ALL CHILDREN READING: GRAND CHALLENGE FOR DEVELOPMENT

EVALUATION REPORT

Bookshare India: Improving Reading Skills Among Primary Students with Low Vision or Blindness

Implemented by Beneficent Technologies, Inc. in India

JUNE 2017

Prepared by
School-to-School International (STS)
For All Children Reading: A Grand Challenge for Development

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EVALUATION REPORT

Bookshare India: Improving Reading Skills Among Primary Students with Low Vision or Blindness

Beneficent Technologies, India

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List of Acronyms

ACR GCD	All Children Reading: A Grand Challenge for Development
Benetech	Beneficent Technologies, Inc.
CFWP3M	Correct Familiar Words per Three Minutes
CLNP3M	Correct Letter Names per Three Minutes
CSSP3M	Correct Syllable Sounds per Three Minutes
CWP3M	Correct Words per Three Minutes
DAISY	Digital Accessible Information SYstem
EGRA	Early Grade Reading Assessment
EOP	End-of-Project
FOI	Fidelity of Implementation
GoI	Government of India
IRB	Institutional Review Board
M&E	Monitoring and Evaluation
MP3	Moving Picture Experts Group Layer-3 Audio
ORF	Oral Reading Fluency
SD	Standard Deviation
SES	Socioeconomic Status
STS	School-to-School International
URC	University Research Co., LLC
USAID	United States Agency for International Development

I. Executive Summary

All Children Reading: A Grand Challenge for Development (ACR GCD)—a joint partnership between the United States Agency for International Development (USAID), World Vision, and the Australian Government—is an ongoing series of grant and prize competitions that leverage science and technology to source, test, and disseminate scalable solutions to improve literacy skills of early grade learners in developing countries. Round 2 of ACR GCD, which started in 2014 and continues through 2017, supports technology-based innovations to improve early grade reading outcomes in developing countries.[1] These technology-based innovations feature three focus areas:

1. Mother tongue instruction and reading materials
2. Family and community engagement
3. Children with disabilities

ACR GCD increased its focus on the assessment of early grade reading skills to understand the ability of the technology-based innovations to improve the literacy skills of early grade learners. To measure this, ACR GCD uses the Early Grade Reading Assessment (EGRA) to systematically assess reading skills across all Round 2 grantees. The EGRA is an oral assessment that measures students' most basic foundation literacy skills in the early grades—specifically, recognizing letters of the alphabet, reading simple words, understanding sentences and paragraphs, and listening with comprehension. The EGRA methodology was developed under EdData II and has been applied in more than 30 countries and 60 languages. The EGRA instruments used by ACR GCD grantees were adapted to reflect the specific context of each grantee's project, including adaptations for students who have low vision or are blind and students who are deaf or hard of hearing.

Beneficent Technologies (Benetech)—an ACR GCD Round 2 grantee—is a US-based nonprofit that creates scalable technology solutions. Bookshare, Benetech's flagship Global Literacy project, is the world's largest library of accessible books for people who are blind, have low vision, or are otherwise print-disabled.[2] Benetech implemented the Bookshare India project for ACR GCD Round 2 with support from their subcontractor, University Research Co., LLC (URC). The project aimed to improve early grade reading skills—specifically, pre-reading and foundational skills—among students in Grades 2 and 3 who have low vision or are blind. Bookshare India provided human-narrated audio in a moving picture experts group layer-3 audio (MP3) formats and Bharati braille books that were accessed directly by students through Digital Accessible Information SYstem (DAISY) audio players.[3]

To understand how the project impacted participating students' reading skills, School-to-School International (STS), Benetech, and URC conducted EGRAs twice during the project: baseline data were collected from December 2015 to January 2016, and endline data were collected in January 2017.

During the endline data collection, STS also conducted end-of-project (EOP) interviews with the Bookshare India project staff, teachers, and students. The interviews sought to explore any lessons learned from project implementation, better understand how the project impacted students and teachers, and assess the potential scalability of the Bookshare India project.

The following report presents a summary of lessons learned from project implementation, comprehensive EGRA results, and scalability assessment results.

1 Retrieved from: http://allchildrenreading.org/about-us/

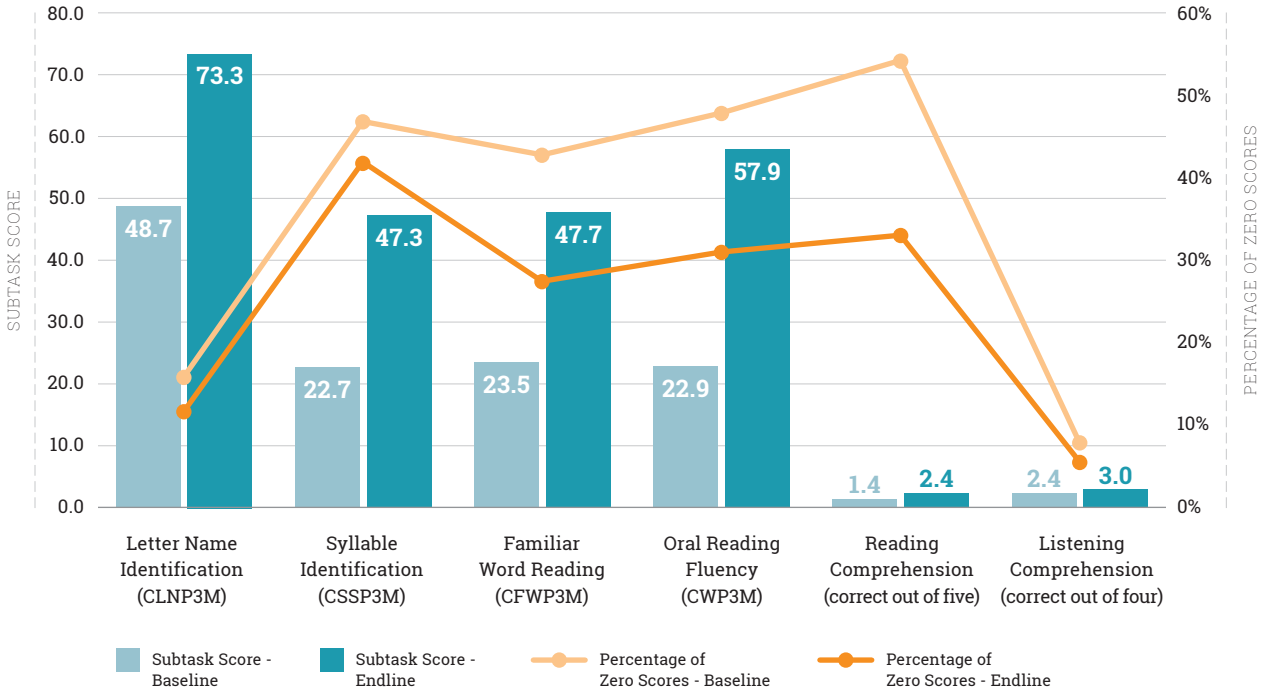
2 Retrieved from: https://www.bookshare.org/cms/. Bookshare currently hosts over 500,000 accessible ebooks titles and is available in over 70 countries to membership partners that verify proof of a print disability.

3 DAISY is a technical standard for digital talking books for people who have low vision or are blind or who have a print disability (e.g. dyslexia). DAISY is an audio substitute for print material that allows users to search, navigate, place bookmarks, and regulate the speaking speed of books found in the digital repository.

Key Findings

- On average, **students improved their scores on all EGRA subtasks,** and results at endline were statistically higher than at baseline. Although some students improved more than others, both male and female students, students in Grades 2 and 3, and both low vision and blind students improved from baseline to endline.
- **The percentage of students unable to correctly respond to a single item within a subtask decreased** from baseline to endline. The largest percentage of decreases were observed on familiar word reading, oral reading fluency (ORF), and reading comprehension (16.4, 16.6, and 20.9 percentage points, respectively).

Figure 1: **Mean Results by EGRA Subtask**[4]



- **There was not a consistent trend in reading gains by gender across subtasks.** Boys appear to have made greater improvements than girls on four subtasks (letter name identification, syllable identification, reading comprehension, and listening comprehension), but girls demonstrated greater improvement on the ORF subtask than boys. With the current sample size, it is not possible to conclusively determine whether boys or girls benefitted more from the Bookshare India project.
- **Students who are blind and students who have low vision made similar gains across EGRA subtasks,** with the exception of syllable identification and listening comprehension. On the syllable identification subtask, students categorized as blind identified, on average, 7.2 more correct syllable sounds than their peers who had low vision. However, on the listening comprehension subtask, students who have low vision showed more improvement, answering 1.2 more questions correctly (out of four) at endline than baseline, while their peers who are blind answered 0.4 fewer questions correctly at endline than baseline. With the current sample size, it is not possible to conclusively determine if students categorized as low vision or blind benefitted more from the Bookshare India project.

4 Results in the figures are based on the combined results of students in Grade 2 and Grade 3 (unless otherwise noted).

- During end-of-project interviews and on endline questionnaires, **students reported high engagement in the project** and expressed high levels of comfort using the technology for learning. Students appeared to have moderately favorable attitudes towards reading.
- On endline questionnaires, **students reported uneven exposure to Marathi language and moderate access to learning materials in braille.** Students who reported having more access to reading materials made greater improvements on the letter name identification, syllable identification, familiar word reading, and ORF subtasks.
- On endline questionnaires, **most students report receiving low levels of reading support from their families.** However, students who reported receiving high levels of family reading support appear to have made greater gains on syllable identification, familiar word reading, ORF, and reading comprehension.
- According to the project plan, each student was to receive 3,000 minutes of guided and independent reading time between the baseline assessment and the endline assessment. For a variety of scheduling and project implementation issues, **students received an average of 2,000 minutes of guided and independent reading time, or 64.2 percent of the planned reading time.**

II. Project Description

The Bookshare India project had three intervention components: provision of appropriate reading materials to students, weekly classroom visits by a local "story uncle or auntie," and consistent independent reading time for students each day at school. For the first component, the Bookshare India project utilized a web-based platform to host and deliver human-narrated audio (MP3) stories and Bharati braille books; students could then access these materials directly through DAISY players. Books were selected to be age appropriate and of high interest to students. Teachers also received training on literacy instruction and the use of the provided reading materials.

The story uncle or auntie, a Benetech staff member, visited schools once or twice each week to lead students in 30 minutes of guided reading outside of regular school hours. They used handheld teaching tools called slate and cube kits to expose students to basic reading and writing concepts in braille, concentrating on braille words already familiar to students through spoken language. The story uncle or auntie also guided students on using the DAISY players to listen to audio books as they followed along in braille storybooks. For the third component—independent reading time—students had the opportunity to practice reading for 15 minutes daily using their braille storybooks and the DAISY players, except on the days when the story uncle or auntie visited.

The Bookshare India project operated within a school environment and sought to encourage development in pre-reading and foundational literacy skills. The project reached 131 students who have low vision or are blind in Grade 2 or Grade 3 at four schools in Maharashtra, India.[5] However, since one school served as a pilot for the project, data were only collected from three schools.[6]

III. Research Purpose and Design

The Bookshare India project aimed to improve reading skills for students who have low vision or are blind in Grades 2 and 3 by increasing their access to braille materials and guided reading. The research conducted by STS, Benetech, and URC sought to answer a key research question specific to the Bookshare India project: *Does the Bookshare India project improve the reading skills of students who have low vision or are blind?*[7]

5 All schools that participated in the Bookshare India project are boarding schools that offer residential programs. Some students reside at the school and make use of boarding facilities, while other students live nearby and commute to their homes at the end of the school day.

6 See the discussion in the Sample section.

7 The research question was modified from baseline to better capture the objective of the Bookshare India project and to respond to the data collected throughout the project.

In addition, EOP research was conducted to answer the following supplemental questions common to all ACR GCD grantees:

1. How successful was the rollout of the intervention?
2. How did the project influence or impact adults' (teachers, parents, community members) knowledge, skills, or attitude regarding their role in helping children read?
3. How did the project influence certain subsets of the student population more than others based on identifiable contextual factors?
4. How much did the development, implementation, and management aspects of the project cost?
5. Are this project and technology suitable for scaling?

To answer these research questions, STS, Benetech, and URC collected EGRA data twice during the project. Baseline data were collected during the period from December 2015 to January 2016, and endline data were collected in January 2017. Because the research design did not include a comparison group, a reflexive comparison design was used. This allowed the intervention group's results to be compared at baseline and endline to determine the extent to which the intervention succeeded (see Considerations section). Qualitative and cost data were also collected to answer ACR GCD's supplemental questions.

Sample

Four schools in the state of Maharashtra were selected to be part of the Bookshare India project.[8] Three of the four were included in the research study; the fourth was excluded because it was the school randomly selected to serve as the pilot test site for the EGRA tool. All Grades 2 and 3 students who have low vision or are blind were part of the research sample. A total of 66 students were assessed at baseline, and 49 students were assessed at endline. Table 1 provides characteristics of the final student sample used for reporting.

Table 1: **EGRA Sample Characteristics**

Characteristic		Number of Students
Grade at baseline	Grade 2	16
	Grade 3	33
Gender	Male	24
	Female	25
Visual status	Low vision	24
	Blind	25

STS, with support from World Vision, conducted EOP interviews on January 9–13, 2017. Interviews explored the contextual factors that may have impacted the project's implementation and student reading gains. Responses also identified considerations for future scalability of the project. EOP interview details are provided in Table 2.

Table 2: **EOP Interview Sample**

Type of Interview	*N*	Description
Project management	7	Five Benetech staff and two URC consultants
Teacher	6	Six teachers
School administrator	3	Two headmasters and one school administrator
Student	14	Eight girls and six boys
Total	**30**	

8 The four schools were the only schools in the selected region to exclusively serve students who have low vision or are blind.

Project management interviews were conducted with Benetech and URC staff members. All available teachers and headmasters who participated in the Bookshare India project were interviewed. Students were randomly selected for interviews based on attendance at school on the day of interviews.

IV. Fieldwork Preparation and Data Collection

EGRA Instrument

The Marathi EGRA instrument was developed for students in Grades 2 and 3 during a five-day instrument adaptation workshop in October 2015; it was then transcribed into Bharati braille, a common braille script used for most languages in India.[9] The EGRA instrument used at baseline and endline consists of six subtasks: letter name identification, syllable identification, familiar word reading, oral reading fluency (ORF), reading comprehension, and listening comprehension.

Institutional Review Boards

Institutional Review Boards (IRBs) are responsible for ascertaining the acceptability of proposed research with regard to institutional commitments and regulations, applicable laws, standards of professional conduct and practice, and ethical and societal norms. IRBs examine subject recruitment procedures, proposed remuneration, and the informed consent process. IRBs also evaluate the potential risks and benefits to participants outlined in each protocol.

The EGRA instruments used for baseline and endline assessments were reviewed by URC's IRB and approved on November 5, 2015.

Baseline EGRA

The baseline EGRA assessor training took place from October 12 to 14, 2015 (see Table 3). The two assessors participated in the adaptation workshop; during the training, they learned to administer the EGRA on electronic tablets and paper. The assessors also underwent assessor accuracy testing, which is conducted to ensure consistency in scoring between assessors and to measure the degree to which assessors agree in their assessment decisions.[10] At least 90 percent consistency is considered the minimum requirement; this means that at least 90 percent of assessors' ratings must be consistent with the list of acceptable responses. The two assessors met the 90 percent threshold.

Table 3: **Fieldwork Preparation and Data Collection Timeline**

Task	Dates
EGRA instrument adaptation workshop	October 6–10, 2015
Baseline assessor training including pilot test and assessor agreement	October 12–16, 2015
Baseline EGRA operational data collection	December 14, 2015–January 12, 2016
Endline EGRA refresher training, EOP interviews, and operational data collection	January 8–26, 2017

Following assessor training, assessors collected operational baseline EGRA data between December 14, 2015, and January 12, 2016.

9 The Marathi EGRA instrument is also being used by ACR GCD grantee Sesame Workshop India Trust for the Play.Connect.Learn project.

10 Assessor accuracy testing is similar to interrater reliability testing. According to the *EGRA Toolkit (2nd Edition)*, assessor accuracy refers to the testing conducted during training, while interrater reliability is conducted during operational data collection.

Endline EGRA

The endline EGRA was conducted from January 8 to 26, 2017, in the three research schools. Before operational data collection, STS conducted a one-day refresher training that included assessor accuracy testing and review sessions on the EGRA instrument and administration. The two assessors who collected baseline data also conducted the endline data collection.

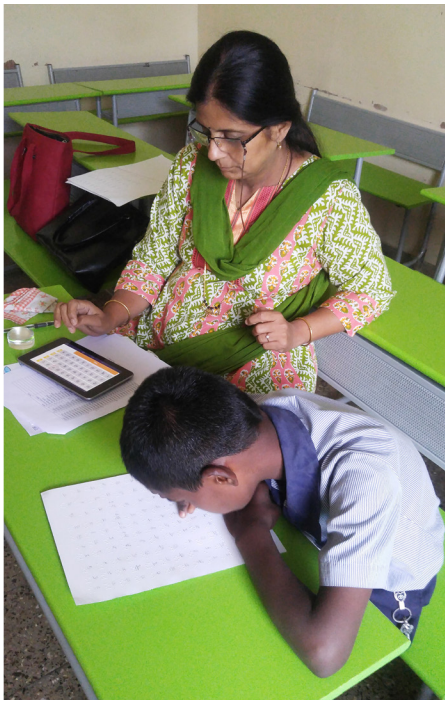
End-of-Project Interviews

STS and World Vision conducted EOP interviews from January 8 to 13, 2017. The purpose of the interviews was to explore the contextual factors that may have impacted the variations in implementation and differing results between schools and students. EOP interviews were conducted with four groups of project participants: project management, teachers, school administrators, and students.

Project management interviews consisted of open-ended questions related to general information about the project and the intervention timeline, characteristics of the implementing organizations, perceptions of project design and implementation quality, and considerations for scalability. Benetech and URC staff members directly involved in the implementation of the Bookshare India project were interviewed.

Teachers and headmasters/school administrators were asked 22 open-ended questions related to the Bookshare India project and its technologies, challenges they faced in implementing the project with fidelity, their practices for teaching students who have low vision or are blind, and the project's potential for scalability. When present, headmasters and school administrators were also interviewed about challenges faced by their teachers in implementing the Bookshare India project and the scalability of the project.

Students were asked 18 open-ended questions related to their engagement in the Bookshare India project, their disposition toward reading, their access to reading materials, and if they prefer learning with the Bookshare India project.



V. Project Implementation

The Bookshare India project began on April 1, 2015, and will end on June 30, 2017.[11] This section presents implementation challenges, solutions, and successes that help answer the ACR GCD research question: *How successful was the rollout of the intervention?*

Development

The Bookshare India project required engineering of the Benetech software to enable the import, hosting, and distribution of Marathi content in human-narrated audio (MP3) and electronic braille file formats. The MP3s were loaded on the DAISY players so students could listen to the stories; the electronic braille files enabled these stories to be printed as braille books. The development phase of the project began at the project's launch and was completed by September 2016, when the final set of Marathi-language human-narrated stories were completed.

Engineering work was completed relatively early in the project, with all critical components tested and completed by December 2015. Subsequently, the project primarily focused on regular maintenance and user experience updates. During the third quarter of 2015, the project began producing audio and braille formats of stories, in partnership with National Association for the Blind (Delhi State Branch) and Pratham Books. Books were created and loaded onto the DAISY players at schools in sets of ten. The first set reached schools between January and March, 2016, and the final set reached schools between July and September, 2016.

Overall, development challenges were limited—a likely result of Benetech's longstanding experience working with digital books. The project did have to mitigate some copyright issues, though these did not affect timelines significantly. Additionally, after the first set of stories was distributed to all four schools, teachers and students provided feedback that the audiobooks were read too fast for students to be able to follow along in braille. This challenge was quickly resolved by engaging a teacher from one of the intervention schools to help re-record books with a slower reading rate. More notably, project feedback indicated that the stories were not appropriately leveled for the students. While some were much too easy and did not provide adequate levels of difficulty, others were too complicated, and students struggled to understand the meaning. This challenge indicates that the project could have benefitted from a greater investment of time and resources in identifying appropriately leveled books.

Implementation

Project implementation began in August 2015 when Bookshare India team members initiated training and outreach with intervention schools and teachers. In November, an official training session was held for teachers, head teachers, and school administrators. Participants received information on the Bookshare India project and research study, as well as technical training on the DAISY players and braille materials provided by the project.

The most significant challenges faced by the project were in implementing components as intended. According to the project design, the story uncle or auntie should have visited schools weekly and teachers should have provided 15 minutes of independent reading time to students daily. However, due to personnel turnover, school calendars, and lack of understanding of the expectations for independent reading, students did not receive the expected amount of exposure to the project's components. There were periods during which, due to staff turnover, Benetech did not employ a story uncle or auntie; therefore, students did not receive any visits for guided reading during these periods. Additionally, project staff reported that in some cases teachers did not ensure that students were given independent reading time daily. Although it was the role of Benetech team members to encourage teachers to adhere to this project requirement, the lack of continuity between different story uncles and aunties, as well as

11 Project implementation in the schools ended in January 2017. Benetech was awarded additional ACR GCD funding to convert and host 500 Indian language books on the Bookshare India website. This work will continue until June 30, 2017 when the project contract ends.

a lack of general understanding from team members on how best to engage teachers in the project, undoubtedly hindered the implementation of the independent reading component.

Management

The Bookshare India project was designed to be implemented by Benetech with monitoring and evaluation (M&E) support provided by URC. Project staff did not express any confusion over the division of responsibilities between the two organizations. Some staff members were concerned that the strict compartmentalization of M&E activities to URC restricted the ability to incorporate feedback into implementation. Additionally, project staff widely recognized that not enough human resources were available locally to effectively conduct project start up and that there were challenges providing staff with adequate training throughout the project. Staff turnover during the project was cited as a specific challenge, especially given that institutional and project-specific knowledge was often not captured or passed on to new staff members.

Fidelity of Implementation

Fidelity of implementation (FOI), by definition, is the accurate and consistent application of an agreed upon procedure, and FOI research is used to assess the degree to which a project is implemented as intended. Measuring FOI helps implementers and researchers understand and differentiate between what was supposed to happen and what actually happened during the life of a project. When FOI is high and gains are experienced by an intervention group, then it is sometimes possible to attribute impact to the intervention; this, in turn, makes it possible to recommend scaling the intervention. FOI also makes it possible to identify which components of an intervention are most strongly associated with outcomes. When FOI is low, implementers and researchers are unable to assess the quality of the design of the project or to attribute any observed impacts to the project. Beyond attribution, FOI can also be coupled with M&E to provide feedback to implementers during the project cycle to improve adherence to project design in the case of low FOI.[12]

As part of their projects, all ACR GCD Round 2 grantees conduct FOI research during the implementation period. The primary objectives of FOI for grantees were to

1. Understand what FOI is and why it is important throughout the life of the project
2. Identify essential components, activities, and questions for each phase of project implementation
3. Create relevant, project-specific FOI tools to monitor participant adherence to the intervention plan

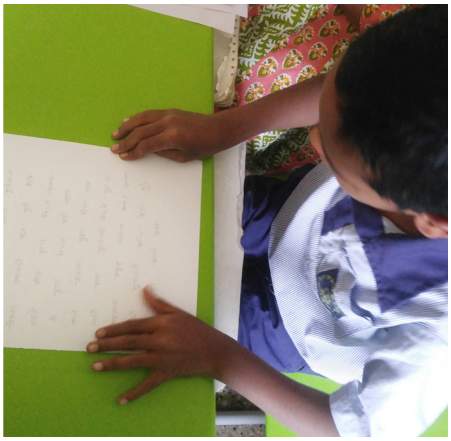
STS held a series of FOI meetings with each ACR GCD grantee to develop project-specific FOI tools and an implementation plan for FOI research. After finishing the FOI sessions, ACR GCD grantees were expected to pilot test their FOI tools and collect data. Grantees were advised to collect a minimum of one round of FOI data; two or more rounds of data collection were considered ideal.

The collected data served several purposes:

1. To indicate where revisions in data collection tools were necessary
2. To highlight where improvements in implementation were needed
3. To attribute impact when combined with assessment data

12 Creative Associates International, Inc. (2015). *Fidelity of Implementation (FOI) How-to Guide* (unpublished). United States Agency for International Development (USAID). Washington, D.C.

Benetech and URC staff involved in the Bookshare India project participated in a series of FOI working meetings conducted online, developed FOI tools, and collected FOI data. FOI data collection began in January 2016 and was collected monthly until the end of implementation in January 2017. URC staff, in collaboration with the Bookshare India team, collected student-level dosage data, including how many minutes of story uncle- or auntie-guided reading time and independent reading time students received per week. Data were also collected on access to DAISY players and reading materials. FOI data for the Bookshare India project were used in the analyses of student reading outcomes, particularly for examining variations in student reading ability through dosage data (see EGRA Results by Level of Dosage).



VI. EGRA Data Analysis

EGRA data were analyzed using Microsoft Excel and IBM SPSS Statistics. Only students who had data at both baseline and endline were included. EGRA subtask results were matched by student and compared by time period to calculate reading gains over the life of the project.[13] Subtask fluencies and accuracy scores were reported with mean scores and standard deviations (SD) relevant to those mean values.[14] Zero scores[15] were also calculated for all subtasks. Differences between student scores at baseline and endline were tested for significance using paired t-test analysis. Results with statistically significant differences are reported throughout with an asterisk. Where results are not statistically significant, it is not possible to assume that there is any difference between the baseline and endline results.

For each subtask, decision rules were applied to assess whether outliers would need to be removed. For example, if the time remaining for a timed subtask resulted in a fluency rate that was outside a reasonable range, then that student's fluency rate was not included in the analyses. Reasonable ranges for the time remaining were based on multiple factors, including the rate at which letters or words in the language tested are typically read, the distribution—or relative performance—of students in the sample, and the mean fluency rate with and without the outlier data point(s). After consideration of the reasonable ranges in the data, one outlier was removed.[16]

Table 4 provides details on the EGRA subtasks, including how results were calculated.

13 Because of rounding, mean changes reported may not always equal endline value minus baseline value.

14 SD describes how much observed values vary from the mean. A smaller SD indicates that the majority of values are close to the mean; a larger SD indicates that values are further from the mean. This report provides mean fluencies and scores of the entire sample of students participating in the Bookshare India project and within specific subgroups of students. Standard deviations are listed to understand the variability of the scores within the sample.

15 Students receive a zero score if they are unable to correctly identify a single item on a subtask. In this report, zero scores are shown as the number of students and/or as the percent of the total students unable to correctly identify a single item on a subtask.

16 On baseline, the outlier student had rates and scores more than three standard deviations above the mean, and at endline, the student received zero scores on most subtasks.

Table 4: **EGRA Subtask and Data Analysis Method**

Subtask	Type	Analysis
Letter name identification	Timed	Letter name identification is measured as correct letters named per three minutes (CLNP3M). Letter name identification is a measure of alphabet knowledge and is highly predictive of later reading achievement. Each student had the opportunity to name up to 100 letters in three minutes.
Syllable identification	Timed	Syllable identification is measured as correct syllable sounds read per three minutes (CSSP3M). Syllable identification is a measure of knowledge of the sounds of letter combinations and is a more advanced predictor of decoding ability. Each student had the opportunity to read up to 100 syllable sounds in three minutes.
Familiar word reading	Timed	Familiar word reading is measured as the number of correct familiar words read per three minutes (CFWP3M). Familiar word reading measures word recognition and decoding. Each student had the opportunity to read up to 50 high-frequency words in three minutes.
Oral reading fluency (ORF)	Timed	ORF is measured as correct words read per three minutes (CWP3M). ORF is a decoding and reading fluency measure. Each student had the opportunity to read 59 words in three minutes. The ORF passage formed the textual basis for the reading comprehension subtask.
Reading comprehension	Untimed	Reading comprehension is measured as the number of correct answers orally delivered to the assessor based on questions asked about the passage read as part of the ORF subtask. Each student had the opportunity to answer up to four factual questions and one inferential question.
Listening comprehension	Untimed	Listening comprehension is measured as the number of correct answers orally delivered to the assessor. Listening comprehension is a measure of vocabulary. Each student had the opportunity to answer three factual and one inferential questions based on a passage read aloud to them by the assessor.

Considerations

Comparison Group

The research design for this project did not include a comparison group. The purpose of comparison groups is to provide a counterfactual measure or a measure of the changes that occurred in the absence of a project or intervention. Because the student population of the Bookshare India project attended schools that specifically serve students who have low vision or are blind, there were not adequate schools nearby from which to construct a comparison group. As a result, the findings of this report should be understood as the changes that occurred from a combination of the project and an additional year of schooling. It is not possible to fully isolate how much of the measured change from baseline to endline is due to the project and how much is due to an additional year of schooling. However, FOI data allow us to examine the differences in student performance when the dosage of the intervention was low compared to when it is high.

Sample Size and Significance Testing

49 students were tested at both baseline and endline. Significance testing was conducted across the entire sample on the difference in baseline and endline results, meaning that it was possible to determine if endline results were significantly larger than baseline results for all students. However, given the small sample size,

no significance tests—neither analysis of variance (ANOVA) nor chi-squared[17]—were conducted on the differences in means across subgroups (i.e. grade level, gender, or visual status). Because of this, results presented for subgroups in this report should be interpreted with an understanding of the limitations of the research sample: without a larger sample size, it is not possible to conclusively determine if there were significant differences between results for subgroups.

Extended Time for Students Who Have Low Vision or are Blind

Timed EGRA subtasks are generally administered to students without a sight disability in a one minute period, and results are reported as the number of correct items identified per minute. After consultation with special needs experts, it was decided that students in the Bookshare India project should receive three minutes to complete timed subtasks.[18] Extending the time gave the students, who conducted the subtasks in braille, enough time to complete the assessment. All timed subtask results presented in this report are fluency rates per three minutes—a consideration that should be taken into account when comparing results to subtask fluencies with sighted students timed at the one minute mark.

17 Analysis of Variance (ANOVA) is a statistical model t ıat is used to analyze the differences between group means, which helps identify differences in the sample that can be generalized to the population. The chi-square test is a statistical test comparing proportion of students with zero scores that were observed in the data against what was expected.

18 ACR GCD grantees Catholic Relief Services and Resources for the Blind, Inc., also supported students who have low vision or are blind and administered EGRAs with three minutes for timed subtasks.

VII. EGRA Results

This section presents EGRA results to understand whether the reading skills of Grade 2 and Grade 3 students in the Bookshare India project increased from baseline to endline. It also helps answer the research question: *Does the Bookshare India project improve the reading skills of students who have low vision or are blind?* The following section contains findings across EGRA subtasks as well as detailed results for each subtask by grade. EGRA results also explored gender, visual status, and levels of project dosage by school and student.

Figure 2 presents results for students across grades. Overall, students participating in the Bookshare India project showed improved reading skills at endline; mean scores are also significantly higher at endline than at baseline for all subtasks.

Figure 2: **Mean Results by EGRA Subtask at Baseline and Endline**[19]

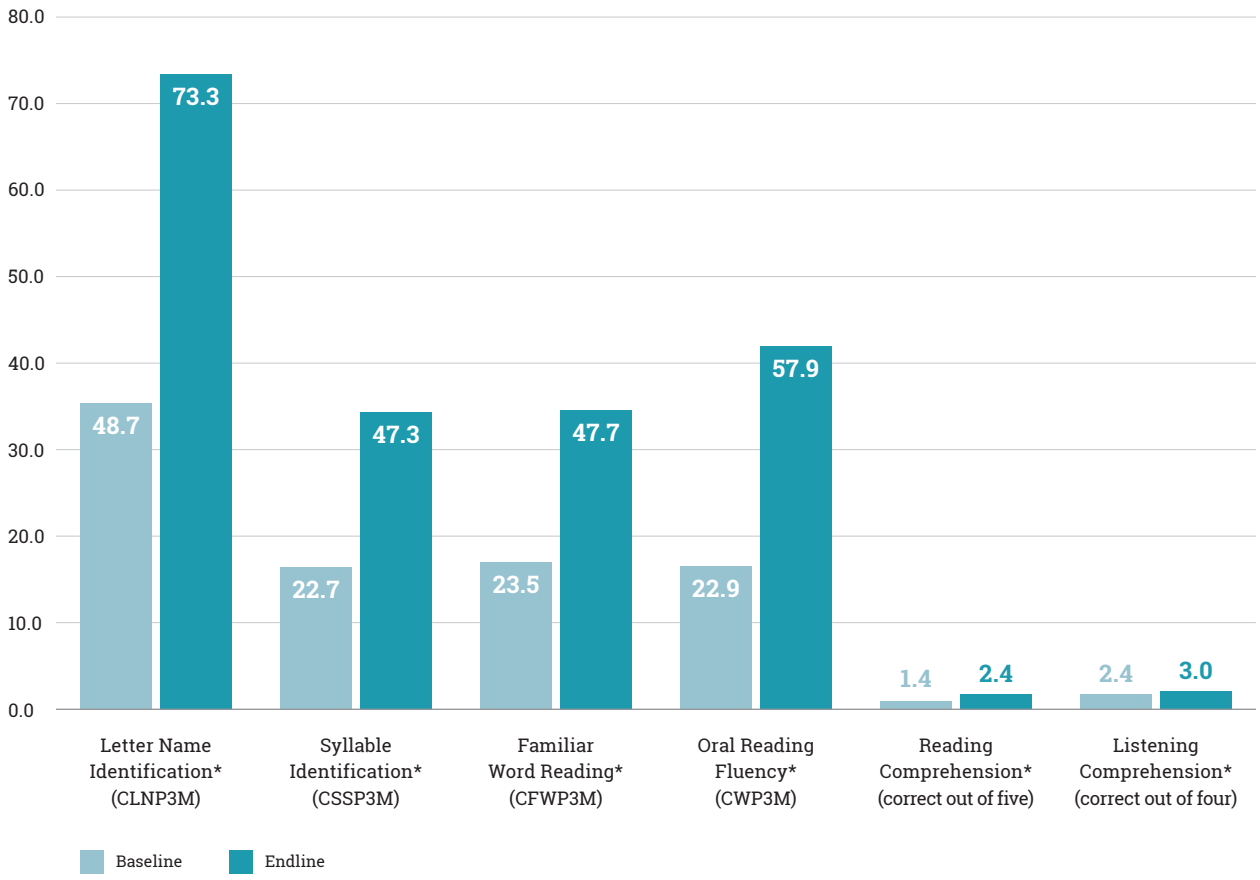
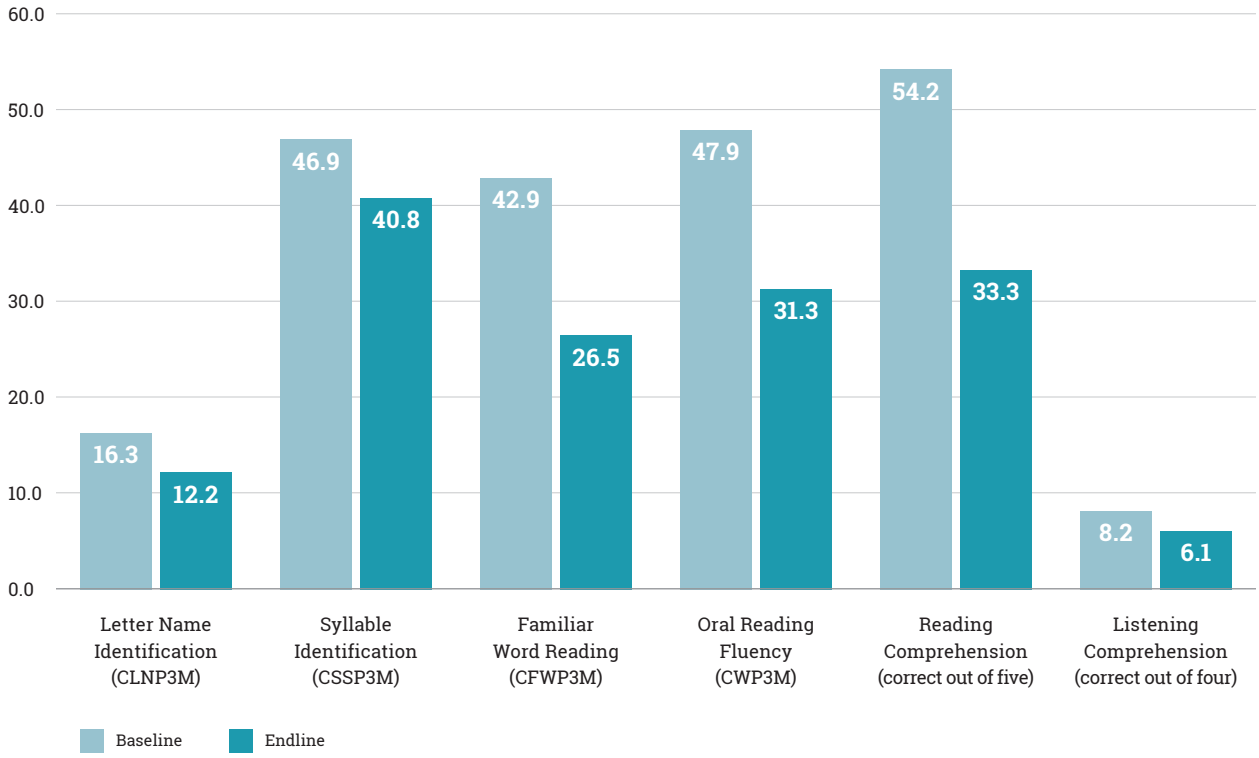


Figure 3 shows the percentage of students who received zero scores at baseline and endline. The proportion of students who received zero scores was lower at endline than at baseline on all subtasks, meaning that more students were able to identify or answer at least one item correctly at endline.

19 An asterisk (*) indicates that the endline subtask mean was significantly higher than the baseline subtask mean at $p<0.05$. For letter name identification, syllable identification, familiar word reading, and listening comprehension, N=49; for ORF and reading comprehension, *N*=48.

Figure 3: **Percentage of Students Receiving Zero Scores by EGRA Subtask at Baseline and Endline (%)**[20]



EGRA Results by Subtask

Letter Name Identification

Letter name identification measures students' knowledge of the alphabet and is predictive of later reading success. For this subtask, students were presented with a stimulus of 100 letters and were asked to name as many as they could in three minutes. The subtask was discontinued if a student was unable to correctly name any of the first ten letters of the stimulus. The mean identification rates, reported as correct letter names per three minute (CLNP3M), are presented in Table 5.

Table 5: **Letter Name Identification Rate (CLNP3M) by Grade**

Grade at Baseline	*N*	Baseline			Endline			Mean Change
		Mean Rate	SD	Zero Scores *n* (percentage)	Mean Rate	SD	Zero Scores *n* (percentage)	
Grade 2	16	34.7	37.6	3 (18.8%)	54.6	58.0	4 (25.0%)	19.9
Grade 3	33	55.5	48.0	5 (15.2%)	82.3	49.1	2 (6.1%)	26.9
Total: All Students	**49**	**48.7**	**45.5**	**8 (16.3%)**	**73.3**	**53.2**	**6 (12.2%)**	**24.6**

20 For letter name identification, syllable identification, familiar word reading, and listening comprehension, *N*=49; for ORF and reading comprehension, *N*=48.

Students' mean identification rate for the letter name identification subtask was significantly higher at endline than at baseline. **On average, students were able to identify 24.6 additional letters within three minutes at endline than at baseline.** Students in Grade 3 showed an average increase in identification of 26.9 CLNP3M, while students in Grade 2 showed an average rate increase of 19.9 CLNP3M. Overall, 12.2 percent of students could not name a single letter at endline; this was a four percentage-point decrease from baseline. Notably, the percentage of Grade 2 students unable to correctly identify a single item increased from 18.8 percent at baseline to 25.0 percent at endline, while the mean identification rate for Grade 2 students increased from 34.7 CLNP3M at baseline to 54.6 CLNP3M at endline. The improvement in Grade 3 students' mean identification rate over time was accompanied by a decrease in the percentage of students unable to correctly identify a single item—from 15.2 percent at baseline to 6.1 percent at endline.

Syllable Identification

The syllable identification subtask measures students' understanding of how letter combinations correspond to specific sounds. To demonstrate syllable identification, students must vocalize the appropriate sounds for each syllable. The ability to match letters with correct sounds is critical to reading fluency and comprehension. For this subtask, each student was presented with a stimulus of 100 syllables and asked to read as many of the sounds as they could in three minutes. The subtask was discontinued if a student was unable to correctly identify any of the first ten syllables on the stimulus. Results for the syllable identification subtask are presented in Table 6.

Table 6: **Syllable Identification Rate (CSSP3M) by Grade**

Grade at Baseline	*N*	Baseline			Endline			Mean Change
		Mean Rate	SD	Zero Scores *n* (percentage)	Mean Rate	SD	Zero Scores *n* (percentage)	
Grade 2	16	14.5	23.5	10 (62.5%)	28.9	45.5	10 (62.5%)	14.4
Grade 3	33	26.7	31.8	13 (39.4%)	56.2	50.3	10 (30.3%)	29.5
Total: All Students	**49**	**22.7**	**29.7**	**23 (46.9%)**	**47.3**	**50.0**	**20 (40.8%)**	**24.6**

Students' mean identification rate for the syllable identification subtask was significantly higher at endline than at baseline. **On average, students were able to correctly identify 24.6 additional syllable sounds within three minutes at endline than at baseline.** Students in Grade 3 showed a higher average improvement in identification rate than students in Grade 2 (29.5 CSSP3M compared to 14.4 CSSP3M, respectively). Overall, the percentage of students unable to identify a single syllable sound correctly on this subtask decreased from 46.9 percent at baseline to 40.8 percent at endline. The percentage of Grade 2 students unable to correctly identify a single syllable sound remained the same across both test administrations; Grade 3 showed a 9.1 percentage point decrease in the number of students unable to correctly identify a single syllable sound from baseline to endline on this subtask.

Familiar Word Reading

Knowledge of familiar words and the ability to read them quickly enables a child to read with automaticity—a skill critical to learning to read with fluency and comprehension. In the familiar word reading subtask, students were presented with 50 familiar words[21] and asked to read as many as they could within three minutes. The subtask was discontinued if a child was unable to name correctly any of the first five familiar words. Results for the familiar word reading subtask are presented in Table 7.

Table 7: **Familiar Word Reading Rate (CFWP3M) by Grade**

Grade at Baseline	*N*	Baseline			Endline			Mean Change
		Mean Rate	SD	Zero Scores *n* (percentage)	Mean Rate	SD	Zero Scores *n* (percentage)	
Grade 2	16	14.5	22.9	10 (62.5%)	38.9	46.1	4 (25.0%)	24.5
Grade 3	33	27.9	35.5	11 (33.3%)	51.9	46.9	9 (27.3%)	23.9
Total: All Students	**49**	**23.5**	**32.3**	**21 (42.9%)**	**47.7**	**46.6**	**13 (26.5%)**	**24.1**

Students' mean reading rate for the familiar word reading subtask was significantly higher at endline than at baseline. **On average, students were able to correctly read 24.1 additional familiar words per three minutes at endline than at baseline.** Overall, the percentage of students unable to correctly identify a single familiar word decreased from 42.9 percent at baseline to 26.5 percent at endline. Grade 2 students showed a 37.5 percentage point decrease from baseline to endline on zero scores even though their improvement in mean reading rates was similar to Grade 3 students, who only experienced a 6.0 percentage point decrease in zero scores. This indicates that even though Grade 2 students increased their reading at similar rates as Grade 3 students, more Grade 2 students moved from receiving zero scores at baseline to reading at least one familiar word correctly at endline.

Oral Reading Fluency

The ORF subtask measures students' overall reading competence. It is the culmination of translating letters into sounds, merging sounds to become words, linking words to become sentences, relating text to meaning, and making inferences to fill in missing information. A student's ORF score is dependent on the skills in previous subtasks since children need to have some mastery of orientation to print, letter sounds, and decoding of nonwords to read fluently. For the ORF subtask, the assessor provided each student with a story of 59 words to read in three minutes. Results for the ORF subtask are presented in Table 8.

21 The words in this subtask were derived from frequently used words for the age group.

Table 8: **ORF Rate (CWP3M) by Grade**

Grade at Baseline	*N*	Baseline			Endline			Mean Change
		Mean Fluency	SD	Zero Scores *n* (percentage)	Mean Fluency	SD	Zero Scores *n* (percentage)	
Grade 2	15	12.6	19.1	10 (66.7%)	46.9	58.1	6 (40.0%)	34.3
Grade 3	33	27.6	35.7	13 (39.4%)	62.9	60.4	9 (27.3%)	35.3
Total: All Students	**48**	**22.9**	**32.0**	**23 (47.9%)**	**57.9**	**59.5**	**15 (31.3%)**	**35.0**

Students' mean fluency rate for ORF was significantly higher at endline than at baseline. **Students, on average, were able to correctly read 35.0 additional words on the ORF subtask at endline than at baseline.** Students in both Grade 2 and Grade 3 made similar improvements: Grade 2 students read 34.3 additional words at endline, and Grade 3 students read 35.3 additional words at endline. Overall, the percentage of students unable to read at least one word decreased from 47.9 percent at baseline to 31.3 percent at endline. The percentage of Grade 2 students unable to read at least one word decreased by 26.7 percentage points, while their Grade 3 peers saw a decrease of 12.1 percentage points.

Reading Comprehension

Comprehension is the purpose of reading. Once a child learns the sound-letter relationship (alphabetic principle) and becomes able to decode and read with automaticity, he or she becomes increasingly able to understand the meaning of a text. This subtask assesses that ability.

For the reading comprehension subtask, the assessor removed the story that was used in the ORF subtask, then asked each student up to five comprehension questions based on what they read. The number of questions students were asked depended on how many words they were able to read on the ORF subtask. For instance, if a student read just the first ten words, he or she would be asked only the first comprehension question. Similarly, if a student read all 59 words, he or she would be asked all five questions. Students who received zero scores on the ORF subtask received a zero score on the reading comprehension subtask because no questions were presented to them. In addition, students who couldn't correctly answer a single reading comprehension question also received a zero score on this subtask. Reading comprehension results are presented in Table 9.

Table 9: **Reading Comprehension Score (Questions Correct out of Five) by Grade**[22]

Grade at Baseline	*N*	Baseline			Endline			Mean Change
		Mean Score	SD	Zero Scores *n* (percentage)	Mean Score	SD	Zero Scores *n* (percentage)	
Grade 2	15	1.0	1.5	10 (66.7%)	2.0	2.2	6 (40.0%)	1.0
Grade 3	33	1.6	1.9	16 (48.5%)	2.6	2.0	10 (30.3%)	1.0
Total: All Students	**48**	**1.4**	**1.8**	**26 (54.2%)**	**2.4**	**2.1**	**16 (33.3%)**	**1.0**

22 Zero scores are shown as the percent of students unable to correctly identify a single item.

Students' reading comprehension scores were significantly higher at endline than at baseline. **On average, students were able to answer correctly 1.0 additional reading comprehension questions (out of a maximum of five) at endline than at baseline.** Grade 3 students answered a total of 2.6 reading comprehension questions at endline on average; Grade 2 students answered 2.0 reading comprehension questions at endline. As expected given the improvement in mean scores for reading comprehension at endline, the percentage of students unable to answer a single reading comprehension question decreased by 20.9 percentage points from baseline to endline.

Listening Comprehension

The listening comprehension subtask is an untimed assessment of students' abilities to comprehend the meaning of a story read to them orally. Students do not need to know how to read to answer listening comprehension questions. As a result, this subtask is an important measure of students' pre-reading abilities because it helps detect obstacles that prevent them from learning to read, such as limited language proficiency, auditory problems, attention deficit, and other difficulties. In this subtask, the assessor read a short passage to the student and asked him or her to answer four comprehension questions about the passage. Results for the listening comprehension subtask are presented in Table 10.

Table 10: **Listening Comprehension Score (Questions Correct out of Four) by Grade**

Grade at Baseline	*N*	Baseline			Endline			Mean Change
		Mean Score	SD	Zero Scores *n* (percentage)	Mean Score	SD	Zero Scores *n* (percentage)	
Grade 2	16	2.3	1.2	1 (6.3%)	2.9	1.1	1 (6.3%)	0.7
Grade 3	33	2.5	1.3	3 (9.1%)	3.0	1.2	2 (6.1%)	0.5
Total: All Students	**49**	**2.4**	**1.2**	**4 (8.2%)**	**3.0**	**1.1**	**3 (6.1%)**	**0.6**

Students' listening comprehension score was significantly higher at endline than at baseline. **On average, students were able to answer 0.6 additional question (out of a maximum of four) correctly at endline compared to baseline.** Students in Grade 2 and Grade 3 were able to answer nearly the same number of questions at endline—2.9 and 3.0 correct answers, respectively. Grade 2 and 3 students also made similar improvements from baseline to endline on this subtask: 0.7 additional correct answers among Grade 2 students compared to 0.5 additional correct answers among Grade 3 students. Overall, 6.1 percent of students were unable to answer a single listening comprehension question correctly at endline.

EGRA Results by Subgroup

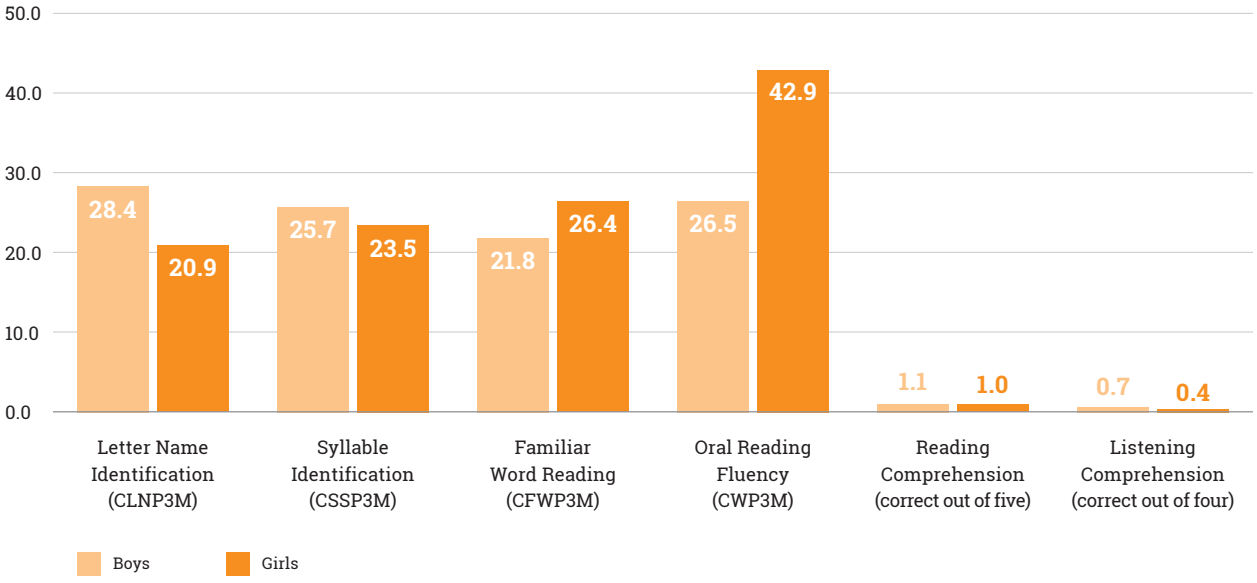
In addition to calculating the change in subtask results from baseline to endline across all students, results were analyzed by students' gender and vision status. In total, 24 boys and 25 girls were assessed; their results are presented in Table 11.

Table 11: **Mean Results by EGRA Subtask and Gender**[23]

Subtask	Baseline				Endline			
	Boys (*N* = 24)		Girls (*N* = 25)		Boys (*N* = 24)		Girls (*N* = 25)	
	Mean	Zero Scores *n* (percentage)	Mean	Zero Scores *n* (percentage)	Mean	Zero Scores *n* (percentage)	Mean	Zero Scores *n* (percentage)
Letter name identification (CLNP3M)	35.4	4 (16.7%)	61.4	4 (16.0%)	63.8	4 (16.7%)	82.3	2 (8.0%)
Syllable identification (CSSP3M)	13.3	15 (62.5%)	31.9	8 (32.0%)	38.9	12 (50.0%)	55.3	8 (32.0%)
Familiar word reading (CFWP3M)	11.1	14 (58.3%)	35.5	7 (28.0%)	32.9	8 (33.3%)	61.8	5 (20.0%)
Oral reading fluency (CWP3M)	11.9	16 (65.2%)	33.0	8 (32.0%)	38.4	9 (39.1%)	75.9	6 (24.0%)
Reading comprehension (correct out of five)	0.8	19 (78.3%)	2.0	8 (32.0%)	1.9	10 (43.5%)	3.0	6 (24.0%)
Listening comprehension (correct out of four)	2.5	2 (8.3%)	2.3	2 (8.0%)	3.2	0 (0.0%)	2.8	3 (12.0%)

At baseline and endline, girls had consistently higher mean scores than boys, except on listening comprehension on which boys had higher scores during both assessment periods. Both boys and girls made improvements on all subtasks; however, when comparing mean changes from baseline to endline, boys made greater improvements than girls on the letter name identification, syllable identification, reading comprehension, and listening comprehension subtasks (Figure 4). Girls made greater improvements than boys on the familiar word reading and ORF subtasks.

Figure 4: **Mean Change by EGRA Subtask and Gender**



23 The distribution of boys by grade was: eight in Grade 2, and 16 in Grade 3. The distribution of girls by grade was: eight in Grade 2, and 17 in Grade 3. For ORF and reading comprehension, boys *n*=23.

Prior to the baseline EGRA, Benetech and the participating schools determined the vision status of the students in the project. Based on their results, students were categorized as being low vision (24) or blind (25). EGRA results by students' vision status are presented in Table 12.

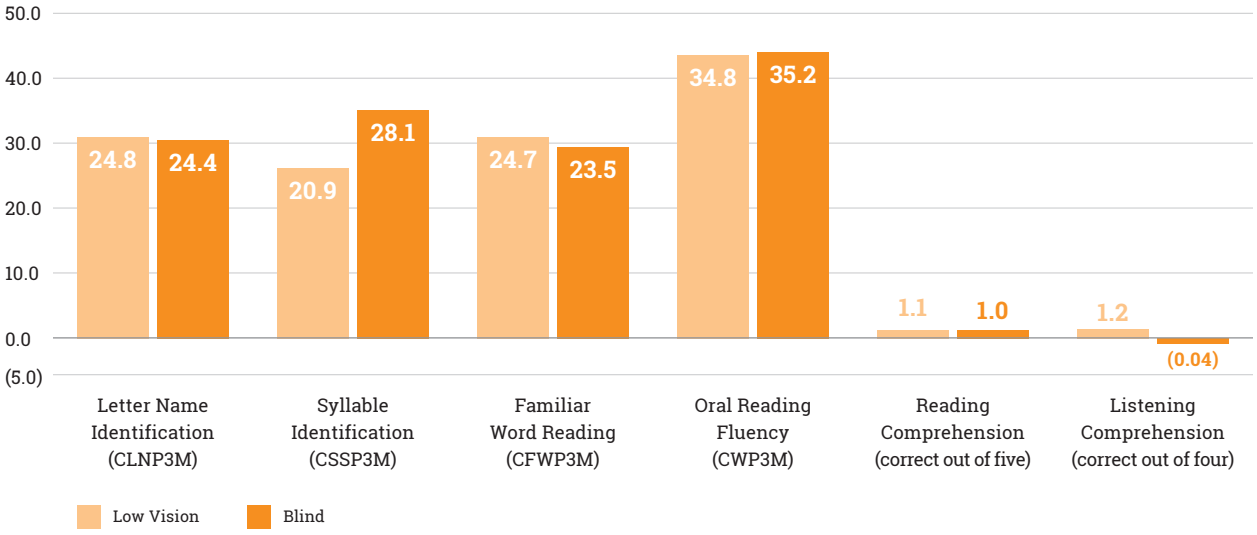
Table 12: **Mean Results by EGRA Subtask and Vision Status**[24]

Subtask	Baseline				Endline			
	Low Vision (*N* = 24)		Blind (*N* = 25)		Low Vision (*N* = 24)		Blind (*N* = 25)	
	Mean	Zero Scores *n* (percentage)	Mean	Zero Scores *n* (percentage)	Mean	Zero Scores *n* (percentage)	Mean	Zero Scores *n* (percentage)
Letter name identification (CLNP3M)	44.0	2 (8.3%)	53.1	6 (24.0%)	68.8	3 (12.5%)	77.6	3 (12.0%)
Syllable identification (CSSP3M)	21.3	11 (45.8%)	24.1	12 (48.0%)	42.2	11 (45.8%)	52.2	9 (36.0%)
Familiar word reading (CFWP3M)	19.3	10 (41.7%)	27.6	11 (44.0%)	44.0	6 (25.0%)	51.2	7 (28.0%)
Oral reading fluency (CWP3M)	18.3	11 (47.8%)	27.1	12 (48.0%)	53.1	7 (30.4%)	62.3	8 (32.0%)
Reading comprehension (correct out of five)	1.3	13 (56.5%)	1.5	13 (52.0%)	2.4	7 (30.4%)	2.4	9 (36.0%)
Listening comprehension (correct out of four)	1.9	3 (12.5%)	2.9	1 (4.0%)	3.1	0 (0.0%)	2.8	3 (12.0%)

At endline, students categorized as blind had higher scores than students categorized as having low vision on the letter name identification, syllable identification, and familiar word reading subtasks. Students in both vision categories experienced increases in mean scores on all subtasks except for listening comprehension; students categorized as blind had lower scores at endline than at baseline on this subtask. The average changes in scores across subtasks appear to be similar across vision status categories, with the exception of the syllable identification and the listening comprehension subtasks. On the syllable identification subtask, students categorized as blind gained an average of 7.2 CSSP3M more than students categorized as having low vision. On the listening comprehension subtask, students categorized as blind answered 0.1 fewer questions correctly at endline than at the baseline on average (Figure 5).

24 The distribution of students categorized as low vision by grade was: nine in Grade 2 and 15 in Grade 3. The distribution of students categorized as blind by grade was: seven in Grade 2 and 18 in Grade 3. For ORF and reading comprehension, low vision *n*=23.

Figure 5: **Mean Change by EGRA Subtask and Vision Status**

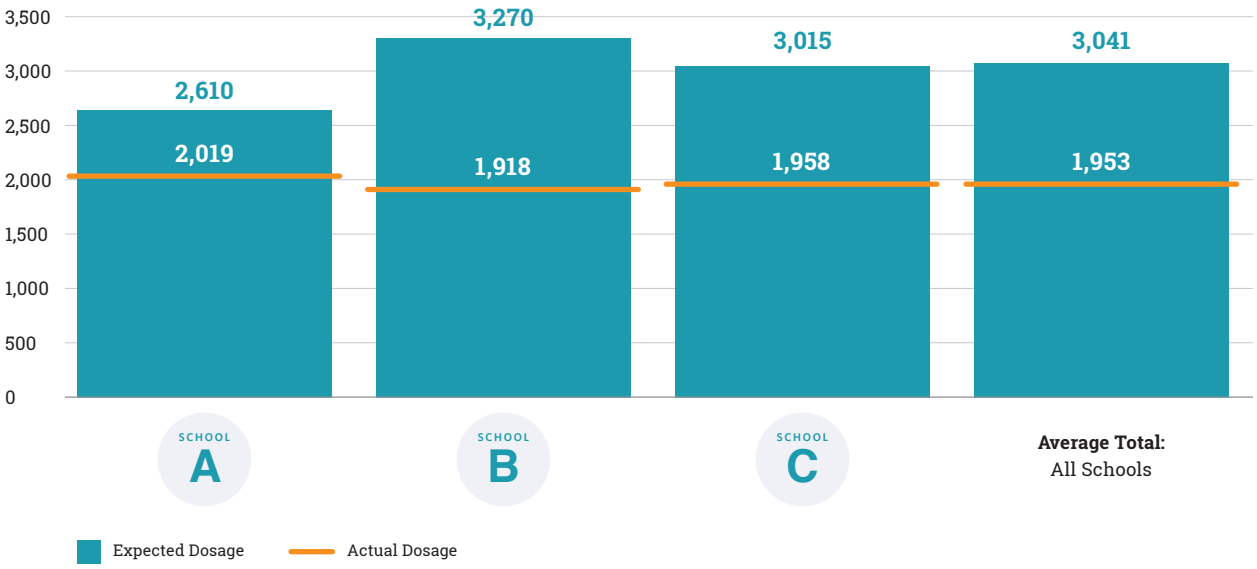


EGRA Results by Level of Dosage

During the Bookshare India project, project staff tracked the total number of minutes of project intervention—also called project dosage—in each school. These data were collected and used as part of the analyses to explore variation in students' reading ability due to variation in project dosage.

Figure 6 illustrates the expected maximum amount of project dosage students would have received if attending school every day when the project was able to offer the sessions. Also, included in Figure 6 is the percentage of the maximum amount of project dosage that students received across schools, on average.

Figure 6: **Expected Dosage and Actual Dosage Received by Students per School (minutes)**



Because of school academic calendars, among other factors, each school participating in the Bookshare India project had different maximum dosages—or the maximum possible number of minutes of guided and independent reading time through the intervention—delivered to students. On average for all schools, students were expected to receive about 3,041 minutes of guided and independent reading time. However, by the end of the project, each student received about 1,953 minutes on average—64.2 percent of the maximum intended dosage (see Annex Table C.1). When comparing the gains of students who received at least the average dosage with those of students who received less than the average dosage, there were no significant differences, except on the ORF subtask. On this subtask, students who received at least the average dosage improved their ORF rate by 43.1 CWP3M, whereas students receiving less than the average dosage improved their ORF rate by 23.4 CWP3M (see Annex Table C.2).

Key Factors for Success

To better understand the factors that may have influenced changes in students' EGRA scores from baseline to endline, questions from the student questionnaire were compiled into nine composites, or groups of questions related to each other. Each composite consists of a series of items related to a specific theme that may have affected students' early grade reading skill acquisition; composites were then assigned a maximum score equal to the total number of items in the composite.[25] For selected composites,[26] students were categorized as high or low based on the composite's mean score. The average change in EGRA scores was then calculated by high or low category to determine if students' composite scores influenced their reading gains.[27]

The composites for the Bookshare India project include

1. Language exposure
2. Socioeconomic status (SES)
3. Parental or guardian literacy
4. Family reading support
5. Reading materials access
6. Teacher reading support
7. Disposition to reading
8. Technology use
9. Engagement in program

Table 13 reports details on the composite scores for students participating in Bookshare India project (see Annex B for full composite questions, response options, and frequencies).

25 Non-responses were given a '0'.

26 To determine which composites were selected for high and low categorization, a regression analysis was conducted to identify those composites that had a relationship with reading gains. Those not selected did not show any significant relationship with reading gains.

27 This analysis method was chosen due to the sample size and to the type and number of items in each composite. Difference in scores between the groups was not tested for statistical significance due to group size. Additionally, regression analysis or ANOVA testing on the composite scores is not recommended for sample sizes of less than 250.

Table 13: **Descriptive Statistics for Composite Scores**[28]

Task	*N* Students	*N* Items	Mean	SD	Minimum	Maximum
Language exposure	48	7	4.8	0.8	2.0	6.0
Socioeconomic status (SES)	49	10	7.2	1.3	4.5	10.0
Parental or guardian literacy	31	5	2.1	0.9	0.0	3.3
Family reading support	46	3	1.4	0.9	0.0	3.0
Reading materials access	30	3	1.4	0.9	0.0	3.0
Teacher reading support	39	7	5.6	0.8	3.0	7.0
Disposition to reading	39	3	2.2	0.8	0.3	3.0
Technology use	34	4	3.4	0.6	2.0	4.0
Engagement in program	33	7	6.3	0.9	4.0	7.0

Details on each composite are described below. Full composite questions and responses can be found in Annex B.

Language Exposure

The language exposure composite includes items related to students' use of Marathi and exposure to Bharati braille at school and home. Because the project sought to improve student reading skills, students' exposure to Marathi and Bharati braille at school and home was important to understanding what factors influenced a student's performance on the EGRA.

The language exposure composite was comprised of seven items for a maximum composite score of 7.0. Higher scores indicate more language consistency and exposure. The following items were included in this composite:

1. At school, does your teacher talk to you in Marathi?
2. At school, do your friends speak to you in Marathi?
3. At school, are there reading materials in Marathi?
4. At school, do you speak to your friends in Marathi?
5. At home, do you speak to your siblings in Marathi?
6. At home, do you speak to the adults in your home in Marathi?
7. At home, are there reading materials in Bharati braille?

The average score for the language exposure composite was 4.8. However, the results include a wide range of scores. This indicates that students may not be consistently exposed to or use either Marathi or Bharati braille.

28 Because students were not required to answer all questions on the student questionnaire, the number of student respondents varied across composites.

Socioeconomic Status

SES is a commonly reported composite used to describe an individual's or household's education, financial situation, and occupation. This set of variables may provide insight into the contextual factors affecting a student's chance of educational success. Students were asked a series of questions that were used to estimate SES based on assets and characteristics of their home.

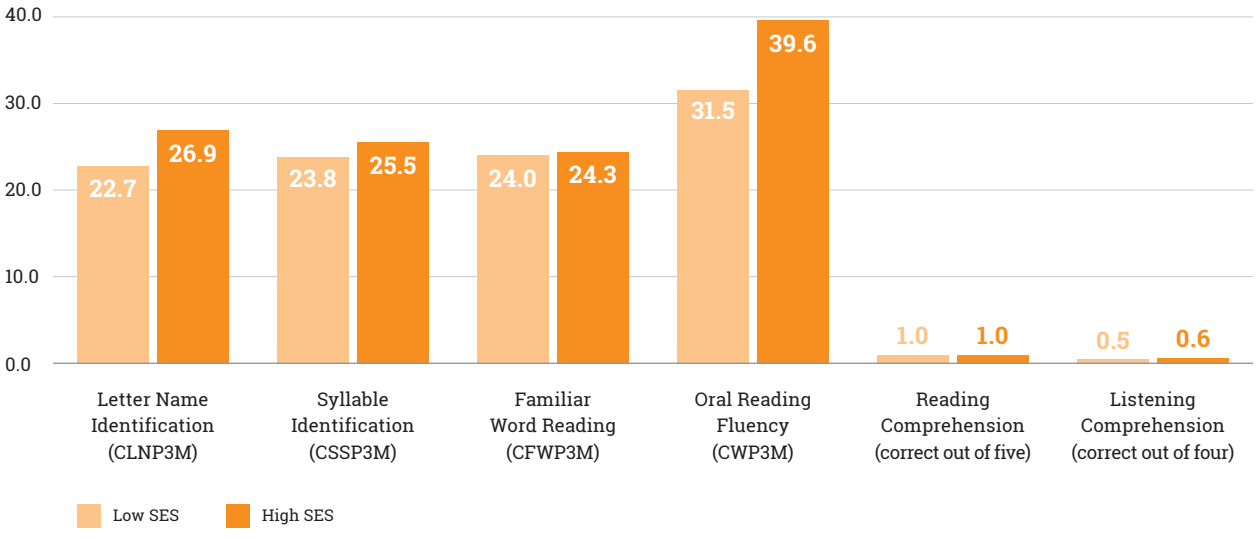
The SES composite was calculated using ten items for a maximum composite score of 10.0. The following items were included in this composite:

1. At your house, do you have a radio?
2. At your house, do you have a telephone/mobile phone?
3. At your house, do you have electricity?
4. At your house, do you have a television?
5. Do you have a toilet inside your house?
6. At your house, do you have a bicycle?
7. At your house, do you have a motorcycle?
8. At your house, do you have a car, truck, 4x4, tractor, or engine boat?
9. How long does it take—on foot—to travel to a shopping area (or center) from your house?
10. Last night, how much time did you spend on chores (at your house or school)?

Scores closer to ten indicate higher SES; scores closer to one indicate lower SES. Overall, students had relatively high SES composite scores; the average score was 7.2.

Students were categorized into high or low SES groups based on the students' composite mean score; the change in EGRA results from baseline to endline were calculated for each group and are presented in Figure 7. While all students made similar improvements across subtasks, **students in the the high SES group showed stronger improvement than students in the low SES group on the ORF subtask.**

Figure 7: **Mean Change by EGRA Subtask and SES**[29]



29 Low SES *n*=27; high SES *n*=22

Parental or Guardian Literacy

The parental or guardian literacy composite includes items related to the educational level and literacy skills of students' parents or guardians. The parental or guardian literacy composite was comprised of five items for a maximum score of 5.0. The following items were included in the composite:

1. Can your mother read Marathi?
2. Can your mother read Bharati braille?
3. Can your father read Marathi?
4. Can your father read Bharati braille?
5. What is the highest level of education your parents have achieved?

The average composite score for parental or guardian literacy was 2.1; however, only 63.3 percent of students provided responses to these items. Based on the student responses, it appears that parents or guardians have low levels of literacy.

Family Reading Support

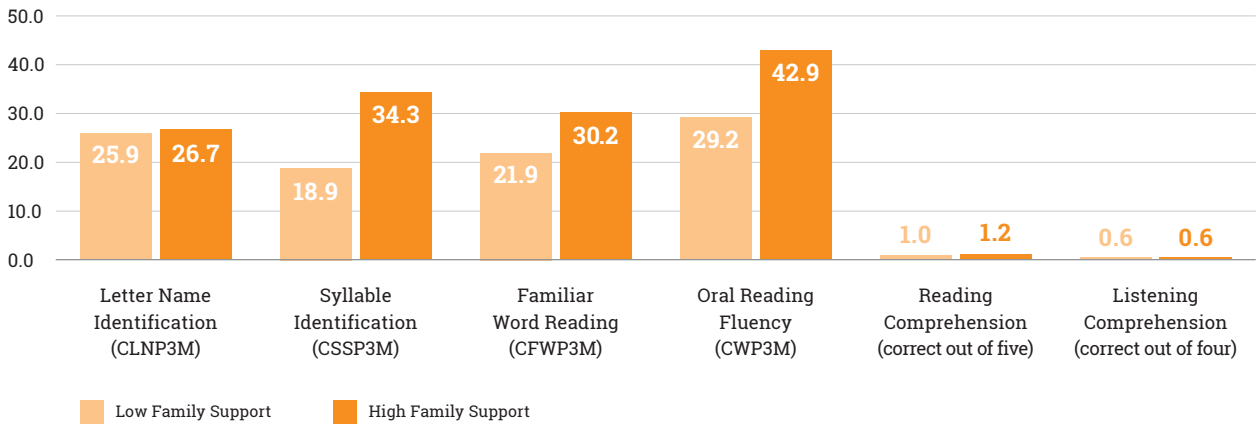
The family reading support composite is comprised of questions related to whether parents, guardians, or other adults in the home read to the students or provide them with support for reading. The composite included three items for a maximum score of 3.0. The following items were included in the composite:

1. Does someone from home read stories to you?
2. Does someone from home look at your school work?
3. Last week, how many days did you read with someone outside of class time?

The average family reading support score is 1.4, suggesting low levels of reading help outside of the classroom for a large number of students.

Students were categorized into high or low family reading support groups based on the students' composite mean score; the change in EGRA results from baseline to endline were calculated for each group and are presented in Figure 8. Students in both groups improved their results from baseline to endline; however, **students with high family reading support made greater improvements in the syllable identification, familiar word reading, ORF, and reading comprehension subtasks.**

Figure 8: **Mean Change by EGRA Subtask and Family Reading Support**[30]



30 Low parental support *n*=19; high parental support *n*=27

Reading Materials Access

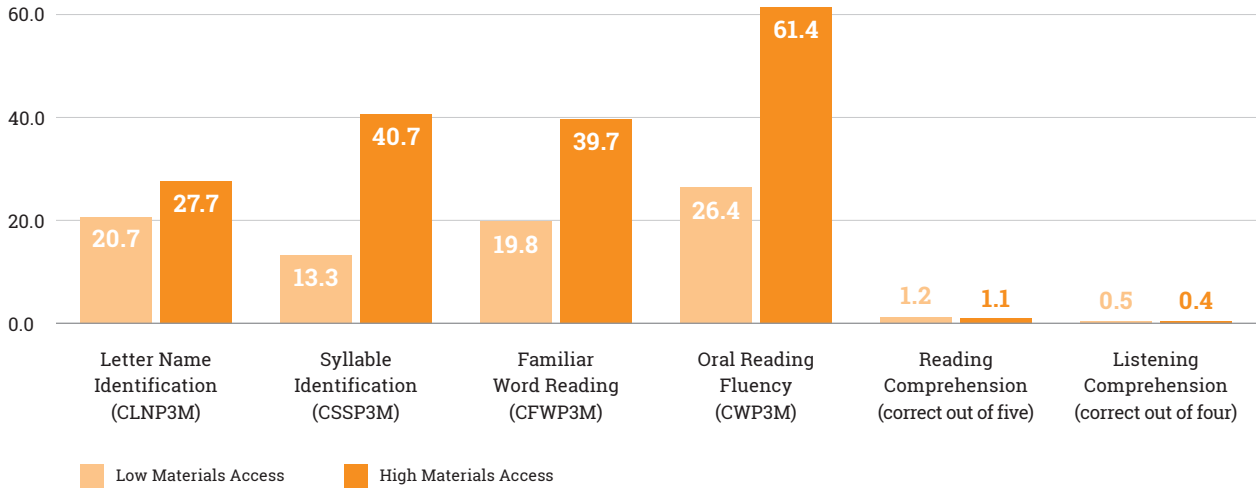
The reading materials access composite includes items about students' access to textbooks or other reading materials in braille. The composite consisted of three items for a maximum score of 3.0. The following items were included in the composite:

1. Do you have a textbook that helps you learn to read in braille?
2. Are the reading materials at school in braille?
3. Do you have a textbook that helps you learn math?

Average composite scores for reading materials access were 1.4 with only 61.2 percent of students providing responses to these items. This result suggests low access to reading materials in Bharati braille for a large number of students.

Students were categorized into high or low access to reading materials groups based on the students' composite mean score; the change in EGRA results from baseline to endline were calculated for each group and are presented in Figure 9. Students in both groups improved their results from baseline to endline; however, students with high access to reading materials made greater improvements in the syllable identification, familiar word reading, and ORF subtasks. Notably, students with low access to reading materials made marginally higher improvements on reading comprehension and listening comprehension subtasks than students with high access.

Figure 9: **Mean Change by EGRA Subtask and Reading Materials Access**[31]



31 Low learning materials *n*=10; high learning materials *n*=20

Teacher Reading Support

The teacher reading support composite includes items on teachers' instruction and support for reading. The composite consisted of seven items for a maximum score of 7.0. The following items were included in the composite:

1. How often does your teacher teach you to read each week?
2. How often does your teacher teach you to write each week?
3. What does your teacher use to teach you to write?
4. At school, how often do you get time to read silently by yourself?
5. At school, does your teacher ask you questions about what you are reading?
6. How often does your teacher help you when you are struggling with reading?
7. Does your teacher work with you to help you become a better reader?

The average score for the teacher reading support composite was 5.6 which suggests that teachers provide regular reading support in the classroom.

Disposition to Reading

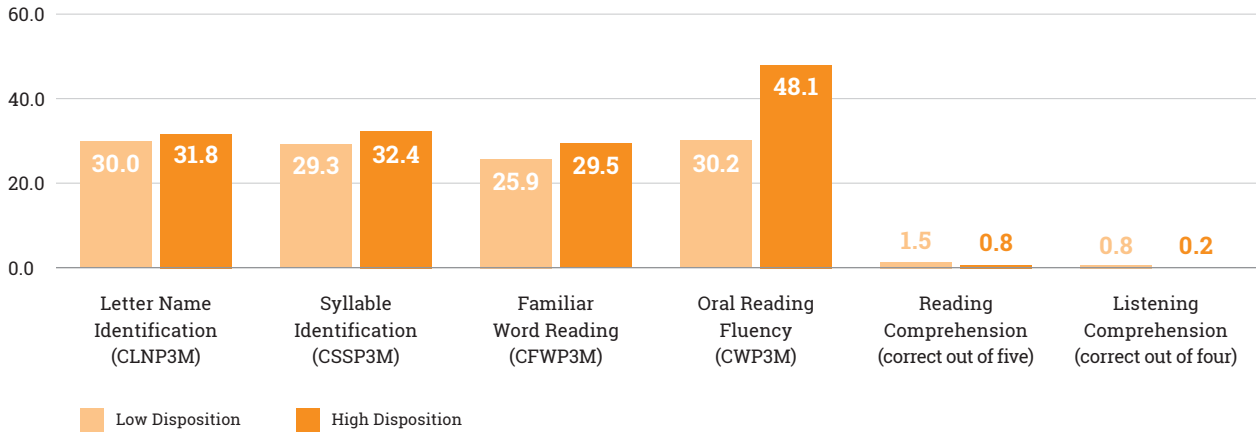
The disposition to reading composite includes items related to students' general attitudes toward reading. The composite consisted of three items for a maximum score of 3.0.

1. Do you love, like, dislike or hate reading?
2. How do you feel when you are learning to read at school?
3. Reading is important to my future.

The average composite score was 2.2, suggesting moderately favorable attitudes toward reading.

Students were categorized into high or low disposition to reading groups based on the students' composite mean score; the change in EGRA results from baseline to endline were calculated for each group and are presented in Figure 10. Students in both groups improved their results from baseline to endline. However, students with a high disposition to reading made greater improvements on the ORF subtask, while students with a low disposition to reading made marginally greater improvements on the reading and listening comprehensive subtasks.

Figure 10: **Mean Change by EGRA Subtask and Disposition to Reading**[32]



32 Low disposition *n*=18; high disposition *n*=21

Technology Use

The technology use composite includes questions on students' comfort and frequency of using technology during the project. The composite consisted of four items for a maximum score of 4.0. The following items were included in the composite:

1. How comfortable do you feel using the DAISY player?
2. How comfortable do you feel using the braille book?
3. Did spending time with the story uncle or auntie increase your comfort with learning to read using the DAISY player?
4. Do you like learning to read using the DAISY player and braille book more than just learning in the classroom?

The average composite score was 3.4, suggesting high levels of comfort and preference for using technology in their learning.

Engagement in Program

The engagement in program composite includes a series of seven statements. Students were asked to respond to the statements on a four-point scale of agreement or difficulty, depending on the statement. The seven statements were used to create the engagement in program composite with the maximum score of 7.0. The following items were included in the composite:

1. Using the DAISY player and the braille book improved your reading.
2. You want to continue using the DAISY player to learn to read.
3. The things you have read this year with the help of DAISY player were: easy or hard.
4. You like the DAISY player.
5. You like the stories you have read this year.
6. Using the DAISY player changed your attitude toward reading.
7. Using DAISY player increased your reading time overall.

The average on the composite was 6.3, suggesting that students were highly engaged in the project.

VIII. Scalability

Stakeholders are increasingly interested in assessing the scalability of interventions in addition to their results or impacts. To scale up a project means to expand, replicate, adapt, and sustain a successful project in a new geographic area and to reach more beneficiaries over time.[33] ACR GCD grantees have implemented small-scale pilot projects, and an important consideration at the conclusion of each project is the feasibility of replicating or expanding the technology-based innovation and project models to a different or larger population or area.

To inform this decision, STS conducted a scalability assessment guided by the following research question: *Are this project and technology suitable for scaling?* STS used an indirect approach that relies on qualitative descriptions of project performance around seven parameters of sustainability.

1. Credibility
2. Observability
3. Relevance
4. Relative Advantage
5. Ease of Transfer and Adoption
6. Testability
7. Sustainability of Funding

The seven parameters were adapted from the USAID-funded Scalability Assessment Tool developed by Management Systems International.[34] The tool includes seven sections and 28 questions. STS used data from EOP interviews, EGRA results, literature reviews, and project M&E to assess scalability parameters. These results are meant to inform local program staff, stakeholders, and donors about key considerations to take into account before scaling the Bookshare India project's model and technologies to a larger or different beneficiary population.

Credibility

An intervention or innovation must be credible to be supported and taken to scale through either replication or expansion. This aspect of scalability assesses if various stakeholders—including potential adopters, funders, implementers, and beneficiaries—believe that the model has a strong evidence base that may include existing empirical research or anecdotal information.

Key Considerations:

1. What evidence was used to develop the intervention?
2. What evaluations have been conducted on the intervention?
3. In what social contexts does the intervention work?
4. What individuals and institutions support the intervention?

The Bookshare India project model used existing DAISY player technology, adapted early grade reading materials in Marathi into accessible formats, and paired these resources with a school-based intervention that created time for students to read through guided and independent sessions. In the project proposal, there was little evidence cited

33 Cooley, L., & Linn, J. F. (2014). *Taking Innovations to Scale: Methods, Applications and Lessons*. Results for Development Institute. Washington, D.C. Retrieved from: https://www.usaid.gov/sites/default/files/documents/1865/v5web_R4D_MSI-BrookingsSynthPaper0914-3.pdf

34 Ibid.

for justification of the project model. One article promotes elementary school students' use of audio-supportive technologies as a supplement to braille text,[35] but the article does not explore how audio-supported reading may help develop braille reading skills. Although the story uncle or auntie was an innovative approach to providing reading materials and time to early grade students, it was untested prior to the pilot of the Bookshare India project.

Because the Bookshare India project is a new intervention, it has only been tested in a single context: four schools that specifically serve students who have low vision or are blind in one city in Maharashtra, India. While Bookshare India is expanding its presence throughout the subcontinent, the partnerships are in the nascent stage and expressions of support are currently limited. Benetech has plans to more formally engage the Ministry of Human Resource Development's Department of School Education & Literacy and the Ministry of Social Justice and Empowerment to explore support and ongoing partnership in light of Bookshare India project results.

Credibility Conclusion

The Bookshare India project combined innovative approaches with established technology to support students in learning to read. Because the Bookshare India model was new and had not been evaluated previously, promising findings from this pilot project serve to build an evidence base for the model. Credibility for the project's approach would benefit from continued research on the reading benefits of the project components in more social contexts.

Observability

For an intervention or innovation to be scaled, it should have observable results that show efficacy or impact. Observability of results is key to providing non-technical audiences with proof that an intervention or innovation achieved its intended outcomes and therefore will have positive impacts on beneficiaries.

Key Considerations:

1. Are the results visual and observable?
2. What is the relationship (if any) between results and the intervention?
3. Is there any emotional appeal associated with the evidence?

EGRA results from the Bookshare India project showed gains across both grades and genders over the course of the project intervention. However, because the research design did not include a comparison group due to the lack of comparable schools in the region, results from the intervention are conflated with those from another year of school. Nevertheless, stakeholders reported a strong anecdotal relationship between the reading gains observed through the EGRA and the intervention. During project monitoring visits, teachers noted that student-level, school-based assessments scores were higher than normal and that students were learning to read more steadily than in past years. During the EOP interviews—which took place before EGRA findings were known—all teachers and headmasters reported that there were greater reading gains during the project year. They also noted increased motivation to read in students in the classrooms that participated in the intervention. Students also reported high engagement with the project and the technology, and they posited that the time with the story uncle or auntie and the DAISY players were helpful.

35 Jackson, R. and Presley, I. (2012). *Audio-Supported Reading for Students who are Blind or Visually-Impaired*. Wakefield, MA. National Center on Accessible Instructional Materials Retrieved from: http://aem.cast.org/about/publications/2012/audio-supported-reading-blind-visually-impaired-asr.html

Observability Conclusion

Reading gains are observable through the EGRA for students who participated in the Bookshare India project, and students and teachers observed a relationship between the intervention and the reading gains made by the students. Nevertheless, the project would benefit from additional research to understand how much of the reading gains were attributable to each project component and to separate the effects of an additional year of schooling. Replication of the positive results observed in this pilot would better support the observability of the project results.

Relevance

An intervention must be relevant to the context in which it is being implemented to be scalable. It should effectively address a problem that is recognizable and considered important by stakeholders.

Key Considerations:

1. What is the level of significance of the problem that the intervention is trying to address?
2. Does the intervention address a priority on the policy agenda for potential adopters?
3. Does the intervention address a need felt by the potential beneficiaries?

The total number of school-age students who have low vision or are blind in India is unknown. Estimates of individuals with 'sight disability' range from five million to 26 million people according to the Indian National Census of 2011. According to the Ministry of Social Justice and Empowerment, more than 15 million residents in the Maharashtra State, out of a total population of 114.2 million residents, have some form of disability.[36]

To date, there has been limited information on the reading levels of students who have low vision or are blind in Maharashtra, specifically, or India, more generally. The ASER Centre, which regularly conducts education assessments and compiles its results in the Annual Status of Education Report, found an upward trend in the reading levels of students attending government schools: almost 42.5 percent of Standard III students were able to read Standard I level text.[37] The emphasis by the Government of India (GoI) on regular education assessments and the dissemination of results through the annual report highlights the importance placed on early grade literacy in India. Unfortunately, the reading levels of students who have low vision or are blind are not explicitly included in these results. Based on the lack of published evidence or research into literacy attainment for students who have low vision or are blind, it is unclear what importance the GoI or related ministries place on this topic. During the EOP interviews, it was not possible to meet with stakeholders from the Ministry of Human Resource Development's Department of School Education & Literacy or the Ministry of Social Justice and Empowerment to better understand their satisfaction with the educational attainment for students who have low vision or are blind.

Despite the GoI's developing policy regarding early grade literacy of students who have low vision or are blind, the schools that received the Bookshare India intervention reported a need for better ways to support students' learning. Many of the teachers who were interviewed reported being unsatisfied with their students' literacy and stated they would welcome efforts to improve the learning approach. In the two schools that had computers, teachers were interested in utilizing DAISY software on the computers to maximize available technology; it was unclear if having the DAISY players as separate devices provided a value-add for teachers. Additionally, although the books furnished by the project were appreciated in the schools, many teachers expressed a desire to have embossers so they could create materials themselves in a timely manner.

36 http://www.census2011.co.in/census/state/maharashtra.html

37 ASER Centre (2017). *Annual Status of Education Report 2016*. New Delhi, India. ASER Centre retrieved from: http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER%202016/aser_2016.pdf

Relevance Conclusion

The relevance of the Bookshare India project is ambiguous. Literacy acquisition in early grades appears to be a central focus of the GoI with great importance placed on improving overall literacy rates across India. However, there is little evidence related to any policy focus or resource allocation explicitly towards improving the literacy of students who have low vision or are blind. Although students, teachers, and schools involved in the project reported an acute need for better reading supports, governmental support for innovative approaches is not yet solidified. To increase the relevance of the project, Benetech should focus on raising awareness among local stakeholders and encouraging improvements in policy approaches.

Relative Advantage

Relative advantage relates to whether the intervention offers an improvement over current or alternative solutions to the problem.

Key Considerations:

1. How adequate are the current solutions for the problem?
2. Is this intervention more effective than the current solution?
3. Is this intervention more effective than other established innovative models?

The current approaches to teaching reading to students who have low vision or are blind at the intervention schools vary depending on teacher background and level of experience. Because of a lack of knowledge among researchers concerning best practices or reading gains as a result of current teaching practices, it is unclear if the current solutions are adequately addressing the problem. During interviews, teachers expressed a desire to have better approaches for helping their students learn to read, which suggests that the current approaches are not meeting teacher expectations.

The Bookshare India project provided support to teachers in schools through the provision of reading materials, audio-based technology, and guided and independent reading time. Teachers had positive feedback regarding the overall project approach, and most believed that the project was a useful supplement to—not a replacement for—their standard teaching approaches.

There do not appear to be any other innovative models being implemented within India or in contexts to which the Bookshare India project could be fruitfully compared.

Relative Advantage Conclusion

Bookshare India piloted an innovative approach that supplements existing teaching approaches for students who have low vision or are blind. Based on evidence collected through project beneficiaries, it does not appear that the model would be able to replace current solutions completely, but given the relative lack of other innovative models addressing the literacy acquisition of students who have low vision or are blind, the project may provide an effective complement to other classroom practices. Without more research on other innovative approaches addressing the same problem as Bookshare India, it is not possible to determine if the Bookshare India project has a relative advantage over other solutions.

Ease of Transfer and Adoption

Ease of transfer and adoption relates to whether the characteristics and components of the intervention lend themselves to being adopted by organizations other than the original implementer. This parameter of scalability looks at how complex or resource-heavy an intervention is, as well as if specific elements of the intervention may be deemed inappropriate or unattractive to other implementers.

Key Considerations:[38]

1. What is the level of technical sophistication of the components and activities of the intervention?
2. What is the level of complexity of the intervention?
3. What level of supervision and monitoring is needed?

The components of the Bookshare India project required relatively low levels of technical sophistication, other than the development of the audio books in Marathi. The DAISY players were easy for students to use, and the story uncle or auntie did not need significant levels of technical expertise to implement the project. However, the design and implementation of the project did require knowledge of Bharati braille and a familiarity with the literacy needs of students who have low vision or are blind—a consideration that should be taken into account for future projects. The project was not highly complex in design nor implementation—no significant departures from current teaching or home reading practices were required—and teachers did not need to make adjustments to their timetables to fit in the intervention. Because the story uncle or auntie visited students outside of regular class time and was not employed by the schools, it is unclear if this component would be financially feasible if the model were to be replicated or implemented in different contexts. Though not a technically sophisticated component, it would require an investment on the part of any future project to have the story uncle or auntie be a member of the project team rather than be an employee of the school.

Despite the low level of complexity and technical sophistication of the project, it was evident through the implementation that an increase in staff capacity building, supervision, and monitoring would have reduced challenges faced in FOI and in achieving a high level of dosage for students. This was a limitation in the conceptualization of the project: although there was an investment in data collection for M&E, there was not enough investment in project staffing and training. Future projects could build upon this knowledge to better provide the supervision and monitoring necessary to support implementation effectively.

Ease of Transfer and Adoption Conclusion

The Bookshare India project consists of components that are relatively low in complexity and technical sophistication and could be transferred and adopted by other organizations. For future projects, more intensive levels of supervision and monitoring could provide a value-add to ensure greater adoption of new practices by the school-based staff.

38 In the original tool, this section includes 11 questions. This analysis includes the questions deemed most relevant for the intervention model and context.

Testability

The testability parameter examines how easy it is for organizations to pilot the intervention on a small scale before full adoption. Testability assesses whether potential adopters would need to commit significant resources or time to test the model if they chose to pilot it in a new context.

Key Consideration:

1. Can the model be tested on a limited scale?

Because the Bookshare India project has low complexity components, it could be tested in a new context. The project requires personnel with knowledge of the literacy needs of students in India who have low vision or are blind and a financial investment in the development of books in human-narrated Marathi audio and Bharati braille. If a similar project were to be pilot tested in a different context, implementers would need to either capitalize on existing audio and braille books or dedicate time to developing these materials. The implementer would also need either: a) knowledge of the local policy and context related to education for students who have low vision or are blind, or b) the ability to engage local stakeholders and experts to better understand the needs of this population.

Further, although the DAISY players were a useful device for teachers and students, their essential functions for the implementation of the Bookshare India project can be found on different—and perhaps lower cost—technologies that may already exist in schools and classrooms. If a similar project were to be pilot tested in a different context, it is possible that an implementer would not need to invest significantly in technology procurement.

Testability Conclusion

Although the Bookshare India project required technical expertise and investment in the development of materials, the low complexity of the components make it an easily testable model for potential adopters.

Sustainability of Funding

Sustainability of funding refers to how cost effective the intervention is and whether there are funds available to scale the intervention, either through government or other organizations.

Key Considerations:

1. Is the model more cost effective than other solutions?
2. What kind of funding commitment is required to scale the model?
3. Is there any potential for internal revenue from the model (i.e. service fees)?

No comprehensive cost-effectiveness analysis was conducted on Bookshare India; instead, a cost analysis was performed. A cost analysis is often a component of scalability assessments, as it helps decision makers and stakeholders understand the feasibility of replication given budgetary constraints. Because ACR GCD grantees implemented new approaches, they often allotted significant financial resources to develop new materials that could be used on a recurring basis. To better understand the funding requirements of the Bookshare India project, a cost analysis was conducted to present the total cost of the intervention and to understand the investments that would be needed for project replication or scale-up.

USAID guidance on conducting cost analyses on early grade reading projects suggests that the "ingredients method"[39] be used to calculate costs in the following categories:

- Management and associated technical costs
- Development costs
- Implementation costs

Project staff completed a costing template with guidance from World Vision and STS. Costs were outlined based on the activities from the project work plan, and each expenditure was classified based on the three categories above. The analysis used invoiced costs from the beginning of the project in fiscal year 2015 through December 2016. Though costs specific to the closeout of the project are not included in this analysis, these would be categorized as implementation costs.[40] The absence of these costs should be considered when comparing the proportion of project budget spent on the three categories.

Table 14: **Cost Analysis**

Activity	Management	Development	Implementation
Activity 1.1 - Engineering work for Marathi content on Bookshare India	$ -	$ 31,900	$ -
Activity 1.2 - Collection development for Marathi content on Bookshare India	$ -	$ 60,877	$ -
Activity 1.3 - Outreach/training/support to schools/students	$ -	$ -	$ 67,645
Activity 1.4 - General project management activities	$ 93,457	$ -	$ -
Activity 1.5 - Monitoring implementation of project	$ -	$ -	$ 17,460
Total	**$ 93,457**	**$ 92,777**	**$ 85,105**
Proportion of Total (%)	**34.4**	**34.2**	**31.4**

The management category includes costs that are not directly related to implementation and are likely to vary widely based on who is overseeing the implementation of the intervention. **Management costs for Bookshare India represented about 34.4 percent of the costs expended** and include: the cost of maintaining the project office in Pune; personnel salaries and expat costs associated with non-technical work; travel, lodging, and per-diem costs for technical consultants; and other indirect rates and fees.

Development includes the costs related to the development of materials, survey instruments, programs, and other content that would not need to be redeveloped in the scale-up of a project. **The development costs for the Bookshare India project represented about 34.2 percent of the costs expended.** The major expenses within this category were the engineering work and collection development for Marathi content as well as the development of reading materials in Bharati braille. These costs are one-off expenditures that would not need to be incurred again if a project were implemented in Marathi-speaking areas in India.

39 RTI International (2015). *Measurement and Research Support to Education Strategy Goal 1: Early Grade Reading Costing Template and Guidance*. United States Agency for International Development (USAID). Washington, D.C. Accessed via: http://www.youblisher.com/p/1362487-Early-Grade-Reading-Costing-Template-and-Guidance/

40 Since close-out costs are not included in this analysis, the cost proportions in Table 14 are not inclusive of all implementation costs.

The implementation cost category is arguably the most relevant for stakeholders who are considering scaling up a project or intervention. This category includes all of the recurrent activities and costs that would need to be expensed should the project be replicated, including: materials printing and distribution, training, M&E, events and presentations, workshops, and human resources activities. **For the Bookshare India project, implementation costs represented about 31.4 percent of the total project cost.** Within this cost category, the largest expenses were outreach, training, and support to schools and students.

Benetech provided $25,099 in matching funds that were not included in this analysis. Also, the DAISY players used by students were not procured specifically for this project, and as a result, the cost of the devices was not included in the cost analysis. The estimated total value of the 63 devices used in the project is $11,025—equal to about $175 per unit. Projects sometimes benefit from in-kind services, institutional support, or preexisting relationships with stakeholders or governments that may provide the project with tangible benefits, although it may be difficult or not possible to monetize the costs. Examples of this include local volunteers, strong capacity or support from a large non-governmental organization, or relationships with local governments that could ease logistics and procedures.

Scalability of Funding Conclusion

Costs for the Bookshare India project were relatively equal across categories. A cost-effectiveness analysis should be conducted on any future iterations of the Bookshare India project in which management has better determined how much to invest in staff capacity building, monitoring, and implementation versus materials development.

IX. Conclusions

The Bookshare India project was an innovative solution to improve the reading skills of students who have low vision or are blind in Maharashtra, India. By giving access to simple technologies and high-interest books via both human-narrated Marathi audio and hard-copy Bharati braille and by creating opportunities for guided and independent reading time, the project was able to supplement current teaching practices in intervention schools to encourage improved literacy. Students who participated in the project showed significant gains across EGRA subtasks from baseline to endline. This trend was observed across gender, grade, and vision status.

The project faced implementation and management challenges that may have impeded its ability to deliver each component with maximum intended impact. It was evident through interviews with beneficiaries and stakeholders that the project would not be able to serve as a stand-alone solution to the literacy challenges faced by students who have low vision or are blind. Further, because of context limitations, there was no comparison group to which student results could be compared to differentiate the gains associated with the project and those associated with an additional year of schooling.

The following are lessons that should be taken into account for any future interventions incorporating components of the Bookshare India project.

Lessons Learned

Giving students greater access to reading materials and more time for daily reading is beneficial.

Students increased reading skills across all EGRA subtasks from baseline to endline after a year of schooling and a year of exposure to the Bookshare India project. Nevertheless, results from this pilot further highlighted the confluence of a variety of factors that impact a student's ability to succeed in reading, such as family reading support and reading materials access. Further, the project experienced challenges in providing level appropriate books for students. To better understand the impact of the Bookshare India project on student reading gains, a longer implementation period, appropriately levelled books, and a larger sample population—including a comparison group—should be explored.

Gaps in staffing and varied capacity impacted implementation as intended in schools.

As a result, students only received about 65 percent of the expected amount of reading time on average—equivalent to nearly 1,000 fewer minutes than intended. In the future, project start-up should include a greater focus on staffing and job training. Additionally, capacity building among local staff throughout the life of the project should be a constant priority, especially during staff transitions.

Technology choice—and the ability to understand the value-add of the technology—is a crucial decision point for pilot projects.

Benetech introduced DAISY players and braille materials simultaneously to all project participants. As a result of this project design, it was not possible to isolate the reading gains associated with increased access to braille materials versus the pairing of braille materials with an audio-based technology device delivered by a story uncle or auntie. Given the level of investment required to procure the DAISY players, the Bookshare India project and similar future projects should explore the utility of the DAISY players and investigate if there are existing technologies already within the schools that could serve similar purposes.

Separating M&E from the project implementation can contribute to a broken feedback loop and inhibit the ability of a project to integrate feedback to improve implementation in a timely fashion.

The Bookshare India project utilized a subcontractor to conduct M&E, and there was not strong collaboration nor sharing built into the management structure between the two organizations. To maximize the use of data for project improvement during implementation, implementers should be sure to design projects to allow for frequent feedback through M&E data. This will also improve staff's ability to correct course during the life of a project.

Delivering the project through a non-school based person may reduce the likelihood that a project can be sustainable or scalable over time.

In the Bookshare India project, a project staff member—the story uncle or auntie—was responsible for training students on the use of the DAISY player and providing them with guided reading time. Although teachers received training on utilizing technology, it is not clear if this sufficiently improved the capacity or buy-in of teachers to use the technology in the classroom after the end of the project. Because the story uncle's or auntie's activities are dependent on funding of the Bookshare India project, sustainability is highly dependent on outside sources of funding. Incentivizing or capacity building among teachers or school mentors, or better engaging parents, may prove to be a more permanent way to deliver consistent reading support for students.

The lack of stakeholder engagement at the government level was a crucial gap in the design and implementation of the Bookshare India project.

To gain traction for replication or scalability, particularly for the intervention population of this project, government officials must understand the needs of the student population and be invested in improvements. By failing to better engage government stakeholders throughout the design, research, and implementation process, the Bookshare India project may have limited its ability to replicate or expand its model beyond this project cycle.

Annexes

X. Annexes

Annex A: **Endline EGRA Instrument and Student Questionnaire**

Enumerator Name	
Date and Time	
Date	
Time	
School Location	
School	
ID	
ID	

Consent / अनुमती

गुडमॉर्निंग, माझं नाव . . . . मी . . . . येथे राहतो/राहते. मी तुम्हाला माझ्यावषियी थोडी माहिती सांगतो/सांगते. (कुटुंबातील लोकांची संख्या, आवडी नविडी, मित्र मैत्रणिी बाबत)

तुझं नाव काय ? (वद्यिार्थी नाव सांगतो/सांगते)(वद्यिाथ्र्याचे नाव) व तुझ्या कुटुंबाबद्दल थोडी माहिती सांग. (प्रतसिादासाठी थांबावे - जर वद्यिार्थी बोलायला तयार नसेल तर प्रश्न क्र. २ वचिारावा. पण जर वद्यिार्थी तयार असेल तर शाब्दकि अनुमतीला सुरवात करावी.)

शाळेच्या नंतर तुला काय काय करायला आवडतं ?

Read the following statement aloud to the student to obtain the student's verbal consent.

मुलाचे/मुलीचे शाब्दकि अनुमती घेण्यासाठी खालील वाक्ये मोठ्याने वाचावीत.

मी इथे आज का आले ते मी तुला सांगते/सांगतो. मुले वाचावयास कशी शकितात हे समजून घेण्याचा आम्ही प्रयत्न करीत आहोत. आम्हाला या कामात तुझी मदत हवी आहे. पण तुझी इच्छा नसेल तर तू यात सहभागी झाला नाहीस तरी चालेल. आपण वाचन खेळ खेळणार आहोत. मी तुला अक्षरे, शब्द आणि गोष्टी मोठ्याने वाचायला सांगणार आहे. ठरावकि वेळेत (टाईमर लावून) तुला वाचायला किती वेळ लागतो , ते मी पाहणार आहे. ही काही परक्षिा नाही आणि याचा परीणाम तुझ्या शाळेच्या श्रेणीवर होणार नाही. तुझी यात सहभागी व्हावयाची इच्छा नसेल तर तू तसे ठरवू शकतोस. सुरूवात केल्यानंतरही जर तुला उत्तर द्यायचे नसेल तरी हरकत नाही. तुला याबाबत काही शंका आहेत का? सुरू करूया का ?

वद्यिाथ्र्याने अनुमती दर्लि का ? ☐

Student Information / वद्यिाथ्र्याची माहिती

1. वद्यिाथ्र्याचे लग (मुलगा आहे की मुलगी)

☐ Male ☐ Female

2. तुझे पूर्ण नाव काय ?

3. तुझे वय काय आहे ?

4. तू कोणत्या इयत्तेत शकितोस/ शकितेस ?

Letter Name Endline (Baseline)

मुलांना अक्षरांचे छोटे पुस्तक (स्टमि्युलाय बुक) दाखवा आणि म्हणा.

इथे मराठी अक्षरांनी लहिीलेले पूर्ण पान आहे. जतिक्या अक्षरांचे वाचन तुला करता येईल, ततिकी अक्षरे मला (स्पर्शाने) वाचून दाखवशील का ? अक्षरांची नावे सांग, उच्चार नको.

उदा. अक्षराचे नाव (अ दाखवावे) हा अननसातील अ आहे की आगगाडीतील आ आहे.

चला सराव करू या, मला हे अक्षर कोणते आहे सांग (ग - दाखवा)

जर मुलाने / मुलीने बरोबर वाचले तर म्हणा, **उत्तम, अक्षराचे नाव आहे** - ग

जर मुलाने/मुलीने बरोबर वाचन केले नाही तर म्हणावे अक्षराचे नाव आहे - ग

आता दुसरे अक्षर पाहू. मला या अक्षराचे नाव सांग (ठ दाखवा)

जर मुलाने/मुलीने बरोबर वाचले तर म्हणा : **बरोबर, अक्षराचे नाव आहे** - ठ

जर मुलाने बरोबर वाचले नाही तर म्हणाः **अक्षराचे नाव** - ठ **आहे.**

आता दुसरे अक्षर पाहू. मला या अक्षराचे नाव सांग (न दाखवा)

जर मुलाने/मुलीने बरोबर वाचले तर म्हणा : **बरोबर, अक्षराचे नाव आहे** - न

जर मुलाने बरोबर वाचले नाही तर म्हणाः अक्षराचे नाव - न **आहे.**

तुला समजले का, की हा स्वाध्याय कसा सोडवायचा आहे ?

जेव्हा मी म्हणेन, सुरू कर, तेव्हा जतिक्या अचूकपणे तुला अक्षरांचे उच्चार करता येतील, ततिक्या अक्षरांचे उच्चार कर. (उदाहरण दलि्यानंतर पहलि्या ओळीतील पहलि अक्षर दाखवा आणि पहलि्या ओळी खालून आपली बोटे फरिवून दाखवा) **मी गप्प बसून तुझे वाचन ऐकणार आहे, मदत लागल्यास मी मदत करेन. तयार आहेस का ? चल सुरूवात करू.**

अ	ब	ल	प	उ	र	ए	म	य	न
ढ	ण	ह	ध	ग	अ	ज्ञ	ई	फ	च
प	थ	आ	क्ष	स	झ	ख	ह	व	ऊ
द	ग	ढ	त	भ	म	फ	ट	ख	ड
र	ह	ल	य	ज	श	ओ	ठ	प	ब
न	ऐ	ड	ळ	इ	घ	ल	च	व	ग
थ	य	ल	अ	द	भ	त	उ	स	औ
श	न	ए	त	ई	त	य	क	ल	र
क	ऋ	म	घ	अ	ष	ज	ब	ट	ध
अं	इ	झ	म	क्ष	त	ण	क	र	अः

Time Remaining

Autostop? ☐

Letter Sounds Endline (Baseline)

मुलांना अक्षराचे छोटे पुस्तक (स्टमिुलाय बुक) दाखवावे म्हणाः

येथे मराठीतील अक्षरे दलिेली आहेत. त्यापैकी तुला जतिकी अक्षरे वाचता येतील ततिक्या अक्षरांचे उच्चार सांगा. अक्षरांची नावे सांगू नका, फक्त उच्चार सांगा.

उदा. अक्षराचे नाव (अ दाखवावा) **हा अननसातील अ आहे की आगगाडीतील आ आहे.**

चला सराव करू या, मला अक्षर कोणते आहे सांग (ना - दाखवा)

मुलाचे उत्तर बरोबर आले तर त्याला म्हणाः **छान, ह्या शब्दाचा उच्चार आहे** - ना

जर मुलाने/मुलीने बरोबर उच्चार केला नाही तर म्हणा : **अक्षराचा उच्चार आहे** - ना

आता दुसया अक्षराचा सराव करू. मला या अक्षराचा उच्चार सांग (रू- दाखवा)

जर मुलांनी बरोबर उत्तर दलिे तर म्हणाः **छान, या अक्षराचा उच्चार आहे** - रू.

जर योग्य उत्तर दलिे नाही तर म्हणा : **या अक्षराचा उच्चार आहे** - रू.

आता दुसया अक्षराचा सराव करू. मला या अक्षराचा उच्चार सांग (पि- दाखवा)

जर मुलांनी बरोबर उत्तर दलिे तर म्हणाः **छान, या अक्षराचा उच्चार आहे** - पि.

जर योग्य उत्तर दलिे नाही तर म्हणा : **या अक्षराचा उच्चार आहे** - पि.

तुम्हांला समजले का की स्वाध्याय कसा सोडवायचा आहे?

जेव्हा मी सुरू करा म्हणेन, तेव्हा अक्षरांचे उच्चार जास्तीत जास्त चांगल्या प्रकारे करा. मला त्या अक्षरांचे उच्चार सांगा, सुरूवात इथून करा आणि अशा प्रकारे पुढे वाचन करीत रहा (उदाहरण दलि्यावर ओळीतील पहलि्या अक्षरावर खूण करा. त्या ओळीतील अक्षरे तुमच्या बोटाने दाखवा) **जोपर्यंत तुम्हांला मदतीची गरज लागणार नाही तोपर्यंत मी शांत राहनि आणि लक्षपूर्वक तुमचे वाचन ऐकेन. ठीक आहे, सुरू करा.**

मे	लु	वि	पू	ई	गि	नु	कि	सू	अ
पा	रू	लै	ते	गा	है	सं	आ	वे	मा
मो	ना	शे	लौ	तू	गि	ये	का	हु	णे
गे	पि	लू	रि	वी	ता	बः	कै	या	तौ
घे	पू	मि	बै	री	जो	टु	झे	लो	डि
खि	वा	भो	शे	ठै	रं	धै	सु	हो	षं
डा	घो	ठि	चु	ज्ञा	धै	डो	पं	रो	ए
दी	डौ	अं	दू	छा	ठो	क्षु	शा	ठौ	ए
हं	ई	ढि	ज्ञा	ळु	फो	फु	ने	त्य	थै
इ	खु	ल्य	ओ	उ	ढु	म्ह	ऋ	औ	ऊ

Time Remaining

Autostop? ☐

Familiar Words Endline (Baseline)

मुलांसाठी तयार केलेल्या पुस्तकितील (स्टमिुलाय बुक) तयार केलेल्या शब्दांची यादी मुलाला दाखवा आणि म्हणा :

ही तयार केलेल्या काही शब्दांची यादी आहे. यातील तुला जतिके शब्द वाचता येतील ततिके शब्द तू वाच. एक एक अक्षर वाचू नकोस पण पूर्ण शब्द वाच. उदा. तयार केलेला एक शब्द आहे

आता तु प्रयत्न कर, कृपया हे वाच (पुढील शब्द दाखवा - आई)

जर त्याने दलिला शब्द बरोबर वाचला तर म्हणा : **शाबास !** आई

जर मुलाने दलिला शब्द बरोबर वाचला नाही तर म्हणा : **हा शब्द आहे - .** आई

आता दुसरा शब्द वाचण्याचा प्रयत्न कर. हा शब्द वाच (पुढील शब्द दाखवा) राजा

(जर मुलाने वाचले रसक , तर म्हणा) : **शाबास,** राजा

जर त्याला दलिला शब्द बरोबर वाचता आला नाही तर म्हणा : **हा शब्द आहे** राजा

आता दुसरा शब्द वाचण्याचा प्रयत्न कर. हा शब्द वाच (पुढील शब्द दाखवा) काका

(जर मुलाने वाचले रसक , तर म्हणा) : **शाबास,** काका

जर त्याला दलिला शब्द बरोबर वाचता आला नाही तर म्हणा : **हा शब्द आहे** काका

तुला समजले का, की हा स्वाध्याय कसा सोडवायचा आहे ?

जेव्हा मी म्हणेन, सुरू कर, तेव्हा जतिक्या चांगल्याप्रकारे तुला शब्दांचे वाचन करता येईल, ततिक्या शब्दांचे वाचन कर. (उदाहरण दल्यिानंतर पहल्या ओळीतील शब्दांनी सुरूवात करून आडवे वाचन कर.) मी शांत बसून तुझे वाचन ऐकणार आहे, मदत लागल्यास मी मदत करेन. तयार आहेस का ? चल सुरूवात करू.

नाव	मला	हात	गाय	काम
वाघ	चला	आता	पतंग	ऐक
बसा	फुल	माया	आणि	ताई
आजी	यांनी	घार	चालू	गेला
हरिवी	पाणी	नाही	कावळा	मणी
भूक	मागे	चमिणी	हळू	तुझा
गौरी	झाली	पाऊस	माल	गाढव
गोल	आहे	मोर	बैल	मोठा
पैज	मैदान	नदी	झोका	पक्षी
माझ्या	आपले	उंट	म्हणाले	आई

Time Remaining

Autostop? ☐

Oral Reading Fluency Endline

वद्यिाथ्र्यांसाठी तयार केलेल्या पुस्तकातील गोष्ट (स्टमिुलाय बुक) दाखवा. म्हणा :

येथे छोटी गोष्ट दलिी आहे. ती तू मोठ्याने वाच, जेव्हा तुझे वाचन संपेल तेव्हा त्यावर आधारति काही प्रश्न मी तुला वचिारणार आहे. तुला काय करावयाचे आहे ते समजले का? जेव्हा मी सुरू कर म्हणेन तेव्हा तु शक्य ततिक्या चांगल्या प्रकारे गोष्ट वाच. जोपर्यंत तुला मदत लागत नाही, तोपर्यंत मी शांतपणे ऐकणार आहे. ठीक आहे, सुरू करू या.

अमर	नावाचा	एक	मुलगा	होता.
एकदा	अमर	आणि	त्याचे	काका
गणपती	पहायला	गेले.	त्यांनी	खूप
गणपती	पाहलिे.	गणपती	पाहताना	ते
एका	दुकानात	गेले.	अमरला	वाटले
पेढा	वकित	घ्यावा.	काकाकडे	पैसे
कमी	होते.	अमरने	पटकन	खशिातून
पैसे	काढले.	अमरच्या	आईने	त्याला
खाऊसाठी	पैसे	दलि	होते.	त्यांनी
पेढे	वकित	घेतले.	दोघांनी	पेढे
मजेत	खाल्ले.	आनंदाने	घरी	परतले.

Time Remaining

Autostop? ☐

Reading Comprehension Endline

आता मी, तु नुकत्याच वाचलेल्या गोष्टीवर तुला काही प्रश्न वचिारणार आहे. तू प्रश्नांची उत्तरे चांगल्या प्रकारे देण्याचा प्रयत्न कर.

1. अमर कोणाबरोबर गणपती बघायला गेला ? (Correct answer: (काकाबरोबर))

☐ Correct ☐ Incorrect ☐ No response

2. अमरला काय वकित घ्यावेसे वाटले ? (Correct answer: (पेढा))

☐ Correct ☐ Incorrect ☐ No response

3. अमरने खशिातून काय काढले ? (Correct answer: (पैसे))

☐ Correct ☐ Incorrect ☐ No response

4. अमरला पैसे कोणी दलि होते ? (Correct answer: (आईने))

☐ Correct ☐ Incorrect ☐ No response

5. अमर आणि काकाने पेढे कसे वकित घेतले ? (Correct answer: (अमरच्या खाऊच्या पैशातून, काकाकडच्या पैशातून, दोघांकडचे पैसे एकत्र करून.))

☐ Correct ☐ Incorrect ☐ No response

Oral Reading Fluency Baseline

वद्यिाथ्र्यांसाठी तयार केलेल्या पुस्तकातील गोष्ट (स्टमिुलाय बुक) दाखवा. म्हणा :

येथे छोटी गोष्ट दलिी आहे. ती तू मोठ्याने वाच, जेव्हा तुझे वाचन संपेल तेव्हा त्यावर आधारति काही प्रश्न मी तुला वचिारणार आहे. तुला काय करावयाचे आहे ते समजले का? जेव्हा मी सुरू कर म्हणेन तेव्हा तु शक्य ततिक्या चांगल्या प्रकारे गोष्ट वाच. जोपर्यंत तुला मदत लागत नाही, तोपर्यंत मी शांतपणे ऐकणार आहे. ठीक आहे, सुरू करू या.

एक	जय	नावाचा	मुलगा	होता.
जयच्या	भावाचे	नाव	राम	होते.
राम	आजारी	होता.	रामला	फुगा
खूप	आवडतो.	जयला	बागेत	फुगेवाला
दसिला.	त्याच्याकडे	खूप	फुगे	होते.
जयने	मोठा	फुगा	वकित	घेतला.
तो	फुगा	घेऊन	घरी	आला.
त्याने	रामला	फुगा	दलिा.	जय
आणि	राम	फुग्याशी	खेळले.	मुलांना
खेळताना	पाहून	आईला	आनंद	झाला.
आईने	मुलांसाठी	खीर	केली.	मुले
खीर	खाऊन	झोपी	गेली.	

Time Remaining

Autostop? ☐

Reading Comprehension Baseline

आता मी, तु नुकत्याच वाचलेल्या गोष्टीवर तुला काही प्रश्न वचिारणार आहे. तू प्रश्नांची उत्तरे चांगल्या प्रकारे देण्याचा प्रयत्न कर.

1. जयच्या भावाचे नाव काय ? (Correct answer: (राम))

☐ Correct ☐ Incorrect ☐ No response

2. जयने बागेत काय पाहिले ? (Correct answer: (फुगेवाला))

☐ Correct ☐ Incorrect ☐ No response

3. जयने रामला काय दिले ? (Correct answer: (फुगा))

☐ Correct ☐ Incorrect ☐ No response

4. आईला का आनंद झाला ? (Correct answer: ((मुलांना एकत्र खेळताना पाहून आईला आनंद झाला.))

☐ Correct ☐ Incorrect ☐ No response

5. जयने रामला फुगा का दिला ? (Correct answer: (राम आजारी होता म्हणून, रामला फुगा आवडतो म्हणून.))

☐ Correct ☐ Incorrect ☐ No response

Listening Comprehension Endline

पुढील iोग् मुलांvा मोठ्याvे वाचूvा दाखवा. स्पग्पणे आाणसावकाश वाचvा करा. तुमचा आवाज मुलांvा व्यवास्थति ऐकू येइ&ल इतपत मोठा असावा. iोग् केवळ एकदाच वाचा.जर मुलाvे/मुलाीvे कोणतेही वाक्य/शब्द परत वाचूvा दाखावण्याची ावणिंती केली तर तुम्ही तेवढे वाक्य ाकवि शब्द परत वाचूvा दाखवू शकता मा$ा पूण& iोग् परत वाचूvा दाखवू शकत vाही.

Read the passage only once. If the student asks to hear something again, you may answer specific questions but cannot read the passage again.

राजूच्या स्वप्नात शाहरूख खान आला. हळूच त्याच्या कानात बोलला. माझ्याबरोबर येशील का ? गाण्याच्या तालावर नाचशील का ?

राजू नाचू लागला. सगळे बघू लागले. तेवढ्यात राजू खाटेवरून पडला. स्वप्नातून जागा झाला.

1.	राजूच्या स्वप्नात कोण आला ? ((राजूच्या स्वप्नात शाहरूख आला))			
	☐ Correct	☐ Incorrect	☐ No response	
2.	शाहरूख राजूला काय म्हणाला ? ((माझ्याबरोबर येशील का ? /गाण्याच्या तालावर नाचशील का ?))			
	☐ Correct	☐ Incorrect	☐ No response	
3.	राजू कशावरून पडला ? ((राजू खाटेवरून पडला))			
	☐ Correct	☐ Incorrect	☐ No response	
4.	जागे झाल्यावर राजूला काय वाटले ? ((राजूला आनंद झाला/राजू दुःखी झाला/राजू खाटेवरून पडल्यामुळे त्याला इजा झाली))			
	☐ Correct	☐ Incorrect	☐ No response	

Listening Comprehension Baseline

पुढील iोग् मुलांvा मोठ्याvे वाचूvा दाखवा. स्पग्पणे आाण सावकाश वाचvा करा. तुमचा आवाज मुलांvा व्यवास्थति ऐकू येइ&ल इतपत मोठा असावा. iोग् केवळ एकदाच वाचा.जर मुलाvे/मुलीvे कोणतेही वाक्य/शब्द परत वाचूvा दाखावण्याची ावंिती केली तर तुम्ही तेवढे वाक्य ाकवि शब्द परत वाचूvा दाखवू शकता मा$ा पूण& iोग् परत वाचूvा दाखवू शकत vाही.

Read the passage only once. If the student asks to hear something again, you may answer specific questions but cannot read the passage again.

बंटी आपल्या जाडजुड मावशीबरोबर फरियला बाहेर गेला. बंटीची मावशी जाडजुड - मुले तची थुल थुल. मावशी डुलत डुलत चालायची. चालता चालता थकली, झाडाखाली बसली. मावशी राहलिी बसून, बंटी गेला पळून. आई आली धावून, मावशीला गेली घेऊन.

1.	बंटीची मावशी कशी होती ? ((जाडजूड))		
	☐ Correct	☐ Incorrect	☐ No response
2.	बंटीची मावशी कशी चालायची ? ((डुलत डुलत))		
	☐ Correct	☐ Incorrect	☐ No response
3.	झाडाखाली कोण बसले ? ((बंटीची मावशी))		
	☐ Correct	☐ Incorrect	☐ No response
4.	बंटी पळून का गेलो ? ((आईला आणायला, कंटाळून, मावशी बसली म्हणून))		
	☐ Correct	☐ Incorrect	☐ No response

ACR Student Questionnaire Endline

1. शाळेत तुझ्या बाई/सर तुझ्याशी मराठी भाषेत बोलतात का?
   At school, does your teacher talk to you Marathi?

☐ हो ☐ कधीतरी ☐ नाही ☐ माहीत नाही, सांगता येत नाही

2. शाळेत तुझे मत्रि/मैत्रणिी तुझ्याशी मराठी भाषेत बोलतात का?
   At school, do your friends speak to you in Marathi?

☐ हो ☐ कधीतरी ☐ नाही ☐ माहीत नाही, सांगता येत नाही

3. शाळेत मराठी भाषेतील वाचन साहत्रि्य आहे का?
   At school, are there reading materials in Marathi?

☐ हो ☐ कधीतरी ☐ नाही ☐ माहीत नाही, सांगता येत नाही

4. तुझ्या मत्रि/मैत्रणिींशी शाळेत तू मराठी भाषेत बोलतोस/बोलतेस का?
   At school, do you speak to your friends in Marathi?

☐ हो ☐ कधीतरी ☐ नाही ☐ माहीत नाही, सांगता येत नाही

5. तुझ्या भावंडांशी घरी तू मराठी भाषेत बोलतोस/बोलतेस का?
   At home, do you speak to your siblings in Marathi?

☐ हो ☐ कधीतरी ☐ नाही ☐ माहीत नाही, सांगता येत नाही

6. घरातील इतर मोठ्या व्यक्तींशी तू मराठी भाषेत बोलतोस/बोलतेस का?
   At home, do you speak to the adults in your home in Marathi?

☐ हो ☐ कधीतरी ☐ नाही ☐ माहीत नाही, सांगता येत नाही

7. तुझ्या घरी ब्रेल मराठी भाषेतील पुस्तके आहेत का?
   At home, are there reading materials in Bharati braille?

☐ हो, खूप साहत्रि्य आहे ☐ थोडेफार आहे ☐ नाही ☐ माहीत नाही, सांगता येत नाही

8. तुझ्या घरी रेडओि आहे का?
   At your house, do you have a radio?

☐ हो ☐ नाही

9. तुझ्या घरी टेलफिोन/मोबाईल फोन आहे का?
   At your house, do you have a telephone/mobile phone?

☐ हो ☐ नाही

10. तुझ्या घरी इलेक्ट्रीसीटी आहे का?
At your house, do you have electricity?

☐ हो ☐ नाही

11. तुझ्या घरी टि.व्ही. आहे का?
At your house, do you have a television?

☐ हो ☐ नाही

12. तुझ्या घरात शौचालय आहे का?
Do you have a toilet inside your house?

☐ हो ☐ नाही

13. तुझ्या घरी सायकल आहे का?
At your house, do you have a bicycle?

☐ हो ☐ नाही

14. तुझ्या घरी मोटर सायकल आहे का?
At your house, do you have a motorcycle?

☐ हो ☐ नाही

15. तुझ्या घरी मोटार, ट्रक, ट्र्क्टर, इंजनि बोट आहे का?
At your house, do you have a car, truck, 4x4, tractor, or engine boat?

☐ हो ☐ नाही

16. तुझ्या घरापासून बाजारापर्यन्त, मुख्य चौकापर्यन्त चालत जाण्यासाठी किती वेळ लागतो?
How long does it take — on foot — to travel to a shopping area (or center) from your home?

☐ २० मनिटांपेक्षा कमी ☐ २० मनिटांपेक्षा जास्त पण १ तासापेक्षा कमी ☐ १ तास कवि त्यापेक्षा जास्त

17. काल रात्री घरातील कामांमध्ये/शाळेत रहात असल्यास घरगुती कामांमध्ये तू किती वेळ घालवलास?
Last night, how much time did you spend on household chores (at home or school)?

☐ वेळ दिला नाही. ☐ थोडा वेळ दिला. ☐ खूप वेळ दिला.

18. तुझी आई मराठी भाषा वाचू शकते का?
Can your mother read in Marathi?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

19. तुझी आई मराठी भाषा ब्रेलमधून वाचू शकते का?
Can your mother read Bharati braille?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

20. तुझे वडील मराठी भाषा वाचू शकतात का?
Can your father read in Marathi?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

21. तुझे वडील मराठी भाषा ब्रेलमधून वाचू शकतात का?
Can your father read Bharati braille?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

22. तुझ्या पालकांचे शिक्षण कुठपर्यन्त झाले आहे? (ज्या पालकाचे शिक्षण अधिक झाले आहे, त्याबाबत लिहिवे.
What is the highest level of education your parents have achieved?

☐ पदव्युत्तर शिक्षण ☐ पदवी ☐ पदविका किंवा जास्त ☐ माध्यमिक शाळेपेक्षा जास्त

☐ माध्यमिक ☐ प्राथमिक ☐ माहीत नाही, सांगता येत नाही

23. तुझ्या घरी तुला कोणी गोष्टीची पुस्तके वाचून दाखवतात का?
Does someone from home read stories to you?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

24. तुझ्या घरी शालेय अभ्यासात तुला कोणी मदत करतात का?
Does someone from home look at your school work?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

25. गेल्या आठवड्यात, शालेय वेळाशिवाय किती दिवस तू एखाद्या व्यक्तीसोबत वाचन केलेस?
Last week, how many days did you read with someone outside of classtime?

☐ सातही दिवस ☐ ४ ते ६ दिवसे ☐ १ ते ३ दिवस ☐ माहीत नाही, सांगता येत नाही

26. तुझ्याकडे ब्रेल वाचन कसे करावे हे सांगणारे/त्यासाठी मदत करणारे अभ्यासक्रमाचे पुस्तक आहे का?
Do you have a textbook that helps you learn to read in braille?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

27. शाळेतील वाचन साहित्य ब्रेलमध्ये आहे का?
Are the reading materials at school in braille?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

28. तुझ्याकडे गणति शकायला मदत करणारे अभ्यासक्रमाचे पुस्तक आहे का?
Do you have a textbook that helps you learn math?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

29. दर आठवड्यातून कर्ती वेळ तुझे शक्षिक तुला वाचन करायला शकिवीतात/तुझे वाचन घेतात?
How often does your teacher teach you to read each week?

☐ रोज ☐ कधीकधी ☐ कधीच नाही

30. दर आठवड्यातून कर्ती वेळ तुझे शक्षिक तुला लेखन करायला शकिवीतात/तुझे लेखन घेतात?
How often does your teacher teach you to write each week?

☐ रोज ☐ कधीकधी ☐ कधीच नाही

31. तुला लेखन शकिवण्यासाठी तुझे शक्षिक कोणते साधन/साहत्यि वापरतात?
What does your teacher use to teach you to write?

☐ पाटी आणि खडू ☐ तंत्रज्ञानाचा वापर ☐ इतर

31a. वरील प्रश्नाचे उत्तर "इतर" असे असेल, तर कोणते तंत्रज्ञान ते नमूद करा.
If other, specify:

32. शांतपणे स्वतःचे स्वतः वाचन करण्यासाठी तुला शाळेत कधी वेळ मळिते?
At school, how often do you get time to read silently by yourself?

☐ रोज ☐ कधीकधी ☐ कधीच नाही

33. शाळेत, शक्षिक तुला तू करीत असलेल्या वाचनाबाबत प्रश्न वचिारतात का? जसे कोणते पुस्तक वाचले? काय गोष्ट होती?
At school, does your teacher ask you questions about what you are reading?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

34. तुला वाचताना अडखळायला होत असल्यास/वाचन चुकत असल्यास कर्ती वेळा शक्षिक मदत करतात?
How often does your teacher help you when you are struggling with reading?

☐ रोज ☐ कधीकधी ☐ कधीच नाही ☐ मला वाचनासाठी मदत लागत नाही.

35. तुझे शक्षिक तुला वाचन सुधारण्यात मदत करतात का?
Does your teacher work with you to help you become a better reader?

☐ हो ☐ नाही ☐ माहीत नाही, सांगता येत नाही

36. तुला वाचन करणे खूप आवडते,आवडते, फारसे आवडत नाही की वाचनाचा तटिकारा वाटतो?
Do you love, like, dislike, or hate reading?

- ☐ वाचन करणे खूप आवडते
- ☐ वाचन करणे आवडते
- ☐ वाचन करणे फारसे आवडत नाही
- ☐ वाचनाचा तटिकारा वाटतो
- ☐ माहीत नाही, सांगता येत नाही

37. शाळेत वाचन शकिताना तुला कसे वाटते?
How do you feel when you are learning to read at school?

- ☐ मला वाचन करता येईल असा वश्विास वाटतो
- ☐ मला भीती वाटते/अस्वस्थ वाटते.
- ☐ मला वाचन करणे आवडत नाही.
- ☐ माहीत नाही, सांगता येत नाही

38. माझ्या उज्वल भवष्यिासाठी मला वाचता येणे आवश्यक आहे. हे वधिान तुला बरोबर वाटते का?
Reading is important to my future.

- ☐ पूर्णपणे सहमत आहे.
- ☐ सहमत आहे.
- ☐ अमान्य आहे.
- ☐ माहीत नाही, सांगता येत नाही

39. तू इयत्ता १ ली च्या आधी बालवाडी शक्षिण घेतले होतेस का?
Did you go to nursery or pre-school before Class 1?

- ☐ होू
- ☐ नाही
- ☐ माहीत नाही, सांगता येत नाही

40. गेल्यावर्षी तू कोणत्या इयत्तेत शक्षिण घेत होतास/होतीस?
What class were you in last year?

- ☐ बालवाडी/पूर्वप्राथमकि शाळा
- ☐ इयत्ता १ ली
- ☐ इयत्ता २ री
- ☐ शाळेत नव्हतो
- ☐ माहीत नाही, सांगता येत नाही
- ☐ Grade 3

41. गेल्या महन्यिात शाळेत तू कतिी वेळा अनुपस्थति होतीस/होतास?
How many times were you absent from school in the last month?

- ☐ ५ दविसांपेक्षा जास्त
- ☐ ३-५ दविस
- ☐ १-३ दविस
- ☐ अनुपस्थति नव्हते

42. गेल्या आठवड्यात तू कतिी वेळा वाचनाच्या तासाला उपस्थति होतीस/होतास?
How many days did you attend reading class last week?

- ☐ ३-५ दविस
- ☐ ३-४ दविस
- ☐ २ दविसांपेक्षा कमी
- ☐ I didn't attend

43. या वर्षाच्या आधी अभ्यास करण्यासाठी तू कोणत्या तंत्रज्ञानाचा वापर करीत होतीस/होतास?
What technology have you used to help you learn before this year?

- ☐ मोबाईल फोन
- ☐ संगणक
- ☐ टबलेट
- ☐ इतर
- ☐ None

43a. वरील प्रश्नाचे उत्तर "इतर" असे असेल, तर कोणते तंत्रज्ञान ते नमूद करा.
If other, specify:

44. डेसी प्लेयर वापरणे तुला सहज जमते का?
How comfortable do you feel using the DAISY Player?

☐ अगदी सहज जमते. ☐ थोडेफार जमते. ☐ सहज जमत नाही.

45. पुस्तक वापरणे तुला सोईचे वाटते का/जमते का?
How comfortable do you feel using the book?

☐ अगदी सहज जमते. ☐ थोडेफार जमते. ☐ सहज जमत नाही.

46. रेश्माताई/हनुमंतासर यांच्यासोबत वेळ घालवल्यामुळे तुला वाचन करणे, डेसी प्लेयर वापरणे अधकि सोपे जाते का?
Did spending time with the story aunt and uncle increase your comfort with learning to read using the DAISY Player?

☐ होू ☐ नाही ☐ माहीत नाही, सांगता येत नाही

47. तुला डेसी प्लेअर आणि पुस्तके यांच्यासह वाचन करायला शकिणे अधकि आवडते की वर्गात ज्याप्रमाणे वाचन शकिवीतात तसे करायला आवडते.
Do you like learning to read using the DAISY Player and the book more than just learning in the classroom?

☐ हो (डेसी प्लेअर व पुस्तकांसह आवडते.) ☐ नाही (वर्गात ज्याप्रमाणे शकिवतिात त्याप्रमाणे आवडते) ☐ माहीत नाही, सांगता येत नाही

48. डेसी प्लेयर आणि पुस्तके यांमुळे तुझे वाचन सुधारले आहे. हे वधिान बरोबर आहे का?
Using the DAISY Player and the book improved your reading.

☐ पूर्णपणे बरोबर आहे ☐ बरोबर आहे. ☐ अमान्य आहे. ☐ माहीत नाही, सांगता येत नाही

49. तुला वाचन करण्यासाठी डेसी प्लेयर चा वापर करणे चालू ठेवायचे आहे. हे वधिान बरोबर आहे का?
You want to continue using the DAISY Player to learn to read.

☐ पूर्णपणे बरोबर आहे ☐ बरोबर आहे. ☐ अमान्य आहे. ☐ माहीत नाही, सांगता येत नाही

50. यावर्षी डेसी प्लेअर सोबत तू वाचलेल्या गोष्टी कश्या होत्या?
The things you've read this year with the help of DAISY Player were:

☐ सोप्या होत्या ☐ काही गोष्टी कठीण होत्या ☐ सर्व गोष्टी कठीण होत्या. ☐ माहीत नाही, सांगता येत नाही

51. तुला डेसी प्लेअर वापरायला आवडला. हे वधिान बरोबर आहे का?
You like the DAISY Player.

☐ पूर्णपणे बरोबर आहे ☐ बरोबर आहे. ☐ अमान्य आहे. ☐ माहीत नाही, सांगता येत नाही

52. यावर्षी वाचलेल्या गोष्टी तुला आवडल्या. हे वधिान बरोबर आहे का?
You like the stories you've read this year.

☐ पूर्णपणे बरोबर आहे ☐ बरोबर आहे ☐ अमान्य आहे ☐ माहीत नाही, सांगता येत नाही

53. डेसी प्लेअर सोबत वाचन केल्यामुळे वाचनाबाबतचा तुझा दृष्टीकोन बदलला का?
Did using the DAISY Player change your attitude toward reading?

☐ हो, सकारात्मक बदलला ☐ हो, नकारात्मक बदलला ☐ यामुळे माझ्या वाचनाबाबतच्या दृष्टीकोनात काहीही फरक पडला नाही.

54. डेसी प्लेअरच्या वापरामुळे तुझ्या वाचनाचा एकूण वेळ वाढला. हे वधिान बरोबर आहे का?
Using DAISY Player increased your reading time overall.

☐ पूर्णपणे बरोबर आहे. ☐ बरोबर आहे. ☐ अमान्य आहे. ☐ माहीत नाही, सांगता येत नाही

55. Last week, how often did you want to have your reading time, but it didn't happen?

☐ एकदा ☐ दोन वेळा ☐ तीन वेळा ☐ रोज

☐ Never

56. गेल्या आठवड्यात किती वेळा तू डेसी प्लेअर वापरलास?
Last week, how often did you use the DAISY Player?

☐ एकदा ☐ दोन वेळा ☐ तीन वेळा ☐ रोज

57. इतर विद्यार्थी किंवा तुझ्या मित्र/मैत्रणींच्या तुलनेत तू डेसी प्लेअर किती वेळा वापरतोस/वापरतेस?
Comparing with other students or friends, how often do you use the DAISY Player?

☐ इतरांपेक्षा जास्त ☐ इतरां इतकाच ☐ इतरांपेक्षा कमी

Annex B: **Student Questionnaire Results and Composites**

Table B.1: **Language Exposure Composite**

Questions and Response Options		Frequency	Percentage (%)
At school, does your teacher talk to you in Marathi?	No	2	4.1
	Sometimes	0	0.0
	Yes	47	95.9
	Don't know; No response	0	0.0
At school, do your friends speak to you in Marathi?	No	0	0.0
	Sometimes	0	0.0
	Yes	49	100.0
	Don't know; No response	0	0.0
At school, are there reading materials in Marathi?	No	0	0.0
	Yes, a lot	29	59.2
	Some	17	34.7
	Don't know; No response	3	6.1
At school, do you speak to your friends in Marathi?	No	0	0.0
	Sometimes	0	0.0
	Yes	49	100.0
	Don't know; No response	0	0.0
At home, do you speak to your siblings in Marathi?	No	7	14.3
	Sometimes	1	2.0
	Yes	41	83.7
	Don't know; No response	0	0.0
At home, do you speak to the adults in your home in Marathi?	No	7	14.3
	Sometimes	1	2.0
	Yes	41	83.7
	Don't know; No response	0	0.0
At home, are there reading materials in Bharati braille?	None	39	79.6
	Some	6	12.2
	Yes, a lot	3	6.1
	Don't know; No response	1	2.0

Table B.2: **Socioeconomic Status Composite**

Questions and Response Options		Frequency	Percentage (%)
At your house, do you have a radio?	No	25	51.0
	Yes	24	49.0
At your house, do you have a telephone/mobile phone?	No	1	2.0
	Yes	48	98.0
At your house, do you have electricity?	No	0	0.0
	Yes	49	100.0
At your house, do you have a television?	No	2	4.1
	Yes	47	95.9
Do you have a toilet inside your house?	No	21	42.9
	Yes	28	57.1
At your house, do you have a bicycle?	No	25	51.0
	Yes	24	49.0
At your house, do you have a motorcycle?	No	16	32.7
	Yes	33	67.3
At your house, do you have a car, truck, 4x4, tractor, or engine boat?	No	31	63.3
	Yes	18	36.7
How long does it take—on foot—to travel to a shopping area (or center) from your home?	Less than 20 minutes	26	53.1
	More than 20 minutes but less than an hour	16	32.7
	One hour or more	7	14.3
Last night, how much time did you spend on household chores (at home or school)?	None	14	28.6
	Some	30	61.2
	A lot	5	10.2

Table B.3: **Parental or Guardian Literacy Composite**

Questions and Response Options		Frequency	Percentage (%)
Can your mother read in Marathi?	No	16	32.7
	Yes	33	67.3
	Don't know; No response	0	0.0
Can your mother read Bharati braille?	No	48	98.0
	Yes	1	2.0
	Don't know; No response	0	0.0
Can your father read in Marathi?	No	13	26.5
	Yes	35	71.4
	Don't know; No response	1	2.0
Can your father read Bharati braille?	No	46	93.9
	Yes	2	4.1
	Don't know; No response	1	2.0
What is the highest level of education your parents have achieved?	Primary	7	14.3
	Secondary	7	14.3
	Post-Secondary	7	14.3
	Diploma or above	5	10.2
	Bachelors	4	8.2
	Masters	2	4.1
	Don't know; No response	17	34.7

Table B.4: **Family Reading Support Composite**

Questions and Response Options		Frequency	Percentage (%)
Does someone from home read stories to you?	No	26	53.1
	Yes	22	44.9
	Don't know; No response	1	2.0
Does someone from home look at your school work?	No	21	42.9
	Yes	26	53.1
	Don't know; No response	2	4.1
Last week, how many days did you read with someone outside of class time?	I did not read at all with someone from home last week.	17	34.7
	1-3 days	23	46.9
	4-6 days	3	6.1
	All 7 days	6	12.2

Table B.5: **Reading Materials Access Composite**

Questions and Response Options		Frequency	Percentage (%)
Do you have a textbook that helps you learn to read in braille?	No	27	55.1
	Yes	6	12.2
	Don't know; No response	16	32.7
Are the reading materials at school in braille?	No	2	4.1
	Yes	40	81.6
	Don't know; No response	7	14.3
Do you have a textbook that helps you learn math?	No	24	49.0
	Yes	15	30.6
	Don't know; No response	10	20.4

Table B.6: **Teacher Reading Support Composite**

Questions and Response Options		Frequency	Percentage (%)
How often does your teacher teach you to read each week?	Never	2	4.1
	Sometimes	27	55.1
	Every day	20	40.8
How often does your teacher teach you to write each week?	Never	2	4.1
	Sometimes	23	46.9
	Every day	24	49.0
What does your teacher use to teach you to write?	Slate and Stylus	0	0.0
	Technology	47	95.9
	Other	2	4.1
At school, how often do you get time to read silently by yourself?	Never	10	20.4
	Sometimes	31	63.3
	Every day	8	16.3
At school, does your teacher ask you questions about what you are reading?	No	7	14.3
	Yes	34	69.4
	Don't know, no response	8	16.3
How often does your teacher help you when you are struggling with reading?	Never	0	0.0
	Sometimes	14	28.6
	Every day	33	67.3
	I don't think I need help with reading.	2	4.1
Does your teacher work with you to help you become a better reader?	No	2	4.1
	Yes	45	91.8
	Don't know, no response	2	4.1

Table B.7: **Disposition to Reading Composite**

Questions and Response Options		Frequency	Percentage (%)
Do you love, like, dislike, or hate reading?	Hate reading	0	0.0
	Dislike reading	3	6.1
	Like reading	5	10.2
	Love reading	40	81.6
	Don't know, no response	1	2.0
How do you feel when you are learning to read at school?	I did not like to learn to read.	1	2.0
	I feel anxious	11	22.4
	I feel confident	31	63.3
	Don't know, no response	6	12.2
Reading is important to my future.	Disagree	0	0.0
	Agree	20	40.8
	Strongly agree	24	49.0
	Undecided	5	10.2

Table B.8: **Technology Use Composite**

Questions and Response Options		Frequency	Percentage (%)
How comfortable do you feel using the DAISY player?	Not comfortable	3	6.1
	Somewhat comfortable	10	20.4
	Very comfortable	36	73.5
How comfortable do you feel using the braille book?	Not comfortable	7	14.3
	Somewhat comfortable	8	16.3
	Very comfortable	34	69.4
Did spending time with the story aunt and uncle increase your comfort with learning to read using the DAISY player?	No	2	4.1
	Yes	37	75.5
	Don't know, no response	10	20.4
Do you like learning to read using the DAISY player and the book more than just learning in the classroom?	No	11	22.4
	Yes	27	55.1
	Don't know, no response	11	22.4

Table B.9: **Engagement in Program Composite**

Questions and Response Options		Frequency	Percentage (%)
Using the DAISY player and the book improved your reading.	Disagree	8	16.3
	Agree	18	36.7
	Strongly agree	12	24.5
	Undecided	11	22.4
You want to continue using the DAISY player to learn to read.	Disagree	3	6.1
	Agree	23	46.9
	Strongly agree	15	30.6
	Undecided	8	16.3
The things you've read this year with the help of DAISY player were:	Easy	33	67.3
	Sometimes hard	12	24.5
	Always hard	3	6.1
	Undecided	1	2.0
You like the DAISY player.	Disagree	0	0.0
	Agree	15	30.6
	Strongly agree	31	63.3
	Undecided	3	6.1
You like the stories you've read this year.	Disagree	0	0.0
	Agree	23	46.9
	Strongly agree	25	51.0
	Undecided	1	2.0
Did using the DAISY player change your attitude toward reading?	It didn't change my attitude toward reading.	19	38.8
	Yes, negatively	0	0.0
	Yes, positively	30	61.2
Using DAISY player increased your reading time overall.	Disagree	4	8.2
	Agree	29	59.2
	Strongly agree	7	14.3
	Undecided	9	18.4

Table B.10: **Additional Questionnaire Items**

Questions and Response Options		Frequency	Percentage (%)
Last week, how often did you want to have your reading time with your teacher, but the teacher didn't offer the session?	None	34	69.4
	Once	12	24.5
	Twice	2	4.1
	Three times	1	2.0
	Every day	0	0.0
Last week, how often did you use the DAISY player?	Once	19	38.8
	Twice	28	57.1
	Three times	2	4.1
	Every day	0	0.0
Comparing with other students or friends, how often do you use the DAISY player?	Less than others	1	2.0
	The same as others	48	98.0
	More than others	0	0.0
Did you go to nursery or pre-school before Class 1?	No	14	28.6
	Yes	32	65.3
	Don't know, no response	3	6.1
What class were you in last year?	Class 1	3	6.1
	Class 2	14	28.6
	Class 3	32	65.3
	Not in School	0	0.0
	Don't know; No response	0	0.0
How many times were you absent from school in the last month?	Not absent	30	61.2
	1-3 days	12	24.5
	3-5 days	3	6.1
	More than 5 days	4	8.2
How many days did you attend reading class last week?	None	9	18.4
	Fewer than 2 days	29	59.2
	3-4 days	9	18.4
	5 days	2	4.1

Table B.11: **Mean Results by EGRA Subtask and SES**

Subtask	Low SES (*N* = 27)				High SES (*N* = 22)				Mean Change	
	Baseline		Endline		Baseline		Endline			
	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Low SES	High SES
Letter name identification (CLNP3M)	43.4	22.2%	66.1	14.8%	55.2	9.1%	82.1	9.1%	22.7	26.9
Syllable identification (CSSP3M)	16.5	51.9%	40.3	44.4%	30.4	40.9%	55.9	36.4%	23.8	25.5
Familiar word reading (CFWP3M)	15.0	51.9%	38.9	29.6%	34.1	31.8%	58.4	22.7%	24.0	24.3
Oral reading fluency (CWP3M)	13.8	59.3%	45.3	40.7%	34.6	33.3%	74.2	19.0%	31.5	39.6
Reading comprehension (correct out of five)	1.0	66.7%	2.0	40.7%	2.0	38.1%	3.0	23.8%	1.0	1.0
Listening comprehension (correct out of four)	2.3	11.1%	2.8	11.1%	2.6	4.5%	3.2	0.0%	0.5	0.6

Table B.12: **Mean Results by EGRA Subtask and Family Reading Support**

Subtask	Low Family Support (*N* = 27)				High Family Support (*N* = 19)				Mean Change	
	Baseline		Endline		Baseline		Endline			
	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Low Family Support	High Family Support
Letter name identification (CLNP3M)	39.7	14.8%	65.6	11.1%	63.7	10.5%	90.4	5.3%	25.9	26.7
Syllable identification (CSSP3M)	13.4	51.9%	32.3	48.1%	34.4	36.8%	68.7	26.3%	18.9	34.3
Familiar word reading (CFWP3M)	13.7	44.4%	35.7	29.6%	33.1	36.8%	63.3	15.8%	21.9	30.2
Oral reading fluency (CWP3M)	12.0	57.7%	41.1	34.6%	34.5	31.6%	77.4	21.1%	29.2	42.9
Reading comprehension (correct out of five)	0.9	61.5%	1.9	38.5%	2.1	42.1%	3.3	21.1%	1.0	1.2
Listening comprehension (correct out of four)	2.1	11.1%	2.7	3.7%	2.7	5.3%	3.4	5.3%	0.6	0.6

Table B.13: **Mean Results by EGRA Subtask and Reading Materials Access**

Subtask	Low Materials Access (*N* = 20)				High Materials Access (*N* = 10)				Mean Change	
	Baseline		Endline		Baseline		Endline			
	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Low Materials Access	High Materials Access
Letter name identification (CLNP3M)	33.8	15.0%	54.6	10.0%	74.2	10.0%	101.9	0.0%	20.7	27.7
Syllable identification (CSSP3M)	12.2	55.0%	25.5	55.0%	38.2	20.0%	78.9	10.0%	13.3	40.7
Familiar word reading (CFWP3M)	9.9	55.0%	29.8	30.0%	49.1	10.0%	88.8	10.0%	19.8	39.7
Oral reading fluency (CWP3M)	7.9	68.4%	34.4	36.8%	45.1	10.0%	106.5	10.0%	26.4	61.4
Reading comprehension (correct out of five)	0.6	73.7%	1.7	42.1%	2.8	10.0%	3.9	10.0%	1.2	1.1
Listening comprehension (correct out of four)	2.6	5.0%	3.1	5.0%	2.2	10.0%	2.6	10.0%	0.5	0.4

Table B.14: **Mean Results by EGRA Subtask and Disposition to Reading**

Subtask	Low Disposition (*N* = 21)				High Disposition (*N* = 18)				Mean Change	
	Baseline		Endline		Baseline		Endline			
	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Mean Scores	% of Zero Scores	Low Disposition	High Disposition
Letter name identification (CLNP3M)	32.5	14.8%	62.5	11.1%	70.2	10.5%	102.0	5.3%	30.0	31.8
Syllable identification (CSSP3M)	9.5	51.9%	38.8	48.1%	41.8	36.8%	74.2	26.3%	29.3	32.4
Familiar word reading (CFWP3M)	10.9	44.4%	36.8	29.6%	42.6	36.8%	72.1	15.8%	25.9	29.5
Oral reading fluency (CWP3M)	11.0	57.7%	41.2	34.6%	41.5	31.6%	89.5	21.1%	30.2	48.1
Reading comprehension (correct out of five)	0.7	61.5%	2.1	38.5%	2.6	42.1%	3.4	21.1%	1.5	0.8
Listening comprehension (correct out of four)	2.5	11.1%	3.3	3.7%	2.8	5.3%	3.1	5.3%	0.8	0.2

Annex C: **Additional Results**

Table C.1: **Dosage by School**

School	Expected Dosage (minutes)	Actual Dosage (minutes)	Percentage of Expected Dosage Received by Students (%)
School A	2610	2019	77.4
School B	3270	1918	58.7
School C	3015	1958	64.9
Total: All Schools	**3041**	**1953**	**64.2**

Table C.2: : **Mean Change by EGRA Subtask and Dosage Level**

Subtask	Below Average Dosage (1,953 minutes or less) (*N* = 15)		Above Average Dosage (<1,953 minutes) (*N* = 31)	
	Mean Change	SD	Mean Change	SD
Letter name identification (CLNP3M)	26.1	35.1	25.8	38.6
Syllable identification (CSSP3M)	21.7	27.3	28.3	34.3
Familiar word reading (CFWP3M)	17.9	20.4	28.8	26.8
Oral reading fluency* (CWP3M)	23.4	24.0	43.1	36.0
Reading comprehension (correct out of five)	0.6	1.2	1.3	1.4
Listening comprehension (correct out of four)	0.5	1.5	0.5	1.3

* t(36.5)=-2.156, p=0.038

Table C.3: **Reliability Results for Endline EGRA**

Subtask	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Letter name identification (percent correct)	0.854	0.891
Syllable identification (percent correct)	0.870	0.890
Familiar word reading (percent correct)	0.941	0.898
Oral reading fluency (percent correct)	0.937	0.888
Reading comprehension (percent correct)	0.897	0.887
Listening comprehension (percent correct)	0.338	0.953
	EGRA Coefficient Alpha	**0.918**