- Relatively same socio-economic status
- Similar level of the educational achievement
- More than 50 children attending the school (Government of Sri Lanka is providing special scheme to the schools where there are fewer than 50 students)

As Minuwangoda Educational Zone consists of three educational divisions, namely Divulapitiya, Meerigama and, Minuwangoda, ten schools that meet the aforementioned criteria were randomly selected from each division. Once selected, two clusters were formulated based on the proximity. If it was found that any particular schools is close enough from any one of the schools in the another cluster, the school was omitted from the cluster and another randomly selected school was added. This process continued until all schools in one cluster are far enough from the other cluster. After the completion of this process, one cluster was assigned as the LB schools and the other as comparison schools.

## 2.2 Student Selection

Unlike Literacy Boost programs in other locations, a critical point of this particular Literacy Boost intervention was to see how to best support slow learners. As such both a random sample of students from Grade 2 were assessed in each of the 30 schools, as well as a purposive sample of slow learners. The sampling guidance called for a random sample of 20 learners, and a purposive sample of up to 6 slow learners. However, due to class size constraints, the total number of randomly sampled students ranges from 6 to 20, and the total number of slow learners assessed at each school ranges from 1 to 6. See Table 1 for a break down in total sample sizes

Table 1: Sample Sizes

<u>Learner Type</u>	<u>Selection Method</u>	<u>Literacy Boost</u>	<u>Compariso n</u>	<u>Total</u>
Slow Learners	Purposively Sampled	78	74	152
Non-Slow Learners	Randomly Sampled	237	251	488
TOTAL:		315	325	

## 2.3 Instruments

Table 2 offers examples of background and home literacy indicators and offers a detailed description of reading indicators.

Table 2: Data Collected

<b>Student background</b>	<b>Examples</b>
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
<b>Home Literacy Environment</b>	
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
<b>Reading Outcome</b>	<b>Description</b>
Concepts About Print	N of concepts demonstrated correctly of 10
Alphabet knowledge	N of letters/sounds known of 61
Vocabulary/Decoding	N of single words read correctly of 20
Fluency	N of words in a connected text read correctly in a minute
Accuracy	Percentage of words in a connected text read correctly
Listening Comprehension	N of 9 comprehension questions answered correctly after listening to a text read aloud by the assessor (only for non-readers)
Reading Comprehension	Number of comprehension questions answered correctly of 9 after reading a text read aloud (only for readers)

These assessments were developed and pilot tested prior to baseline data collection using the Literacy Boost Toolkit Assessment Component.

In addition to the data specified above, school background information was collected, including resources present at the school, student attendance, and teacher-level data.

## 2.4 Data Collection

Each assessment team visited one school per day over the course of five weeks in January and February 2013. Each team was composed of one team leader (a representative of either the Siddhartha organization or Save the Children Sri Lanka), and 5 assessors, who were recently graduated young officers working for the Zonal and Divisional Education Offices. As a part of their capacity development, with support from In-Service Advisors of the Zonal Education Office, we provided them with assessment



tools and methodologies and trained them as assessors. Teams collected school level data while a team of five assessors collected student background and reading skill data.

For procedures concerning inter-rater reliability data collection, and for the inter-rater reliability results, refer to Appendix A.

## **2.5 Analysis**

This analysis has two purposes: first, to test whether the Literacy Boost learners and the comparison learners are equal in terms of background and skills. That is, do these learners possess the same resources and capabilities? This question is important so that at end-line, we can know how much Literacy Boost has, or has not, contributed to learners' accelerated reading development.

The second purpose is to assess what skills the students currently have, and what areas and skills Literacy Boost should focus on.

To test the comparability of learners in the 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. When differences are expected (i.e. in the reading skills between slow learners and non-slow learners) a one-tailed t-test will be used to assess differences. Otherwise a two-tailed t-test will be used when no predictions exist of which group may be statistically significantly higher or lower in terms of background data or reading skill data. Summary statistics 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.

Comparing several different groupings of learners are possible in this data. Of particular interest are the following groups:

- 1) Slow learners versus non-slow learners (SL v. nSL)
- 2) Literacy Boost versus comparison students (LB v. C)
- 3) Girls versus boys (G v. B)

Data in this report will be disaggregated by group only when the aforementioned clustered t-tests indicate statistically significant differences between groups.

### **3 Student Background and Demographic Data**

In general, very few significant differences in background and demographics exist between groups, whether comparing slow learners and non-slow learners, Literacy Boost and comparison students, or boys versus girls.

The students are about 6 years old on average, and all students speak Sinhala as their native tongue. Nearly all students (99 percent) have attended early-childhood development (ECD) programs and only three percent of students have repeated second grade. On average, students live with five other family members and have four of ten common amenities in the region (bicycle, electricity, refrigerator, toilet, computer, et al.). Finally, nearly all students (94%) do chores at home, but a small minority of students (3.0 percent) report ever missing school expressly to do chores. Approximately two-thirds of all students report attending supplemental classes after the school day, and over 90 percent report studying at home. The average minutes spent studying per day is slightly over 100 minutes. Because estimation of time by 6 year old children might be called into question, students were also asked how often they study. To this question, nearly 82 percent reported that they sometime or always studied.

While some significant differences exist in background variables between groups, the magnitude of these differences is small enough to be considered inconsequential. For instance, between Literacy Boost students and comparison students, 99.7 percent of Literacy Boost students reported attending ECD, while only 98.2 percent of comparison student reported the same. While this difference is significant, it does not hold any consequential programmatic implications.

For the exact background averages by group and all statistically significant differences, refer to Appendix B.

### **4 Individual Skill Analysis**

This section will review the individual reading skills that Literacy Boost assessed. Each sub-skill (concepts about print, letter knowledge, word identification, fluency, accuracy, listening comprehension, and reading comprehension) will be examined in depth, and significant differences between groups will be explored. Implications of these findings will be presented at the end of this section following a graphic that sums up student skills. For complete group averages and significant differences, if any, refer to Appendix C.

#### **4.1 A Note about Benchmarks**

While Save the Children has used this approach to reading assessment and intervention in Bangladesh, Ethiopia, Indonesia, Malawi, Mali, Mozambique, Nepal, Pakistan, the Philippines, South Africa, Uganda, and 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. We present the scores at the 75<sup>th</sup> percentile of each measure. These scores will constitute the benchmarks which the Literacy Boost program will attempt to help learners achieve by the time of end-line assessment. We use the 75th percentile of the randomly sampled students, as it is our hope that all students, both slow learners and non-slow learners, will be high achieving, capable readers.

## 4.2 Concepts About Print

The first sub-test of the reading assessment consisted of 10 'concepts about print' (CAP) questions. These questions concern familiarity with books – where to start, which way to read, what is a letter, what is a word, etc. In general, students know 9 out of 10 of their concepts about print, indicating a high familiarity with books.

In general, students had the easiest time opening the book and showing the direction to read in, indicating a familiarity with books and reading or seeing others read. The most difficult item had to do with page numbers. On average, only 70% of students correctly could turn to page 12 when asked. This difficulty might indicate something other than literacy skill issues: students may be less familiar with their numbers and numeracy skills resulting in fewer correct answers on that particular item.

Some significant differences were observed between groups, seen in Table 3. First, between the slow learners and the non-slow learners, there was on average a difference of approximately five percentage points in the concepts about print score in favor of the non-slow learners (91.1 percent) versus the slow learners (86.3 percent). This difference can be expected, as slow learners were purposively sampled as those struggling to learn. Nonetheless, even for the slow learners, a score of 86.3% is relatively high and is not of real concern. The same is true for the significant difference that exists between Literacy Boost students and comparison students. The 3 percentage point difference, while significant, does not have real-world implication. Lastly, the entire group of girls significantly outperformed the entire group of boys, but when examining only students who were randomly sampled (that is, the non-slow learners), this significant difference disappears.

Table 3. Concepts about Print Scores by Group		Significant Difference
Non-Slow: 91.1%	Slow: 86.3%	**
All Comparison: 91.5%	All Literacy Boost: 88.4%	**
All Girls: 91.6%	All Boys: 88.5%	**
Non-Slow Girls: 92.2%	Non-Slow Boys: 90.1%	

*Benchmark:* For the endline assessment, we set a benchmark of 98% on all concepts about print. That is, we aim to get all learners scoring an average of 98% on concepts about print by the end of Literacy Boost implementation.

### **4.3 Letter Knowledge**

The next sub-test examined learners' letter awareness. Learners were shown a chart of 37 basic Sinhala letters and 24 additional compound letters, and were asked to name the letter or pronounce the letter sound. On average, Literacy Boost and comparison learners correctly identified 86.8 percent (52.9 letters) out of a combined total of 61 letters. They had an easier time identify basic letters (92.2 percent correct out of 37) than the more complex compound letters (78.7 percent correct out of 24 letters). The three most difficult letters were compound letters බ, ඩ, and ඊ, and the three most often named correctly were the basic letters අ, ඉ, and ම.

When comparing basic letters and compound letters, compound letters are formed together with a consonant and a vowel. Each consonant has an inherent vowel, which can change with a different vowel sign. Compound letters are difficult to pronounce when compared with basic letters. Even without a sophisticated analysis by linguists, it is clear that the letters that were most commonly known are the ones most used in the Sinhala language. They are found in names and many other words commonly used and related to everyday life. When looking at the basic letter “අ” which is first letter in the Sinhala alphabet and children frequently use that letter while talking and it is the most common letter which appears in text books. Words which consisting of letters බ, ඩ, and ඊ are uncommon in the grade 1 and 2 books. There were no differences between Literacy Boost and comparison students.

A significant difference did exist in the number or percent of letters correctly identified between slow learners and non-slow learners. On average, slow learners identified 80.9 percent of their letters correctly, while non-slow learners identified 86.8 percent of their letters correctly. Since part of the definition of slow learner was a child who had trouble identifying letters, this significant difference between groups is to be expected.

*Benchmark:* For the endline assessment, we set a benchmark of 98% on all letters tested at baseline. That is, we aim to get all learners scoring 98% on their letters by the end of Literacy Boost implementation.

#### 4.4 Word Recognition

Table 4. Percent of Most Used Words correct across the sample

Sinhala Word (English)	Sample Average	Sinhala Word (English)	Sample Average
අම්මා (Mother)	96.6%	ඔන්න (There / Here)	82.9%
යාච්චෝ (Friends)	95.1%	ගා (Tree)	81.3%
රජතුමා (King)	92.0%	කුමාරි (Princess)	80.9%
ගියා (Went)	90.3%	අයියා (Brother)	78.5%
පන්තිය (Classroom)	90.0%	පොත් (Books)	77.3%
ආවා (Came)	86.7%	ලේන් පැටියා (Baby squirrel)	72.9%
එන්න (Come)	86.7%	පණ්ඩිතයා (The messenger)	69.0%
මල් (Flowers)	85.6%	කුරුල්ලෝ (Birds)	66.6%
කොළ (Leaves)	85.3%	අපි (We)	66.5%
ලස්සනයි (Beautiful)	83.7%	කිවුලා (Told)	59.2%

The most used words (MUW) sub-test consists of a chart of 20 words that the student is asked to read. These 20 words were identified as 'most used' by tabulating the number of times a word appeared in learners' language arts textbooks.

On average, learners in Literacy Boost and comparison schools were able to read 81.4 percent of the most used words. There is no statistically significant difference between the two groups, meaning that at baseline, learners are starting with the same foundational skills in word identification.

A majority of the children are able to read the word "mother", which is frequently used and familiar word to them. Learners had the easiest time reading words that consisted of two letters. The words they found the most difficult (less than 70 percent of students read correctly) have three to six letters including compound letters.

Similar to letter identification, one significant difference was observed between groups, specifically between the slow learners and the non-slow learners. There was on average a difference of approximately nine percentage points in the word recognition score in favor of the non-slow learners (83.2 percent) versus the slow learners (74.2 percent). This difference can be expected, as slow learners were purposively sampled as those struggling to learn.

*Benchmark:* For the endline assessment, we set a benchmark of 98% on all most used word tested at baseline. That is, we aim to get all learners reading all of these words by the end of Literacy Boost implementation.

#### 4.5 Fluency & 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. Students who could read at least 2 of the Most Used Words presented in the section above were asked to read a passage given to them. Students were asked to read the passage and upon starting the task, a time was started. If the student could read at least 5 words correctly within the first 30 seconds, the student was marked as a reader and was allowed to continue reading the passage to the end. 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.

In the Sri Lanka Literacy Boost baseline, 438 out of 640 students, or 68.4 percent of learners, were able to read more than 5 words in the first 30 seconds and were labeled as 'readers'.

In this analysis, we consider the averages for the entire group of readers. The average fluency rate for Literacy Boost and comparison students was 16.7 words per minute, and their accuracy was 63.8 percent of the passage read correctly. There were no significant differences between the fluency and accuracy skills of Literacy Boost and comparison students. Neither were there any statistically significant differences between slow learners and non-slow learners.

A difference between boys and girls, however, does exist in terms of fluency and accuracy. Table 5 displays these differences using a two tailed t-test.

Table 5. Fluency and Accuracy Scores by Group			Significant t Difference
Fluency	All Girls: 20.7 words per minute	All Boys: 13.1 words per minute	**
	Non-Slow Girls: 20.7 words per minute	Non-Slow Boys: 13.7 words per minute	**
	Slow Girls: 20.6 words per minute	Slow Boys: 11.3 words per minute	**
Accuracy	All Girls: 70.2% read correctly	All Boys: 58.0% read correctly	*
	Non-Slow Girls: 70.7% read correctly	Non-Slow Boys: 61.2% read correctly	
	Slow Girls: 68.5% read correctly	Slow Boys: 47.6% read correctly	

Significant at \*p<.10, \*\*p<.05 \*\*\*p<.01

In Table 5, we see that for fluency, girls on average read faster than boys for all groups, be it slow learners, non-slow learners, or all the learners taken together. And when looking at the entire sample, the girls read significantly more accurately than the boys do, on average. However, when the groups are disaggregated by slow and non-slow learners, these differences disappear.

*Fluency Benchmark:* As no differences existed between slow learners and non-slow learners, we present here the 75th percentile mark for the entire sample as the fluency benchmark. Also, since a minority of students are non-readers, we use the 75th percentile mark from the combined sample of readers and non-readers. It is our goal to have all students reading at 25 words per minute or more by the end of the Literacy Boost project.

*Accuracy Benchmark:* As no differences existed between slow learners and non-slow learners, we present here the 75th percentile mark for the entire sample as the accuracy benchmark. Also, since a minority of students are non-readers, we use the 75th percentile mark from the combined sample of readers and non-readers. It is our goal to have all students reading with 98% accuracy by the end of the Literacy Boost project.

#### **4.6 Listening & Reading Comprehension**

The final sub-test quizzed learners on a series of nine comprehension questions related to the reading passage. For those learners who were unable to read a single word from the passage, the assessor read the passage to the student before asking the comprehension questions. Sixty-eight 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 who could read the passage independently.

On average, Literacy Boost and comparison students answered 63.2 percent of reading comprehension questions correctly. For listening comprehension, a statistically significant difference did exist between Literacy Boost and comparison students. LB students scored 51.2% on listening comprehension on average, versus 60.5% on the part of comparison students on average, significant at a  $p < .05$  level. As there were no statistically significant differences in the scores of slow learners and non-slow learners, the two groups will be combined in further analysis.

For both the reading comprehension and the listening comprehension questions, the easiest types of 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. The hardest question for students was the summary question, which asked students to retell the story in their own words. Students received 1 point on this question if they were able to accurately recount three of the four most important parts of the story. For average values, refer to Table 6.

Table 6: Comprehension Question Averages

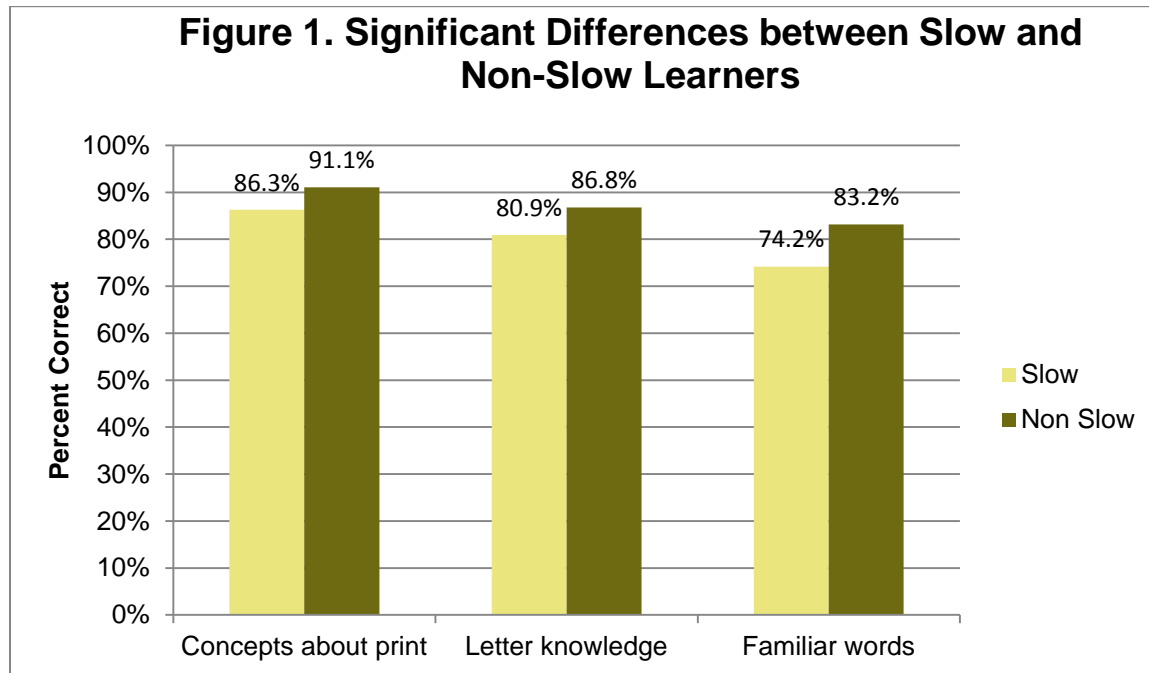
Comprehension Type	N of Items	Readers: % of sample answering correct (N=436)	Listeners: % of sample answering correct (N=202)
Factual	5	73.0%	68.0%
Inferential	2	71.1%	61.9%
Evaluative	1	70.0%	51.0%
Summative	1	55.0%	42.5%

*Benchmark:* Regardless of which group a child belong to, whether he/she is a reader or a listener, in a Literacy Boost or a comparison school, Slow Learner, etc., the 75th percentile consistently falls at 88.9% of all questions answered correctly. Hence, for endline, Literacy Boost's goal is to have all students answering with at least 89 percent comprehension.



## 4.7 Group Differences and Recommendations

In this section we summarize graphically the difference between the three groups of interest: slow and non-slow learners, Literacy Boost and comparison students, and boys and girls



In Figure 1, there is a small but consistent difference between slow learners and non-slow learners on the three foundational skills assessed, concepts about print (significant at a  $p < .01$  level) and letter knowledge and familiar words (significant at a  $p < .05$  level). This difference indicates that slow learners struggle somewhat to learn the same foundational skills as their non-slow peers, and also indicate that the definition provided to teachers for identifying slow learners was sufficient to successfully target these students. **During implementation, Literacy Boost should make sure that all learners have access to books and activities that enforce the learning of the foundational skills of letter identification and single word reading, as well as providing access to books for all learners, particularly those that struggle the most to read.**

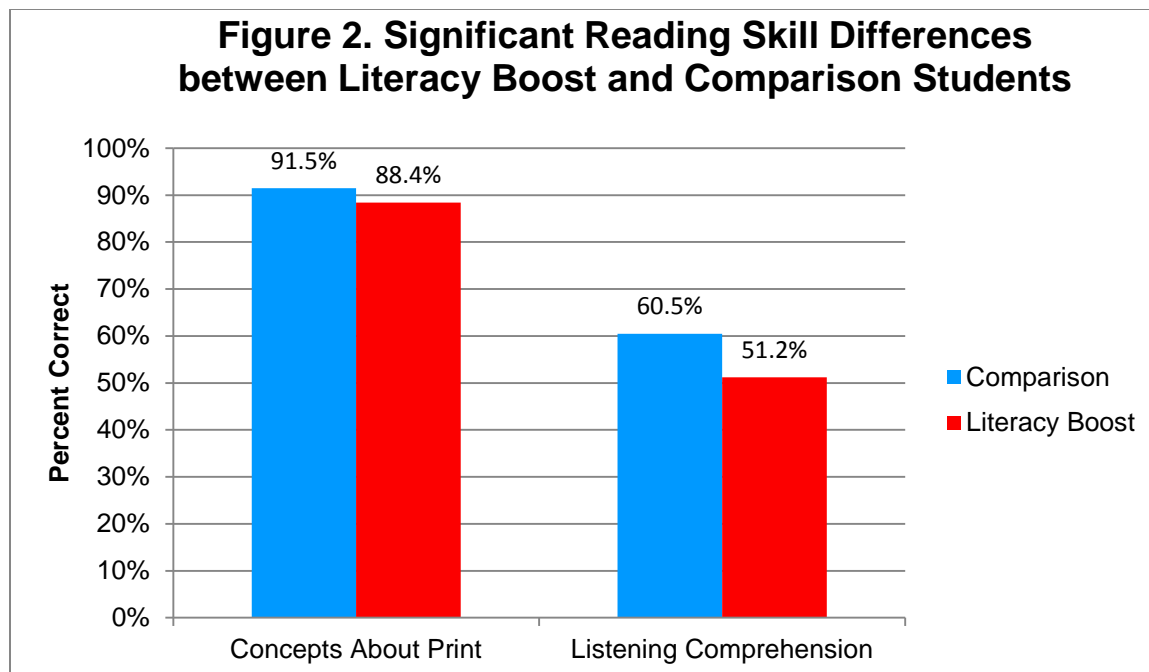
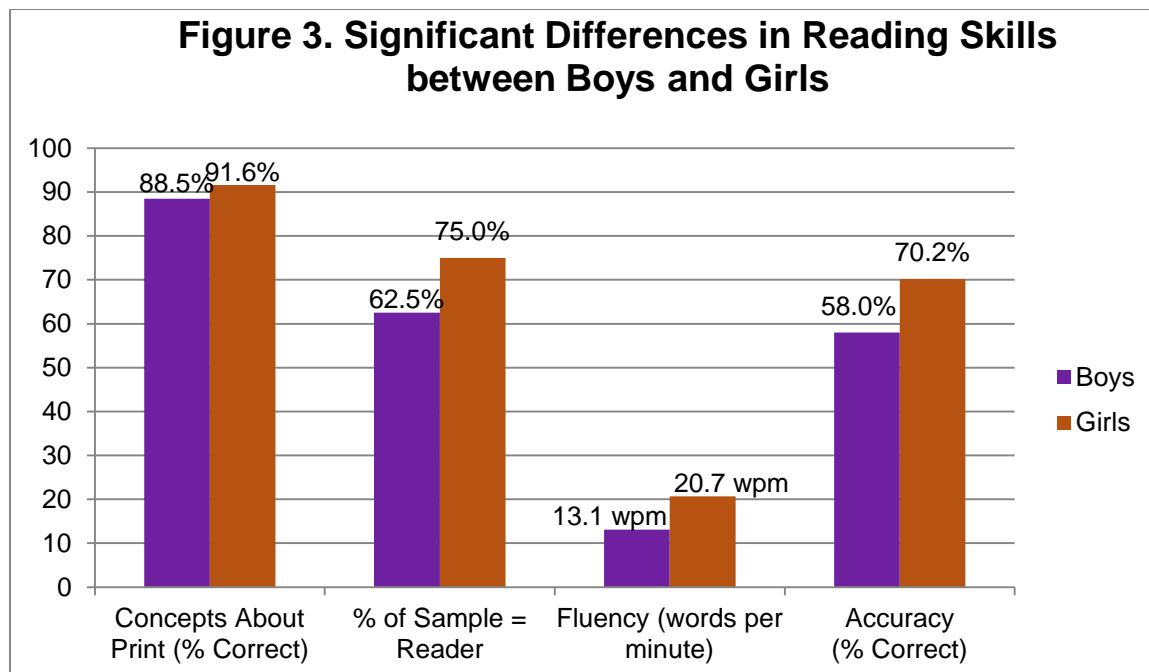


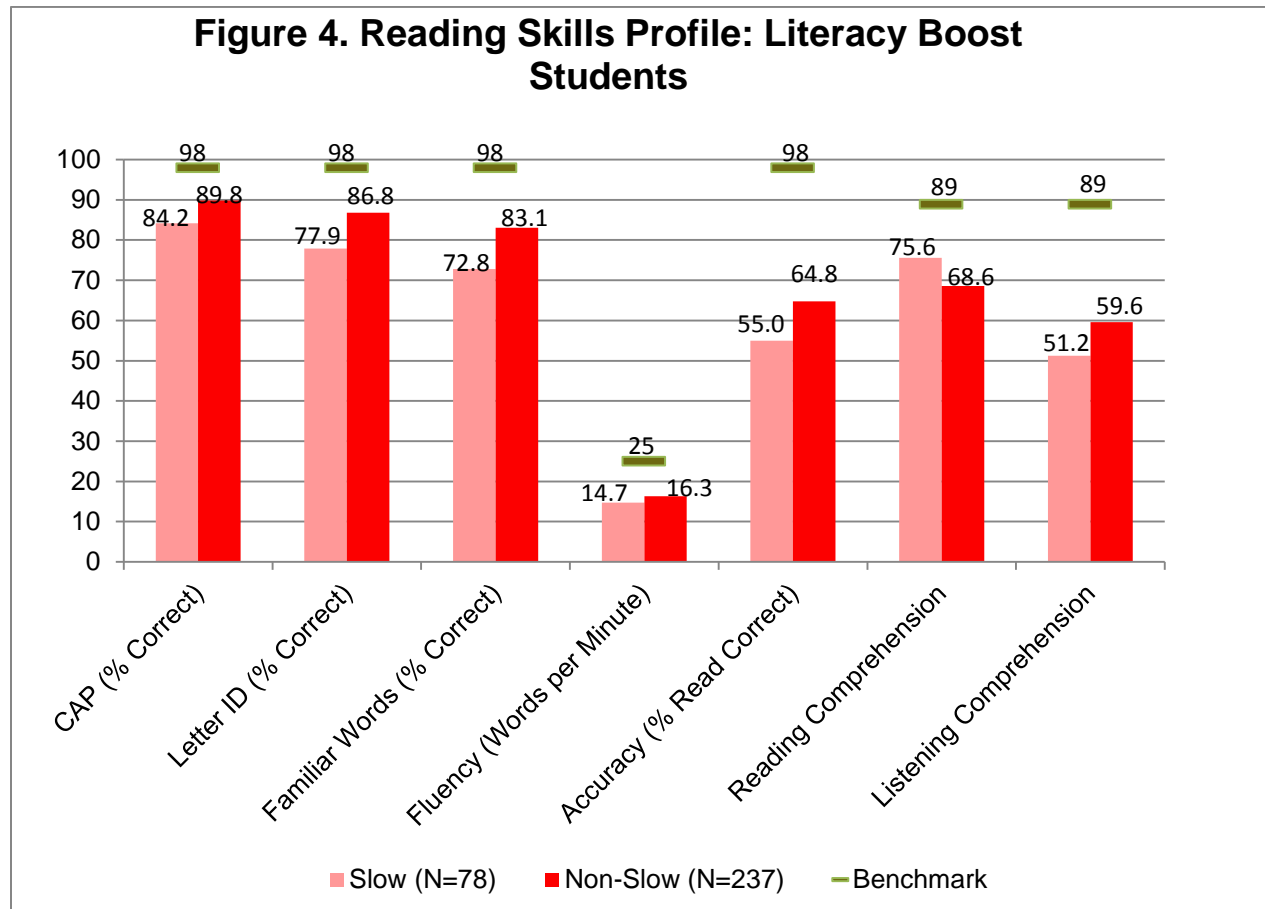
Figure 2 displays the two reading skill areas where Literacy Boost and comparison students significantly differed in their scores. According to the data collected, comparison students are more familiar with books and have better listening comprehension, significant at  $p < 0.05$  for both skills. While the difference exists for concepts about print, it is a small difference in terms of magnitude and the fact that students are approaching a ceiling suggests that access to books is not a great issue. Nonetheless, **Literacy Boost should ensure that all students have enriched home, community, and school literacy environments to ensure that their concepts about print reaches the benchmark of 98 percent.**

Literacy Boost students also lagged behind their comparison peers in listening comprehension. **An emphasis should be placed on oral story reading and engaging learners in thoughtful questions (prediction, opinion, summarization) before, during, and after a story is read. This should occur throughout Literacy Boost, including in the classroom with the teacher and outside the classroom with Reading Buddies, in Reading Camps, and in the home.**



The most significant finding in this section is displayed in Figure 3. Girls consistently outperform boys in many of the skills tested, particularly the higher order skills of reading fluency and reading accuracy. Each difference in the figure is significant at a  $p < 0.10$  level, with the exception of the difference in fluency which is significant at  $p < 0.05$  level. **As Literacy Boost is implemented, the participating schools and communities should be made aware of this difference that favors the girls. A critical examination of the factors that feed into this, including access to reading materials, the amount of work that each sex may differentially do, and others should be examined and discussed, with the aim of helping boys close the gap with the girls and achieve equitable outcomes.**

#### 4.8 Reading Skill Profile: Literacy Boost Students



As the Literacy Boost project will be focusing on improving the skills of Literacy Boost students, Table 4 presents the skills of both slow and non-slow students sampled from Literacy Boost schools. Included in Table 4 are also the benchmark goals of Literacy Boost, the levels at which Literacy Boost should aim to have all students reading. While there are differences between the slow and non-slow Literacy Boost students, only the letter identification and familiar words are significant differences, at the  $p < 0.05$  level.

**The goal for Literacy Boost is to have all students, whether slow learners or not, to be reading at benchmark levels by the end of the school year.**

#### **5 Home Literacy Environment Data**

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. We break the home literacy environment down into two

important domains: materials at home and engagement with print. Refer to Appendix D for complete statistics for all variables collected.

## 5.1 Materials at Home

All students were asked whether they had various types of reading materials at home. As the numbers reveal, there are very few significant differences in the groups. What significant difference do exist are of a small enough magnitude to be considered inconsequential for programming. For instance, Literacy Boost students have on average 2.2 types of children's books at home, where as comparison students have on average 2.3 types of children's books at home. This difference, while significant, does not suggest any programming recommendations. In general, this lack of significant differences indicates that all the students are starting off with the same basic resources prior to entering the Literacy Boost program. For an illustration of what precisely these resources are, Figure 5 displays the different types of printed materials that Literacy Boost students (both slow learners and non-slow learners) may or may not have at home.

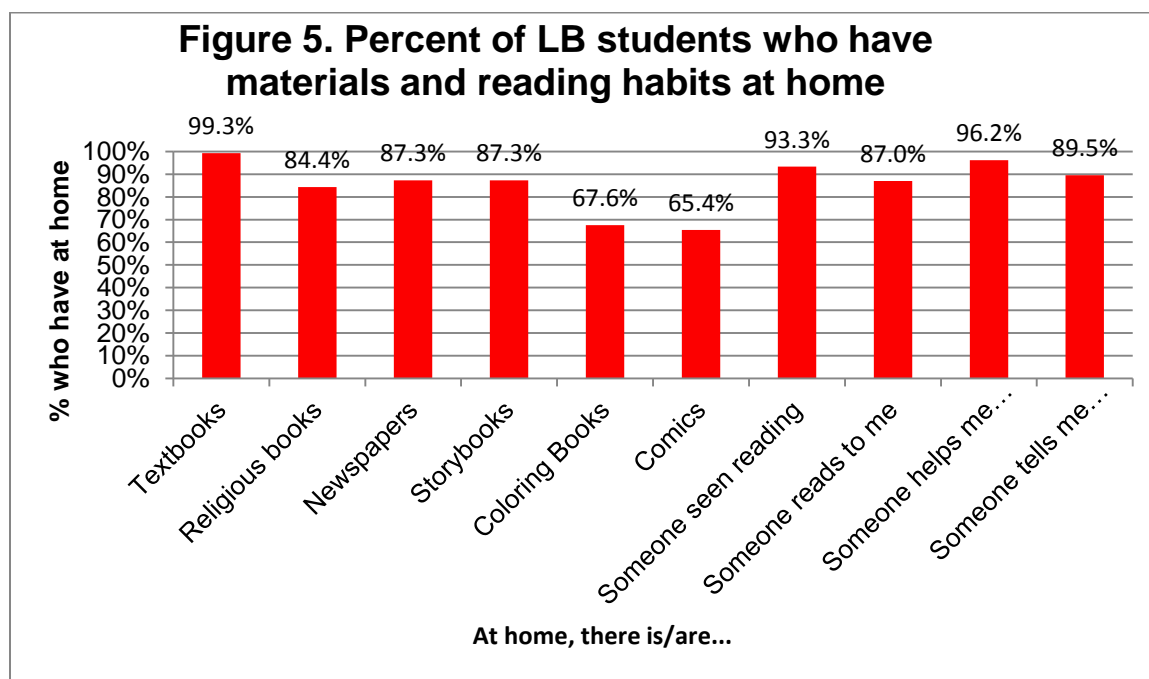


Figure 5 shows that students are starting off with a high level of print materials in their home. The most common type of materials at home are textbooks, with over 99 percent of students reporting that they have access to textbooks at home. More than 4 out of 5 students report have religious books, newspapers, and storybooks at home, while a smaller percentage yet still a majority of students report having coloring or comics books at home. While providing more and diversified material for learners to practice

with, Literacy Boost should explore ways and techniques to capitalize on the existing, strong print environment of the home.

## 5.2 Engagement with Print

Reading materials alone do not a home literacy environment make. That is, the HLE is not only about materials in the home, but 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 Figure 6). 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. Table 7 shows how the Literacy Boost and comparisons groups measure up in terms of engagement in these four home literacy environment activities.

Table 7. 2013 Baseline Student Home Literacy Environment Data by Literacy Boost and Comparison Schools

	<b>Comparison (N=325)</b>	<b>Literacy Boost (N=315)</b>	<b>Significant Difference</b>
Someone at home seen reading	90.8%	93.3%	
N See Reading	2.4	2.4	
% See Reading	50.1%	49.4%	
Someone at home helps you study	98.5%	96.2%	
N at home helps you study	2.7	2.6	
% helps you study	56.0%	53.7%	
Someone at home reads to you	91.4%	87.0%	
N Read to you	2.2	2.0	
% Read to you	46.7%	41.3%	*
Someone at home tells you stories	93.9%	89.5%	*
N at home tells you stories	2.2	2.0	
% at home tells you stories	46.4%	41.4%	**

Significant at \*p<.10, \*\*p<.05 \*\*\*p<.01

What is discernible from Table 7 is that all students are already starting off with a relatively rich home literacy environment when compared to other countries in which Save the Children has collected data for Literacy Boost. Over 90 percent of all students reported that someone at home was seen reading, helped the student to study, read to

the student, and told the student stories in the past week. And when examining how many individuals at home exhibited these behaviors in the past week, all students reported that on average there were at least two separate individuals at home who did so, if not more. Small but statistically significant differences exist when comparing the Literacy Boost and comparison students. However, like the other significant differences seen elsewhere in this report, they are not of enough magnitude to result in programmatic implications. **As Literacy Boost is implemented, it is important to capitalize on the strong home literacy environment that exists in the homes already. Encourage parents and community members to participate in reading awareness workshops as a way to further bolster their skills in supporting their children to learn.**

## 6 Trends in Reading Skill Data

In this section we briefly share one further figure highlighting two important trends observed in the data, the difference between boys and girls and the importance of materials in the home. Relationships in this section are based off of statistical models as determined through forward stepwise regression. For a full list of control variables,  $r^2$  values, and standard errors, please refer to Appendix D.

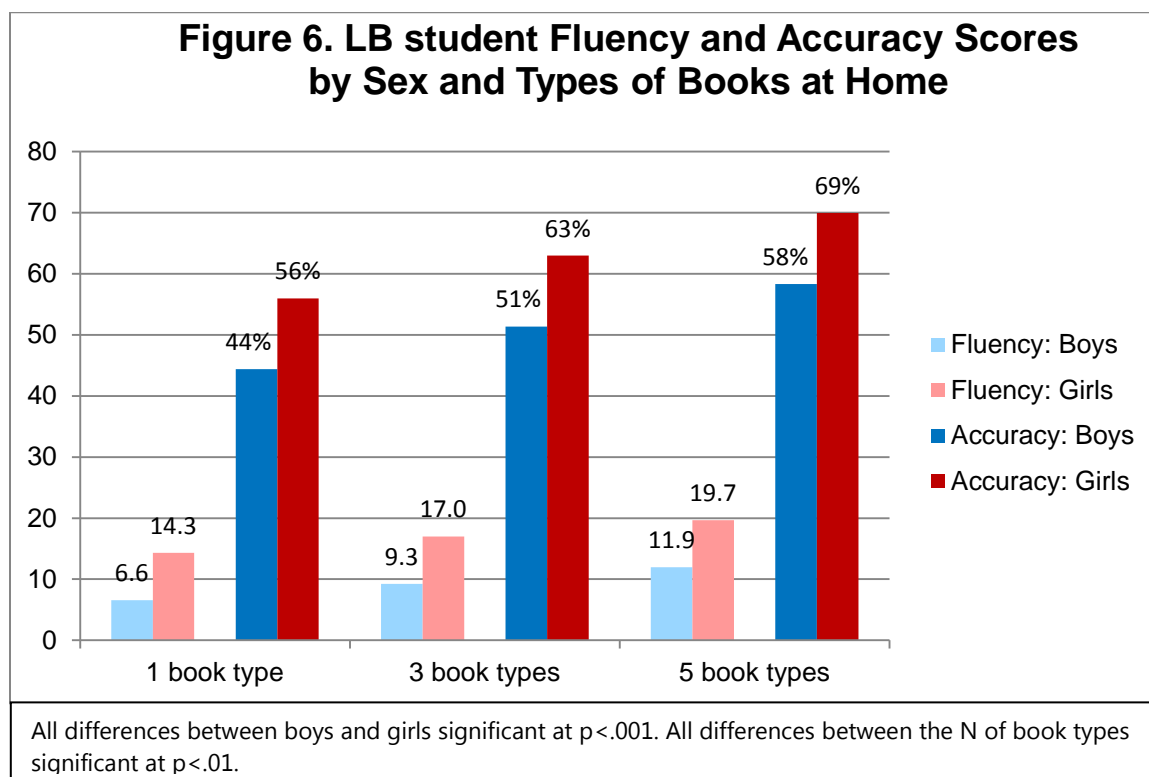


Figure 6 are graphical representations of regression models predicting accuracy and fluency. All models control for time spent studying, whether the child reported lending books and reading books to others. The model predicting fluency further controlled for whether anyone at home read to the student. The model predicting accuracy further controlled for the N of individuals at home reading to the student, the frequency of extra class attendance, the frequency that the child does chores at home, and class size.

As figure 6 shows, there is a clear association between the number of types of reading materials at home and a children's reading proficiency. Children who come from homes with more types of materials have higher scores in fluency and accuracy, on average. Also, this figure shows how girls persistently outperform boys in reading.

**As Literacy Boost is implemented, a strong focus on providing children diverse access to texts should be featured, and grass-roots advocacy campaigns should be pursued to help boys close the gap with their female peers.**

## **7 Learning Challenges Screening Assessment**

In addition to the literacy skills assessment, Save the Children also designed and implemented a separate Learning Challenges Screening Assessment<sup>1</sup> (LCSA) for all students identified by teachers as being slow learners. Following conversations with child psychologists at Lady Ridgeway Hospital – who would be responsible for conducting full screenings of children with learning disabilities in Minowangoda – it became clear that the project would need to adapt a survey that could be implemented by non-health professionals at the school level. This tool (see Appendix F) was developed based on existing SC program experience, as well as feedback received from Catholic Relief Services, the Ten Questions Screening instrument, and the new UNICEF/Washington Group on Disability Statistics Module on Child Functioning and Disability.<sup>2</sup>

Research in best practices in disability identification highlighted the importance of ensuring that the person completing the survey has spent significant time observing the child.

Given the time and budgetary constraints of the project, as well as the fact that our enumerators would not be medical health professionals, we chose to use proxy reporters who are close to the children. However, unlike existing tools that use parents as proxy reporters of children's development and challenges, the ACR LCSA was designed to use teachers as proxy reporters, thus focusing the assessment on challenges

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<sup>1</sup> Previously referred to as a "diagnostic assessment"

<sup>2</sup> See: [http://www.childinfo.org/files/childdisability\\_Durkin1990.pdf](http://www.childinfo.org/files/childdisability_Durkin1990.pdf) and <http://www.childinfo.org/webinars.html>.



that are affecting the child's educational performance. The tool was reviewed by experts in the field of special education and inclusive development, and was aligned with the Sri Lankan grade level competencies to increase the likelihood that teachers would have observed the skills in question.<sup>3</sup> Six categories of 4-9 questions were established to identify particular struggles in specific fields. Those categories were:

- A. Background Information on Disabilities and Treatment
- B. Language and Learning
- C. Social Behaviors
- D. Motor Skills and Physical
- E. Mathematical Reasoning
- F. Daily Living Skills

All questions were established to clarify areas that may indicate specific disabilities or learning challenges in the target age group. The survey was carried out in February 2013 by a team of assessors from the Department of Education and local partner staff who met with each teacher to complete the survey together. In total, 150 slow learners were surveyed via their teachers, from both comparison and Literacy Boost schools.

## **7.1 Background Information**

The background information section sought to compile existing factors that could influence a child's performance in school, both those related to disabilities and those not. This section was also meant to include data from a hearing and vision screening, but delays caused by authorization from the Ministries of Health and Education to collect the data has meant that it will not be available before the submission of this report. Hearing and vision data will be collected from slow learners in implementation schools<sup>4</sup> as soon as a procedure has been approved by the relevant government officials. Collected data will be shared with program teams to inform implementation, as well as USAID and other key stakeholders.

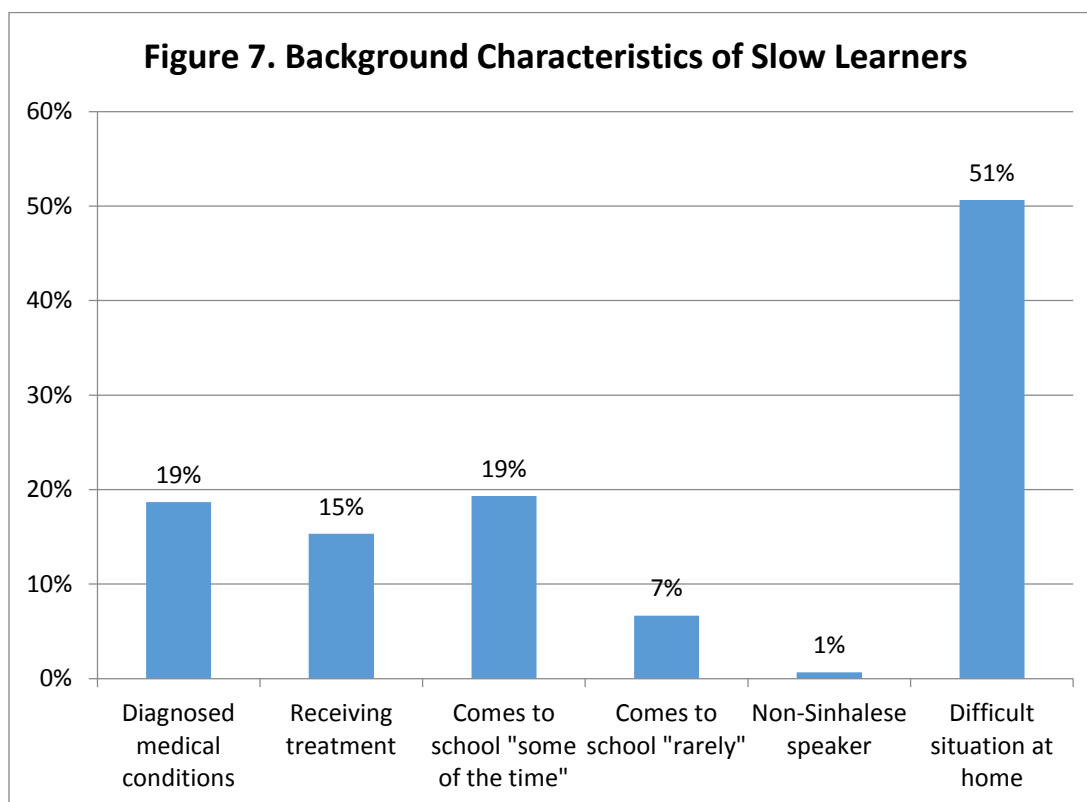
The background section of the tool found that nearly 1 in 5 slow learners had already been diagnosed with a medical condition, including some vision problems, speaking problems, minor physical disabilities, heightened susceptibility to sickness, asthma, nutritional deficiencies, and tendency to have "fits". All but five of these 28 students are currently receiving medical attention for these previously diagnosed conditions. The

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<sup>3</sup> Special thanks to Tamara Handy, Dr. Samanmali Sumanasena, Andrew Wells-Dang, Anita Pearson, Carol Grigsby, and Sylvia Thomson for their inputs in the development of the ACR learning disability tools.

<sup>4</sup> Since hearing and vision tests formally diagnose children with treatable impairments, we felt that it was unethical to conduct this portion of the screening in the control schools.

survey also found that irregular attendance is also a common factor among children identified as slow learners – although it is not possible to discern whether this is correlation or causation. More than a quarter of the slow learners come to school “some of the time” or “rarely”, compared to the remainder of the sample who come “all of the time” or “most of the time”. Mother tongue language issues were shown to be not a problem among this group of children – only one child of the 150 evaluated was a non-native Sinhalese speaker.

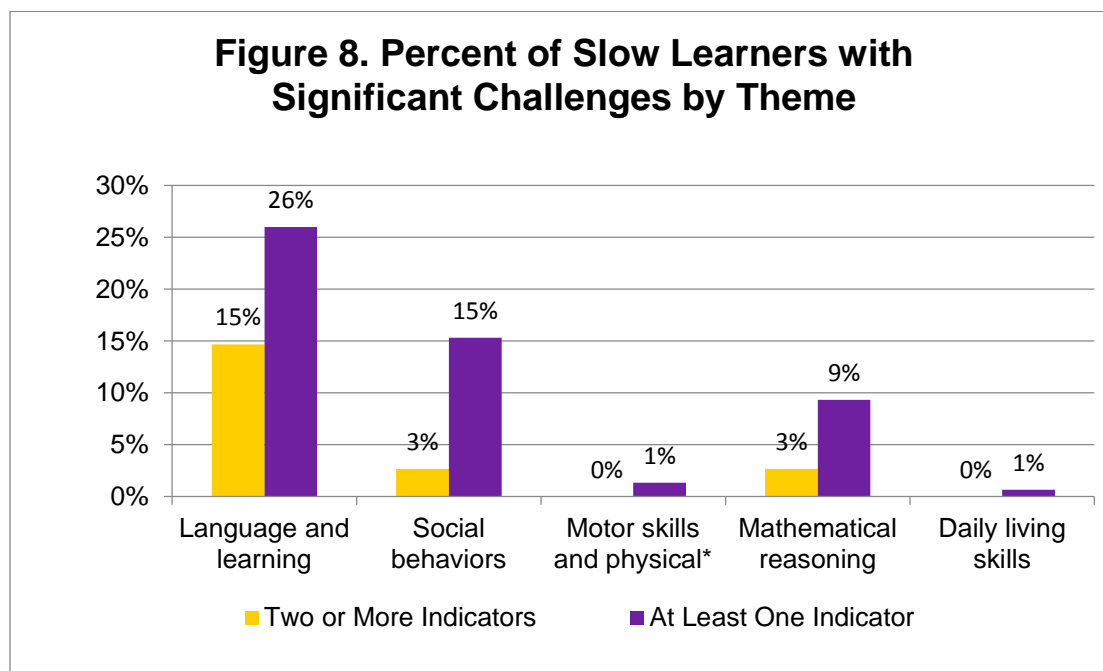


More than half of the children included in the evaluation were identified by the teachers as facing a “difficult situation at home.” However, this has proven to be a very subjective question, as the descriptions provided by teachers ranged from maternal and/or paternal abandonment to illiterate or unsupportive parents.

## 7.2 Learning Challenges

All data for indicators of learning challenges were collected through a spectrum of possible responses, including “no difficulty,” “some difficulty,” “a lot of difficulty,” “cannot do at all,” and “don’t know.” This method is in line with cross-agency program experience and the UNICEF/Washington Group on Disability Statistics Module on Child Functioning and Disability, and allows data to be analyzed through progressive cut-off points. For example, the survey found that only 7 students out of 150 children had no

difficulty with any indicator, however, since it is to be expected that second graders are still in the process of strengthening their skill sets, we are able to separate out the children who had “some difficulty” on a few indicators from the children who had “a lot of difficulty” or “cannot do at all” on multiple indicators, as the latter group of children are more likely to have specific challenges or disabilities in each thematic area.



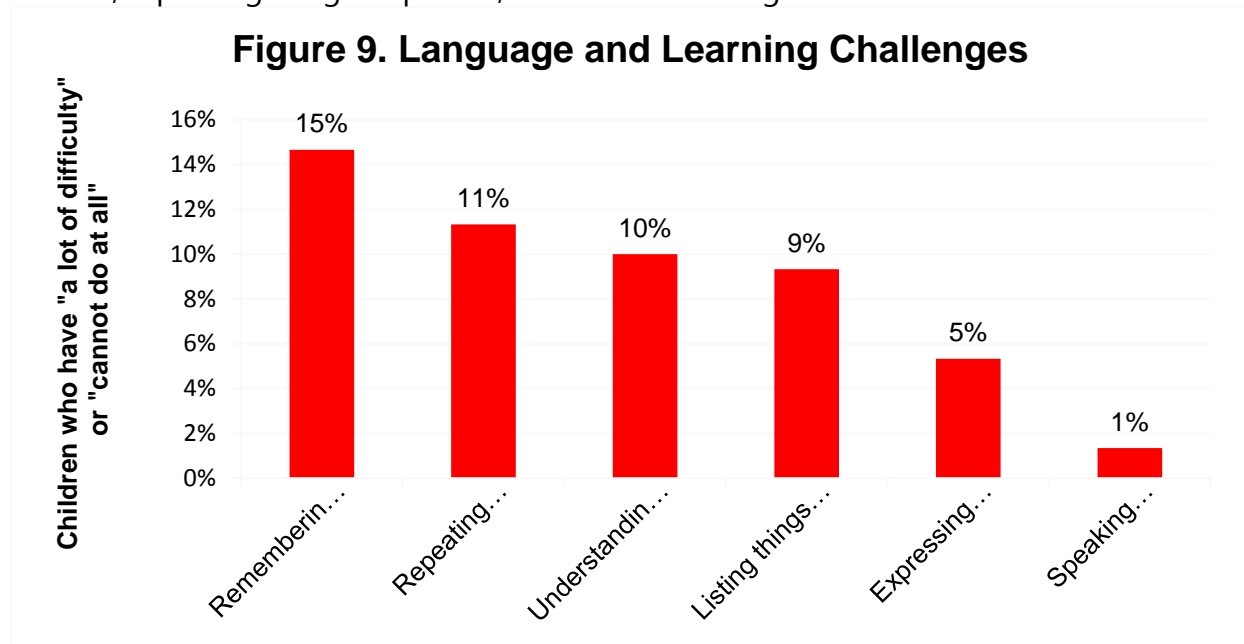
Unless otherwise indicated below, the cut-off point used to identify children with learning challenges in each section were those who were reported having “a lot of difficulty” or “cannot do at all” on individual indicators. Results for children scoring “some difficulty” are presented for the more objective themes (physical challenges and daily living), but the extremely high number of children experiencing “some difficulty” on more subjective questions (nearly 50 percent in some cases), indicate that partiality of responses may be inflating results – “some” to some teachers may indicate a difficulty that is still within the normal range for a child at that level. Future iterations of this assessment will provide more guidance on what constitutes “some difficulty” to increase the objectivity and inter-rater reliability of all survey results.

As indicated by Figure 8, the majority of children who “screened positive” by having a “lot of difficulty” or “cannot do at all” on survey indicators did so under the language and learning section. Far fewer children were registered having significant difficulty with daily living skills or motor skills, while social and mathematical challenges were also less prevalent.

### 7.3 Language and Learning

The language and learning section asked a series of questions to identify whether the child displays symptoms of speech and language impairment, dyslexia, or hearing impairment. While 74 percent of the 150 children surveyed had no more than “some difficulty” on any of the indicators, the remaining 26 percent had at least “a lot of difficulty” on one or more indicator and 15 percent (22 students) had at least “a lot of difficulty” on two or more indicators.

The most common area for severe challenges was in remembering what has been learned, repeating songs or poems, and understanding others.



In 12 percent of cases, teachers reported that the student had some challenge related to language and literacy that had not yet been reflected in the thematic section.

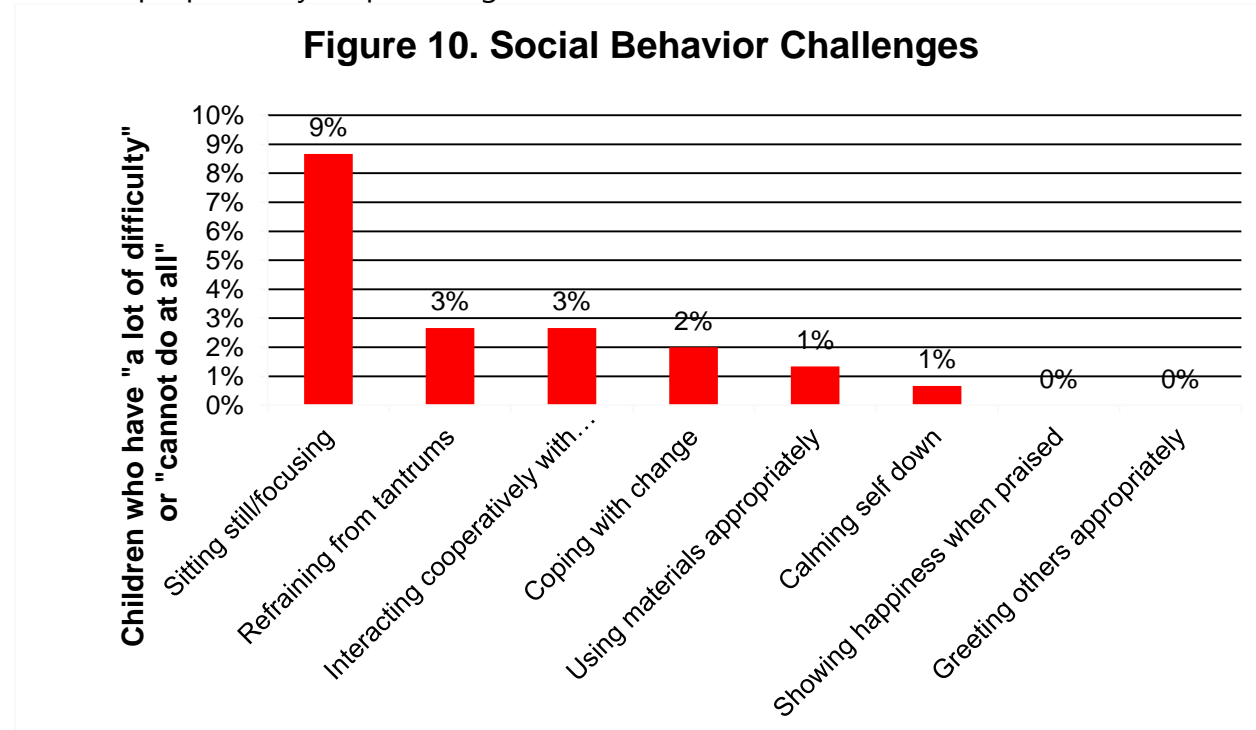
Responses included general difficulty reading, writing, or concentrating, as well as issues that actually had been reported elsewhere (vision problems, difficulty remembering or expressing ideas), and other factors that did not appear to be relevant to language and learning (for example, loving the teacher excessively or difficulty counting).

Overall, these language and learning challenges indicate that a significant portion of “slow learners” are struggling in areas that are indicative of language processing disorders. The Literacy Boost training model will help teachers to break down reading tasks into very concrete steps, while the SNAP tools and reference sheets will guide them in adapting their teaching styles to better reach children with these types of difficulties.

## 7.4 Social Behaviors

The social behaviors section asked a series of questions to identify whether the child displays symptoms of intellectual disability, ADHD, emotional disturbance, or being on the autism spectrum. This section went through the most involved norming process, as many of the indicators focus on what is considered “appropriate behavior,” which needed to be thoroughly adapted to the Sri Lankan context.

The majority of children who “screened positive” in this section (13) did so due to extreme difficulty sitting still and focusing. An additional 27 children were also listed as having “some difficulty” in this area. Although it is unlikely that all 40 children are struggling with the ADHD this question is meant to signify, all can benefit from more varied teaching styles and strategic actions by the teacher. Likewise, children who “screened positive” for indicators of autism spectrum disorders can benefit from teachers purposefully emphasizing structure and routine in the classroom.

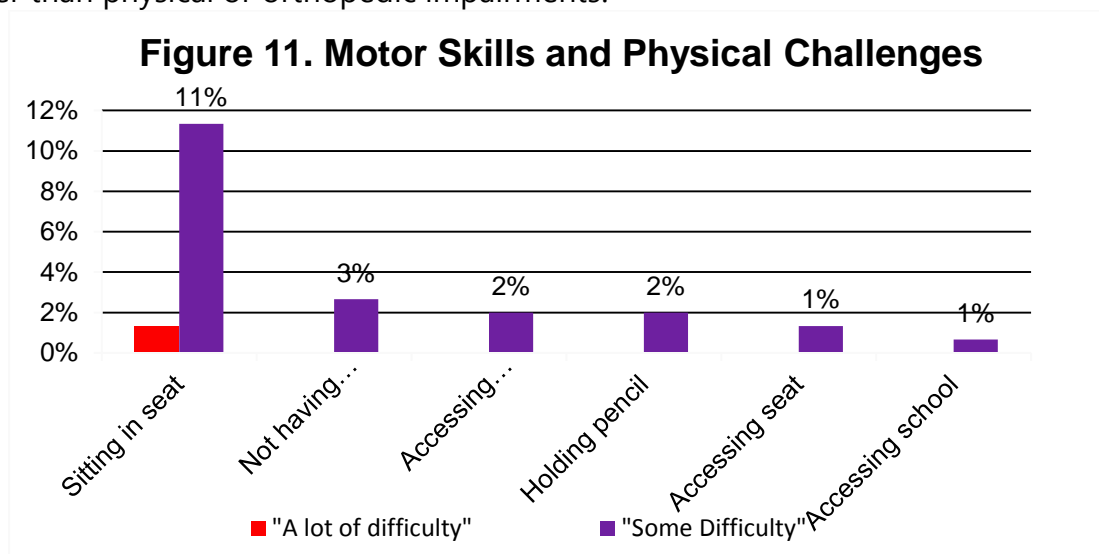


In 30 percent of cases, teachers also indicated that the child had an “other” social behavior challenge. More than half of these turned out to be poor study skills or unrelated comments (such as the family’s financial status), but the remainder described behavioral or anxiety problems. Again, while it is not possible to know for certain whether these children have social or behavioral disorders, the instructions that teachers will receive via the SNAP pack will specifically highlight how they can try to increase the learning outcomes of these children. Furthermore, children who are struggling and frustrated in school for any reason are more prone to act out and be viewed as having a

behavior problem – the SNAP strategies that address other thematic challenges should therefore also indirectly help some of these children’s behavior.

## 7.5 Motor Skills and Physical

The motor skills and physical section asked a series of questions to identify whether the child displays symptoms of physical or orthopedic impairment or epilepsy. Very few children were marked as having significant challenges in this area – in fact the only two children who scored “a lot of difficulty” or above on any indicator (difficulty sitting in a seat) were two who were also listed as having difficulty sitting still and focusing, implying that their challenges are more related to lack of attention and hyperactivity rather than physical or orthopedic impairments.



As indicated by the graph above, challenges were more prevalent when the cut-off point was dropped to only “some difficulty,” although it is still clear that physical challenges are a very minor problem for slow learners, particularly when compared to the prevalence of language and learning difficulties. Even the 11 percent of slow learners with “some difficulty” sitting in their seat are likely not experiencing the difficulty due to physical ailments – all but one of these children were also listed as having some degree of difficulty sitting still and focusing.

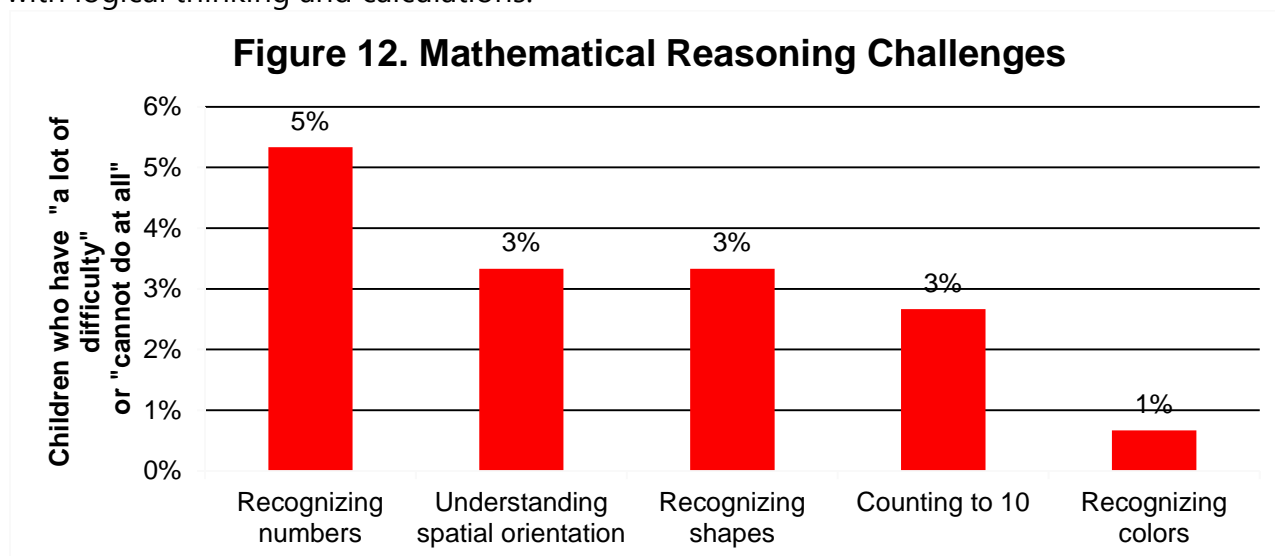
The three children who were identified with physical challenges accessing their school, classroom, or seat were all children with existing diagnoses of which the teacher was already aware. However, only one of the four students who sometimes have fits or become rigid in the classroom were previously diagnosed as having a “fit disorder.” Conversely, there are two additional children who were identified in the background section as having a fit disorder, while these children were not marked in this section as having occasional fits in the classroom.

This low prevalence of physical challenges among the “slow learners” fits in well with our understanding of the school system in Sri Lanka. Although inclusive education is

encouraged, the common practice for children with severe or visible disabilities is to send them to a special education school or unit, rather than the general education classroom.

## 7.6 Mathematical Reasoning

The mathematical reasoning section asked a series of questions to identify whether the child displays symptoms of mathematical reasoning problems or dysgraphia. Although not as prevalent as language and learning challenges, nearly 10 percent of children had significant difficulty with at least one indicator. In addition, teachers commented in 40 percent of cases that children had other difficulties in mathematical reasoning – typically with logical thinking and calculations.

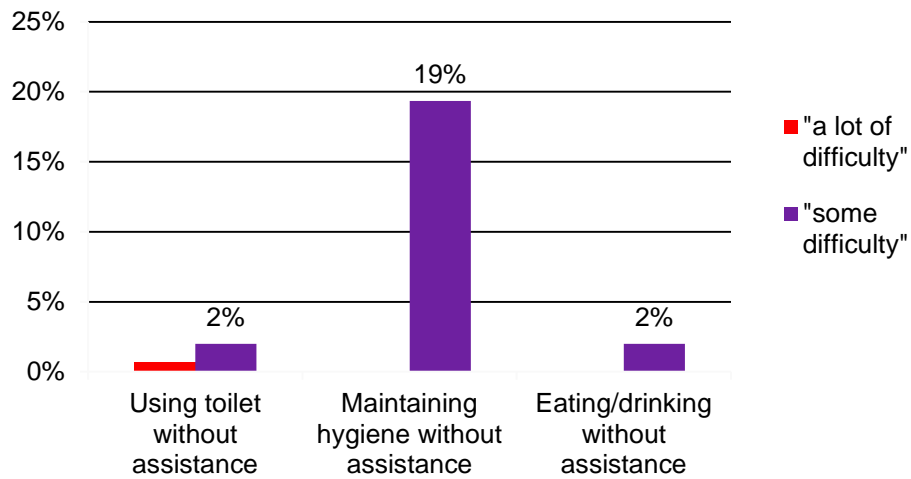


These challenges may indicate specific weakness in math, or – due to the link between recognizing shapes and being able to recreate them on paper – may be related to more general difficulties in writing process. The SNAP tools and Literacy Boost program will guide teachers in helping students organize their thoughts and breaking down instruction to manageable steps for children who are struggling.

## 7.7 Daily Living Skills

The daily living skills sections asked a series of questions to identify whether the child displays symptoms of developmental delay, physical or orthopedic impairment, or intellectual disability. Understandably, given the current practices of keeping children with severe disabilities out of the general education classroom, only one child had “a lot of difficulty” on any of the daily living indicators (who had already been identified as having physical impairments in one hand and one leg).

**Figure 13. Daily Living Skills Challenges**



When the cut-off point was lowered to any child who has “some difficulty” in these areas, we saw a large increase in the number of children who have challenges maintaining his/her hygiene. However, given the small percentage of children who struggled with the other indicators in the section, we hypothesize that poor hygiene is reflective of a lack of will on the part of the children, and not a lack of capability.

## **8 Conclusion**

This Literacy Boost baseline assessment and SNAP pack learning assessment set out to accomplish several things. First, there was the task to assess where grade 2 learners are in general in regards of their reading development. As the data shows, the learners in both the Literacy Boost and comparison schools are fairly proficient learners given their young age. Not surprisingly, these learners come from homes relatively rich in reading materials. Given the emphasis placed on education, it is also not surprising to find that nearly two thirds of students attend some sort of extra class as well, likely contributing to the high initial reading scores. At endline, the assessment team should include the same skills tested at baseline but to consider adding more difficult portions (letters, reading passages, reading comprehension questions) to account for any potential ceiling effects.

A second purpose of this assessment was to establish equivalency between Literacy Boost and comparison learners. Equivalency at baseline allows better conclusions to be drawn at endline. Except for the skills of concepts about print and listening comprehension, learners were statistically equivalent on all measures. For the two sub-skills aforementioned, the differences between groups, while statistically significant, are of an extremely small magnitude and are not programmatically important.



Large differences were seen between boys and girls in terms of reading outcomes, a fact that should be communicated to communities and addressed through advocacy programs in the Literacy Boost schools.

Lastly, the purposive sample of slow learners was compared against their randomly selected peers. It was found that the slow learners do significantly worse, on average, than their non-slow peers for three of the reading sub-skills: concepts about print, letter identification, and most used words. Other skills, such as reading fluency and accuracy, the slow learners achieved statistically equivalent scores with their non-slow peers. Endline assessments will look into whether Literacy Boost helped the slow learners close the gap on the skills in which they lagged behind.

One final purpose of the assessment was to assess how precisely slow learners are struggling. While official diagnoses of learning or other disabilities cannot be determined without a rigorous examination and observation from specialists in the field (and even then, misdiagnoses are common, even within well-established special education systems<sup>5</sup>), the LCSA provides much insight to the types of challenges that are causing children be identified by their teachers as slow learners. By far, the greatest challenge is in the area of language and learning, followed closely by social and behavior challenges. This is to be expected, given the tendency of children with severe and very visible disabilities to be sent to special education schools or units rather than the general education classroom. In general, the results of this evaluation indicate that among children who are viewed as slow learners by their teachers, many are struggling with specific challenges that are indicative of learning disabilities, medical conditions, attendance problems, or challenging home life experiences. Alternatively, almost most none of these slow learners are struggling with language barriers.

The Literacy Boost program and the SNAP pack tools and guidance given to teachers will be adapted based on these assessment outcomes. The program will de-emphasize language barriers and access to mother tongue reading materials, and purposefully focus on strategies and accommodations that teachers can make to help children who may be struggling with language and learning disabilities or behavior problems. The tools shared with teachers will not be limited to these two areas – particularly given the prevalence of other challenges – and an overarching goal of the training will be to help teachers see all children as individuals, and know that with a little extra support or tailored teaching, all children can learn.

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<sup>5</sup> See <http://www.guardian.co.uk/education/2010/sep/14/half-special-needs-children-misdiagnosed>.

## **Appendix A. Inter-rater Reliability**

To test inter-rater reliability, 9 percent of learners (60 out of 640, 2 per every school) 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. Table 1 presents the results below. Using Fleiss' benchmarks for excellent ( $ICC > 0.75$ ), good or fair ( $0.75 \geq ICC > 0.4$ ), and poor ( $0.4 \geq ICC$ ); many of the literacy outcome variables exhibited excellent inter-rater reliability. Table A1 shows the percent of agreement between the raters.

Table A1. Interrater Accuracy and Reliability

Literacy Skill Sub-Test	Inter-rater Reliability	Rating
Concepts about Print	0.98	Excellent
Letter Knowledge	0.90	Excellent
Most Used Words	0.99	Excellent
Fluency	0.99	Excellent
Accuracy	0.99	Excellent
Listening Comprehension	0.98	Excellent
Reading Comprehension	0.98	Excellent

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

## Appendix B. Background Averages and Significant Differences between Groups

Table B1. 2013 Baseline Student Background Data by Literacy Boost and Comparison Schools

	Comparison (N=325)	Literacy Boost (N=315)	Significant Difference
BMI	13.9	13.8	
Height (cms)	114.4	115.4	
Weight (kgs)	18.6	18.5	
% female	48.3%	46.7%	
Age	6	6	
Attended ECD	98.2%	99.7%	*
% who Repeated Grade 2	3.4%	2.5%	
% who have Electricity at home	93.5%	95.9%	
% who have a refrigerator at home	52.6%	61.0%	*
% who have a non-water toilet at home	33.1%	31.2%	
% who have a water toilet at home	64.3%	65.7%	
% who have Bathroom at home	18.0%	17.1%	
% who have Bicycle at home	57.3%	48.6%	
% who have a Car at home	11.5%	11.8%	
% who have a Computer at home	16.7%	13.7%	
% whose family own a Coconut Farm	26.6%	25.7%	
% whose Family owns a Rice Paddy	18.6%	12.4%	*
N of Possessions (out of 10 possible)	3.9	3.8	
Family size	4.8	4.9	
Does Chores at home	96.0%	93.3%	
Never Does Chores	0.6%	2.50%	*
Rarely Does Chores	24.0%	26.0%	
Sometimes Does Chores	25.5%	23.8%	
Always Does Chores	46.5%	43.2%	
N of Chores	1.9	1.8	
Does Chores before school	1.5%	1.3%	
Does Chores after school	90.8%	87.6	
Does Chores before & after school	3.7%	4.1%	
Misses School to do chores	4.5%	1.3%	
Reports not studying	1.5%	3.5%	
Reports studying at home	33.2%	27.9%	
Reports studying at extra classes	6.8%	7.9%	
Reports studying at home and extra classes	58.2%	59.7%	
Minutes spent studying/day	99.9	103.8	
Reports never studying	1.2%	1.9%	
Reports rarely studying	15.7%	18.4%	
Reports sometimes studying	19.4%	17.1%	
Reports always studying	63.1%	61.6%	
Frequency of extra classes per week	1.1	1.2	

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Significant at \* $p < .10$ , \*\* $p < .05$  \*\*\* $p < .01$

Table B2. 2013 Baseline Student Background Data by Slow &amp; Non-Slow Learners

	<b>Non-Slow Learners (N=488)</b>	<b>Slow Learners (N=152)</b>	<b>Significant Differences</b>
BMI	13.9	13.8	
Height (cms)	115.5	115.3	
Weight (kgs)	18.6	18.4	
% female	47.6%	47.4%	
Age	6.0	6.0	
Attended ECD	98.8%	99.3%	
% who Repeated Grade 2	2.9%	3.3%	
% who have Electricity at home	95.1%	93.4%	
% who have a refrigerator at home	58.0%	52.6%	
% who have a non-water toilet at	31.1%	35.8%	
% who have a water toilet at home	66.2%	61.2%	
% who have Bathroom at home	18.7%	13.9%	
% who have Bicycle at home	54.7%	47.1%	
% who have a Car at home	11.8%	11.2%	
% who have a Computer at home	13.6%	20.4%	
% whose family own a Coconut Farm	24.9%	30.3%	*
% whose Family owns a Rice Paddy	14.2%	19.7%	
N of Possessions (out of 10 possible)	3.9	3.9	
Family size	4.9	4.8	
Does Chores at home	94.9%	94.1%	
Never Does Chores	1.4%	2.0%	
Rarely Does Chores	23.4%	30.3%	
Sometimes Does Chores	26.4%	19.1%	
Always Does Chores	45.1%	44.1%	
N of Chores	1.9	1.9	
Does Chores before school	1.4%	1.3%	
Does Chores after school	90.2%	86.2%	
Does Chores before & after school	3.3%	6.0%	
Misses School to do chores	2.8%	3.5%	
Reports not studying	2.5%	2.6%	
Reports studying at home	29.5%	34.2%	
Reports studying at extra classes	7.4%	7.2%	
Reports studying at home and extra	60.0%	55.3%	
Minutes spent studying/day	103.1 minutes	97.7minute	
Reports never studying	1.8%	1.0%	
Reports rarely studying	15.6%	21.7%	
Reports sometimes studying	18.9%	16.5%	
Reports always studying	62.9%	60.5%	
Frequency of extra classes per week	1.2	1	

Significant at \*p&lt;.10, \*\*p&lt;.05 \*\*\*p&lt;.01

Table B3. Significant Differences in 2013 Baseline Student Background Data by Sex

	<b>Boys N=335</b>	<b>Girls N=304</b>	<b>Significant Difference</b>
Height (cms)	116.3	114.5	**
Weight (kgs)	18.9	18.2	**
Significant at *p<.10, **p<.05 ***p<.01			

## Appendix C. Reading Skill Averages and Significant Differences between Groups

Table C1. 2013 Baseline Student Reading Skill Data by Slow & Non-Slow Learners

	<b>Non-Slow Learners</b>	<b>Slow Learners</b>	<b>Significant Difference</b>
Concepts about Print (% correct)	91.1%	86.3%	**
Letter Knowledge (% correct)	86.8%	80.9%	*
Familiar Words (% correct)	83.2%	74.2%	*
Fluency (words per minute correct)	70.7%	61.2%	
Accuracy (% read correctly)	65.7%	57.5%	
Student=Reader (% of sample)	17	15.7	
Reading Comprehension (% correct)	69.8% (N=343)	71.6% (N=93)	
Listening Comprehension(% correct)	64.0 (N=143)	56.7% (N=59)	

Significant at \*p<0.05, \*\*p<.01 \*\*\*p<.001

Table C2. 2013 Baseline Student Reading Skill Data by Literacy Boost and Comparison Schools

	<b>Comparison</b>	<b>Literacy Boost</b>	<b>Significant Difference</b>
Concepts about Print (% correct)	91.5%	88.4%	**
Letter Knowledge (% correct)	86.2%	84.6%	
Familiar Words (% correct)	81.6%	80.6%	
Fluency (words per minute correct)	70.2%	66.7%	
Accuracy (% read correctly)	17.5 wpm	15.9 wpm	
Student=Reader (% of sample)	65.1%	62.4%	
Reading Comprehension (% correct)	63.3% (N=226)	63.1% (N=210)	
Listening Comprehension(% correct)	60.5% (N=97)	51.2% (N=105)	**

Significant at \*p<.10, \*\*p<.05 \*\*\*p<.01

Table C3. 2013 Baseline Student Reading Skill Data by Sex

	<b>Boys N=336</b>	<b>Girls N=304</b>	<b>Significant Difference</b>
Concepts about Print (% correct)	88.5%	91.6%	*
Letter Knowledge (% correct)	83.5%	87.4%	
Familiar Words (% correct)	77.8%	84.7%	
Fluency (words per minute correct)	13.1	20.7	**
Accuracy (% read correctly)	58.0%	70.2%	*
Student=Reader (% of sample)	62.5%	75.0%	*
Reading Comprehension (% correct)	69.7% (N=209)	70.7% (N=227)	
Listening Comprehension(% correct)	62.2% (N=126)	61.4 (N=76)	

Significant at \*p<.10, \*\*p<.05 \*\*\*p<.01

## **Appendix D. Home Literacy Environment Averages and Significant Differences between Groups**

Table D1. 2013 Baseline Student Home Literacy Environment Data by Slow & Non-

	<b>Non-Slow Learners</b>	<b>Slow Learners</b>	<b>Significant Difference</b>
Has Books at home	99.1%	98.7%	
Has Textbooks at home	99.6%	99.3%	
Has Religious books at home	87.2%	82.2%	
Has Newspapers at home	90.7%	84.2%	*
Has Storybooks at home	88.3%	86.8%	
Has Coloring Books at home	71.6%	65.8%	
Has Comics at home	67.9%	72.4%	
N of Book Types at Home	5.1	4.9	
N of Book Types for Children at	2.3	2.3	
Lends Books to Others	56.7%	55.9%	
Reads Books to Others	86.6%	84.9%	
Reports not studying	2.5%	2.6%	
Reports studying at home	29.5%	34.2%	
Reports studying at extra classes	7.4%	7.2%	
Reports studying at home and extra	60.0%	55.3%	
Minutes spent studying/day	103.1 minutes	97.7minute	
Reports never studying	1.8%	1.0%	
Reports rarely studying	15.6%	21.7%	
Reports sometimes studying	18.9%	16.5%	
Reports always studying	62.9%	60.5%	
Frequency of extra classes per week	1.2	1	
Someone at home Seen Reading	92.2%	91.5%	
N See Reading	2.4	2.5	
% See Reading	49.8%	49.6%	
Someone at home helps you study	97.5%	96.7%	
N at home helps you study	2.7%	2.6%	
% helps you study	54.8%	55.0%	
Someone at home Reads to you	90.0%	86.8%	
N Read to you	2.1	2.1	
% Read to you	44.1%	44.0%	
Someone at home tells you stories	92.0%	90.8%	

Significant at \*p<.10, \*\*p<.05 \*\*\*p<.01



Table D2. 2013 Baseline Student Home Literacy Environment Data by Literacy Boost and Comparison Schools

	Comparison	Literacy Boost	Significant Difference
Has Books at home	99.4%	98.7%	
Has Textbooks at home	99.7%	99.4%	
Has Religious books at home	87.6%	84.4%	
Has Newspapers at home	91.0%	87.3%	
Has Storybooks at home	88.5%	87.3%	
Has Coloring Books at home	72.8%	67.6%	
Has Comics at home	72.5%	65.4%	*
N of Book Types at Home	5.1	4.9	*
N of Book Types for Children at Home	2.3	2.2	*
Lends Books to Others	57.7%	55.2%	
Reads Books to Others	88.5%	83.8%	
Reports not studying	1.5%	3.5%	
Reports studying at home	33.2%	27.9%	
Reports studying at extra classes	6.8%	7.9%	
Reports studying at home and extra classes	58.2%	59.7%	
Minutes spent studying/day	99.9	103.8	
Reports never studying	1.2%	1.9%	
Reports rarely studying	15.7%	18.4%	
Reports sometimes studying	19.4%	17.1%	
Reports always studying	63.1%	61.6%	
Frequency of extra classes per week	1.1	1.2	
Someone at home Seen Reading	90.8%	93.3%	
N See Reading	2.4	2.4	
% See Reading	50.1%	49.4%	
Someone at home helps you study	98.5%	96.2%	
N at home helps you study	2.7	2.6	
% helps you study	56.0%	53.7%	
Someone at home Reads to you	91.4%	87.0%	
N Read to you	2.2	2.0	
% Read to you	46.7%	41.3%	*
Someone at home tells you stories	93.9%	89.5%	*
N at home tells you stories	2.2	2.0	
% at home tells you stories	46.4%	41.4%	**

Significant at \*p<.10, \*\*p<.05 \*\*\*p<.01

Table D3. 2013 Baseline Student Home Literacy Environment Data by Sex

	Boys N=335	Girls N=304	Significant Difference
Reads Books to Others	82.7%	90.1%	**
N See Reading	2.3	2.5	*
% See Reading	47.8%	51.9%	**

Significant at \*p<.10, \*\*p<.05 \*\*\*p<.01

## Appendix E. Regression Models by Outcome

VARIABLES	CAP	VARIABLES	Letters	VARIABLES	MUW
Student attends LB school	-0.026* (0.0109)	Sex (Male = 0, Female = 1)	0.035* -0.017	Gender	0.066** (0.020)
Gender	0.038** (0.013)	N of book types	0.028** -0.009	N of book types	0.035** (0.010)
% of family who reads you stories	-0.215* (0.092)	Time spent studying	0.000 (0.000)	Time spent studying	0.0008** (0.000)
N of family who reads you stories	0.050* (0.019)	Lends books to others	-0.059*** -0.015	Lends books to others	-0.071** (0.021)
N of book types	0.020** (0.007)	Student always studies	0.062* -0.025	Someone reads to you	0.086* (0.034)
Time spent studying	0.0004* (0.000)	Someone reads to you	0.0747* (0.028)	N of family reads to you	-0.020* (0.008)
Family size	-0.029* (0.011)	N of family reads to you	-0.0136* (0.006)	Freq of extra class per week	0.034** (0.011)
Lends books to others	-0.024* (0.011)	Freq of extra class per week	0.029** (0.009)	Reads books to others	0.096* (0.038)
Student always studies	0.027* (0.012)	Reads books to others	0.081* (0.030)	Student rarely does chores	0.075** (0.026)
Someone reads to you	0.058* (0.022)	Student rarely does chores	0.061** (0.018)	Student rarely studies	-0.066* (0.029)
N of family reads to you	-0.015** (0.005)	Constant	0.493*** (0.056)	Total present in grade 2	-0.0008 (0.000)
Constant	0.861*** (0.056)	Observations	635	Constant	0.433*** (0.076)
Observations	635	R <sup>2</sup>	0.118	Observations	635
R <sup>2</sup>	0.093	Adjusted R <sup>2</sup>	0.103	R <sup>2</sup>	0.123
		Robust standard errors in parentheses			

Adjusted R<sup>2</sup> 0.077

Robust standard errors in parentheses

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

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

Adjusted R<sup>2</sup> 0.108

Robust standard errors in parentheses

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

VARIABLES	Fluency	Accuracy
Gender	7.734*** (1.090)	0.116*** (0.026)
N of book types	1.342** (0.416)	0.035** (0.013)
Time spent studying	0.078*** (0.019)	0.0009* (0.000)
Lends books to others	-3.414** (1.207)	-0.108** (0.033)
Someone reads to you	4.081** (1.427)	
Reads books to others	5.056** (1.636)	0.175*** (0.042)
N of family helps you study	- 2.773*** (0.739)	
% of family helps you study	13.350** (4.251)	
Student rarely does chores		0.080* (0.037)
Total present in grade 2		-0.002* (0.000)

VARIABLES	Reading Comp
Time spent studying	0.0005 (0.000)
Family size	-0.027** (0.008)
Lends books to others	0.062* (0.024)
Student always studies	0.057 (0.031)
Freq of extra class/week	-0.036** (0.012)
N of chores	0.032* (0.013)
N of children's books	0.028 (0.016)
Constant	0.648*** (0.061)
Observations	434
R <sup>2</sup>	0.097
Adjusted R <sup>2</sup>	0.08

VARIABLES	Listening Comp
Student attends LB school	-0.096* (0.036)
Lends books to others	-0.117** (0.034)
Someone reads to you	0.185*** (0.049)
N of children's books	0.084** (0.024)
Floor Type	0.031* (0.012)
Constant	0.383*** (0.085)
Observations	200
R <sup>2</sup>	0.156
Adjusted R <sup>2</sup>	0.125

Robust standard errors in parentheses

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

% of family reads to you		0.408** (0.122)
N of family reads to you		-0.086*** (0.023)
Freq of extra class/week		0.042** (0.013)
Constant	-7.670** (2.663)	0.213* (0.088)
Observations	634	635
R <sup>2</sup>	0.130	0.108
Adjusted R <sup>2</sup>	0.118	0.094

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

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

## **Appendix F. Learning Challenges Screening Tool**



***Literacy SNAP: Improving learning outcomes for struggling students in Sri Lanka***

**Learning Challenges Screening Tool**

**Learning Challenges Screening Tool**

Student Information				
<b>Student Name</b>				<b>Assessment Number</b>
<b>How often does the child come to school?</b>	<input type="checkbox"/> All of the time (0)	<input type="checkbox"/> Most of the time (1)	<input type="checkbox"/> Some of the time (2)	<input type="checkbox"/> Rarely (3)
<b>Compared with other children of the same age, how is the child's learning achievement?</b>	<input type="checkbox"/> Above average (0)	<input type="checkbox"/> Average (1)	<input type="checkbox"/> Less than average (2)	

Background Information		
<b>1. Has the child been diagnosed with any medical conditions? If so, what?</b>	<i>Have the parents or the child told you that the child has a medical condition? If so, what?</i>	
<b>2. Is the child being treated for any medical conditions? If so, how?</b>	<i>Have the parents or the child told you that the child is taking medication or receiving treatment for a medical condition? (including hearing aids and glasses)</i>	

**Learning Challenges Screening Tool**

<b>3. Do you suspect or know that the child has any disabilities or medical conditions? If so, what?</b>	<i>Have you noticed any other clear physical or intellectual disabilities (extreme challenges) that affect the child's participation in school? If so, what?</i>	
<b>4. What is the outcome of the child's hearing test?</b>	<i>To be completed once the child has received a hearing test.</i>	
<b>5. What is the outcome of the child's vision test?</b>	<i>To be completed once the child receives a vision test.</i>	
<b>6. Does the child speak Sinhalese at home?</b>	<i>Does the child speak Sinhalese at home, or is he/she a native speaker of Tamil or another language?</i>	
<b>7. Is the child struggling with a difficult situation at home?</b>	<i>Are you aware of the child having any emotionally challenging situation at home (for example, being neglected or beaten, recent death of a family member, etc.)?</i>	

**Learning Challenges Screening Tool**

Language and Learning						
<b>8. Does the child have difficulty repeating a song or poem that he/she has been taught?</b>	<i>When tracking the grade level competency, do you notice that the child is having difficulty meeting the competency for memorizing and reciting a word or poem?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>9. Compared to other children in the class, does the child appear to have difficulty understanding others?</b>	<i>For example, when speaking to the child, does he/she seem to understand what you are saying, or does he/she look towards others for guidance on how to react?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>10. Compared to other children in the class, does the child appear to have difficulty remembering what he/she has learned?</b>	<i>Does the child have more difficulty remembering new things than most other students?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>11. Compared to other children in the class, does the child have difficulty expressing him/herself?</b>	<i>When speaking to the child, does he/she have difficulty conveying the meaning of what he/she is trying to say or use a more limited vocabulary than his/her peers? For example, has he/she had any difficulty meeting the grade level competency for clearly explaining an incident that he/she witnessed</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)



**Learning Challenges Screening Tool**

<b>12. Compared to other children in the class, does the child have difficulty speaking clearly enough to be understood?</b>	<i>For example, does the child have any difficulty caused by stuttering or extreme mispronunciation?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>13. Compared to other children in the class, does the child have difficulty listing things in the correct sequence (letters in a word, numbers, parts of a story, etc.)?</b>	<i>For example, has the child had difficulty with the competency “explaining a fable with incidents in the correct order” or listing numbers correctly?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>14. Have you noticed that the child experiences any other difficulties related to language and learning? If yes, please specify.</b>	<i>According to your observations, does the child have any other difficulties with language and learning that have not been reflected above?</i>					<input type="checkbox"/> Not Sure
<b>Possible Causes:</b> Speech and Language Impairment, Dyslexia, Hearing Impairment						

**Learning Challenges Screening Tool**

Social Behaviours						
<b>15. Compared to other children in the class, does the child have difficulty sitting still and focusing?</b>	<i>During class, does the child have difficulty focusing on the lecture, or need frequent reminders to pay attention?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>16. Compared to other children in the class, does the child use objects or classroom materials in unconventional ways?</b>	<i>Does the child use pencils, pen, paper, and crayons in a different way than others?</i>	<input type="checkbox"/> Never (0)	<input type="checkbox"/> Sometimes (1)	<input type="checkbox"/> Often (2)	<input type="checkbox"/> Most of the time or always (3)	<input type="checkbox"/> Not Sure (4)
<b>17. Compared to other children in the class, does the child have difficulty making it through the school day without frequent tantrums or aggressive behaviour?</b>	<i>For example, does the child appear to have difficulty controlling his/her behaviour in the classroom?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>18. Compared to other children in the class, does the child have difficulty interacting cooperatively with other children?</b>	<i>For example, a child who has much difficulty interacting with peers may fight often or frequently spend time alone.</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)

**Learning Challenges Screening Tool**

<b>19. Compared to other children in the class, does the child have difficulty calming him/herself down when unhappy?</b>	<i>For example, a child who has difficulty calming him/herself down may have bad moods that last significantly longer than other students.</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>20. Compared to other children in the class, does the child have difficulty coping with change?</b>	<i>For example, a child who has difficulty coping with change may appear distressed when the class does not follow the standard format or structure that he/she is used to.</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>21. Compared to other children in the class, does the child have difficulty showing happiness when praised?</b>	<i>For example, a child who has difficulty showing happiness at appropriate times may not smile when positive things happen to him/her.</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>22. Compared to other children in the class, does the child have difficulty greeting others appropriately?</b>	<i>For example, does the child behave in a respectful manner when meeting adults?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>23. Have you noticed that the child experiences any other difficulties related to social behaviours? If yes, please specify.</b>	<i>According to your observations, does the child have any other difficulties with social behaviours that have not been reflected above?</i>					<input type="checkbox"/> Not Sure

**Learning Challenges Screening Tool**

**Possible Causes:** Intellectual Disability, ADHD, Emotional Disturbance, Autism Spectrum

Motor Skills and Physical						
<b>24. Compared to other children in the class, does the child have any difficulty physically coming to school?</b>	<i>For example, a child who needs to use a wheelchair, crutches, or significant physical support from a classmate or family member, is experiencing a degree of difficulty physically coming to school.</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>25. Compared to other children in the class, does the child have difficulty physically accessing the classroom?</b>	<i>For example, does the child have difficulty climbing steps or navigating doorways to enter the classroom?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>26. Compared to other children in the class, does the child have difficulty accessing his/her seat in the classroom?</b>	<i>For example, does the child have any physical difficulty navigating through the classroom to his/her seat?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>27. Does the child ever have fits, become rigid, or lose consciousness in the classroom?</b>	<i>Does the child ever have physical episodes that causes him/her to lose consciousness or become unresponsive?</i>	<input type="checkbox"/> Never (0)	<input type="checkbox"/> Sometimes (1)	<input type="checkbox"/> Often (2)	<input type="checkbox"/> Most of the time or always (3)	<input type="checkbox"/> Not Sure (4)

**Learning Challenges Screening Tool**

<b>28. Compared to other children in the class, does the child have difficulty sitting at his or her seat?</b>	<i>Does the child have a physical difficulty that makes it difficult or extraordinarily uncomfortable to sit in his/her classroom seat for the school day?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>29. Compared to other children in the class, does the child have difficulty holding a pencil correctly?</b>	<i>For example, a child who has difficulty holding a pencil may grasp it awkwardly or have a physical challenge affecting his/her hands or fingers.</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>30. Have you noticed that the child experiences any other difficulties related to his/her motor skills? If yes, please specify.</b>	<i>According to your observations, does the child have any other difficulties with motor skills or physical conditions that have not been reflected above?</i>					<input type="checkbox"/> Not Sure
<b>Possible Causes:</b> Physical or Orthopaedic Impairment, Epilepsy						

<b>Mathematical Reasoning</b>						
<b>31. Does the child have difficulty understanding spatial orientation and measurements?</b>	<i>For example, does the child appear to have difficulty understanding the concepts of over, under, next to and/or the concepts of weight, height, length, time, volume, etc.?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)

**Learning Challenges Screening Tool**

<b>32. Does the child have difficulty recognizing numbers?</b>	<i>Does the child appear to have a difficult time recognizing numbers?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>33. Does the child have difficulty recognizing colours?</b>	<i>Does the child appear to have a difficult time recognizing colours?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>34. Does the child have difficulty recognizing shapes and sizes?</b>	<i>Does the child appear to have a difficult time recognizing shapes or meeting the competency for arranging objects in order according to size?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>35. Does the child have difficulty counting from 1 to 10?</b>	<i>Does the child have a difficult time counting from 1-10?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>36. Have you noticed that the child experiences any other difficulties related to mathematical reasoning? If yes, please specify.</b>	<i>According to your observations, does the child have any other difficulties with mathematical reasoning that have not been reflected above? For example, has the child struggled especially on mathematical competencies?</i>					<input type="checkbox"/> Not Sure
<b>Possible Causes:</b> Dysgraphia						

**Daily Living Skills**

**Learning Challenges Screening Tool**

<b>37. Compared to other children in the class, does the child have difficulty eating or drinking without assistance?</b>	<i>Does the child have difficulty eating or drinking without having someone help him/her?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>38. Compared to other children in the class, does the child have difficulty using the toilet without assistance?</b>	<i>Does the child have difficulty using the toilet without having someone help him/her?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>39. Compared to other children in the class, does the child have difficulty maintaining his/her own hygiene without assistance?</b>	<i>For example, can the child wash his/her own hands or maintain his/her hygiene (for example, keeping hair, teeth, and nails clean?) without assistance?</i>	<input type="checkbox"/> No difficulty (0)	<input type="checkbox"/> Some difficulty (1)	<input type="checkbox"/> A lot of difficulty (2)	<input type="checkbox"/> Cannot do it at all (3)	<input type="checkbox"/> Not Sure (4)
<b>40. Have you noticed that the child experiences any other challenges related to self-care? If yes, please specify.</b>	<i>According to your observations, does the child have any other difficulties with self-care that have not been reflected above?</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Not Sure
<b>Possible Causes:</b> Developmental Delay, Physical or Orthopaedic Impairment, Intellectual Disability						