



# Impact Evaluation

## Stylized Results

**Scaling up Early Reading  
Intervention (SERI)**

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# **Impact Evaluation of Scaling up Early Reading Intervention (SERI)**

**Demonstration and  
Partnership Models**

Stylized Results

## SERI Overview

In September 2015, Room to Read entered into an agreement with the United States Agency for International Development (USAID) to implement a large-scale and innovative early-grade reading program, known as Scaling up Early Reading Intervention (SERI), to benefit children in government primary schools in India. The foundation for SERI is Room to Read's Literacy Program, a school-based intervention that seeks to develop children's reading skills and reading habits in the early primary grades through: (i) *Instruction*: teachers use Room to Read designed reading and writing instruction supplementing the government curriculum in classrooms for children in Grades 1 and 2; and (ii) *Library and Quality Reading Materials (QRM)*: Room to Read establishes child friendly school libraries to provide children with access to quality reading materials and proactive promotion of reading within and beyond the library setting. For the instruction component, Room to Read worked with the Department of Education (SSA, SCERT and DIET) to design a program that provides a strong foundation in reading and writing skills for all early primary grade children in the intervention schools, with the goal that children will become fluent readers by the end of Grade 2. The program includes detailed lesson plans, reading materials, and comprehensive teacher professional development training that is supplemented by continuous on-site handholding support and monitoring by Room to Read.

The first phase of SERI started with Room to Read demonstrating a comprehensive and effective high fidelity model to improve reading skills of early grade children through direct implementation of the program in select government primary schools; this is referred to as the demonstration model. This model was first launched in 180 schools in Chhattisgarh and Uttarakhand at the

beginning of the 2015-16 academic year. Two years later, in 2017-18, the demonstration model was expanded to 90 government schools in Madhya Pradesh and Uttar Pradesh.

In the subsequent phase of SERI, Room to Read started providing assistance to the state governments to scale up the model across a larger number of schools; this is referred to as the *partnership* model. This model was initiated at the beginning of the 2016-17 academic year in 1,010 schools in Chhattisgarh and Uttarakhand. In 2017-18, the partnership model was further expanded to more than 700 schools in Madhya Pradesh and Uttar Pradesh.

## SERI Evaluation

Alongside the implementation of the SERI under these two models, Room to Read also conducted the following studies to evaluate the impact of the intervention on children's reading skills:

- **Demonstration Model Impact Evaluation:** A two-year (2015-17) study to assess the impact of SERI under demonstration model launched in 2015-16 in Chhattisgarh and Uttarakhand; and
- **Partnership Model Impact Evaluation:** A two-year (2016-18) study to evaluate the impact of SERI under partnership model initiated in 2016-17 in Chhattisgarh and Uttarakhand.

Though the geography, timeline and intervention modalities of the models were different, these impact evaluations<sup>i</sup> were done with the following common objectives:

- Determine whether the program is having an impact on children's reading skills after one and two academic years of intervention;
- Determine whether the implementation of the program facilitates the acquisition

of early reading skills in children at a rate that ensures that they will reach the goal of becoming fluent readers by the end of Grade 2.

### What is Early Grade Reading Assessment?

EGRA is an individually administered oral assessment of the most basic foundation skills for literacy acquisition in early grades. Given the imperial base of “literacy acquisition”, the three domains of knowledge i.e. phonological awareness, print knowledge and orthographic knowledge are scientifically measured by EGRA through different reading subtasks; letter recognition, non-word reading , word/sentence dictation” etc.

To fulfill these objectives, these studies evaluated the impact under each model by comparing the changes in children’s reading skills in a sample of SERI schools before and after benefitting from the program for two years with the changes in children’s reading skills in equal number of matching *comparison schools* that were not getting benefits from the program during the same time period. Data on children’s reading skills data was collected through Early Grade Reading Assessment (EGRA)<sup>ii</sup> at two points of time as described here.

- **Start-of-Grade 1 Baseline:** EGRA data was collected from the children at the start-of-Grade 1 in both intervention and comparison schools at the beginning of the school year when SERI was launched in the intervention schools (also referred as project schools); and
- **End-of-Grade 2 Endline:** EGRA data was collected from the children at the end-of-Grade 2 in the same project and comparison schools when the program had completed two full years of implementation in the intervention schools.<sup>iii</sup>

The following section presents the results of the two studies in brief highlighting the impact of SERI under both demonstration and partnership models. Here, the impact evaluation results are presented under four groups. *First*, gains in the four key reading skills (letter sounding fluency, nonsense/non-word reading fluency, oral reading fluency and reading comprehension) of children in project and comparison schools over the two-year program cycle are presented. *Second*, effect sizes, the standardized mean differences in the two-year gains between project and comparison schools, for the key reading skills are presented. *Third* section describes children’s performance on oral reading fluency and reading comprehension against commonly used benchmarks. *Lastly*, prevalence of non-readers in project schools after a two-year program cycle and in comparison schools is shown.

### What is Effect Size?

Effect size statistic is used to make comparisons across measures that use different scales or unit. Here, standardized mean effect size statistic was used, through which an effect size of 0.8 or higher is considered large. Effect size for each reading skill was estimated as the mean difference in two-year gains between the project and comparison schools divided by the pooled standard deviation of scores in project and comparison schools. An effect size is exactly equivalent to a “Z-score” of a standard normal distribution. For example, an effect size of “+1” means that, on average, reading skill of a child in project school is “+1” standard deviation above the score of a child in comparison school, and hence exceeds the scores of 84 percent of the children in the comparison group.

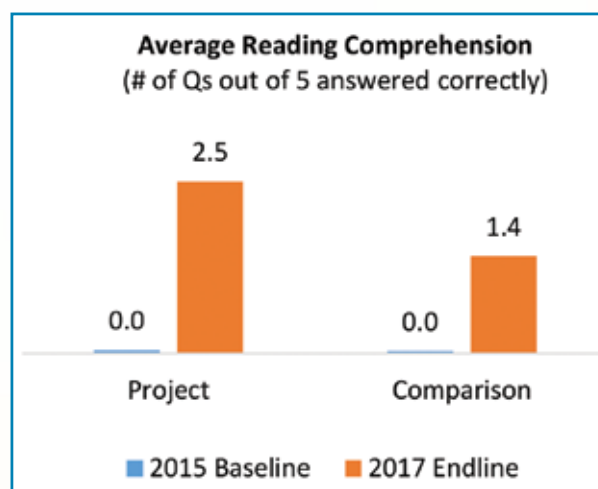
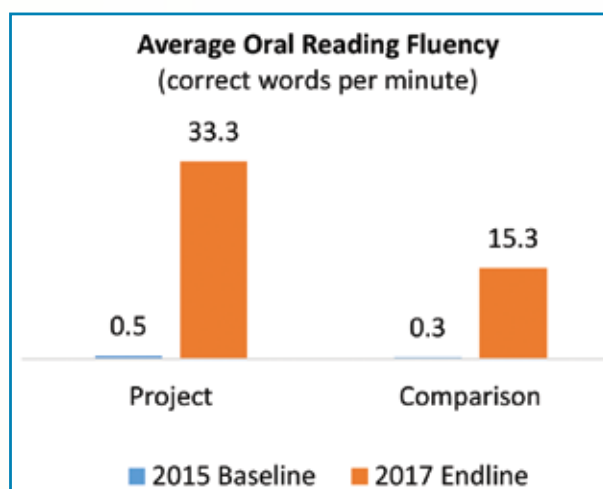
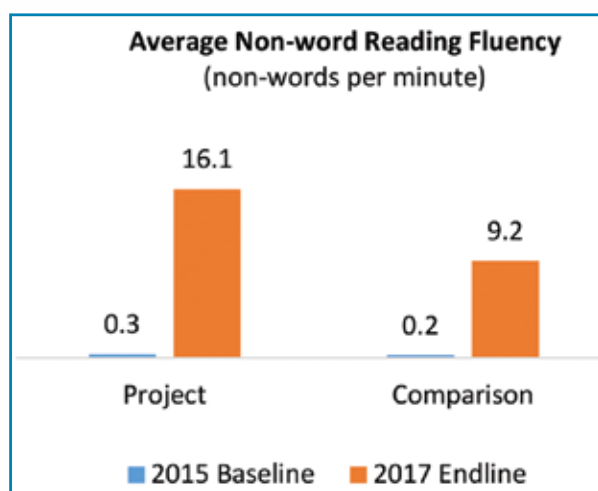
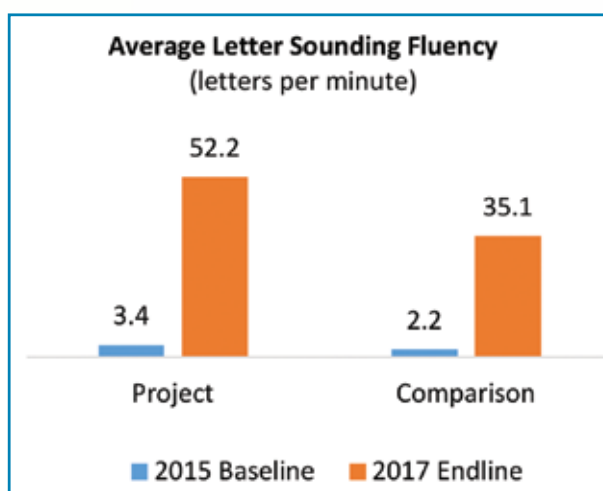
# Results- Demonstration Model Impact Evaluation (2015-17)

## Gains in Reading Skills

After two years of intervention, children in SERI schools under the demonstration model experienced greater and statistically significant gains in reading skills than their counterparts in comparison schools. **On average, project school children made 1.5 to 2 times greater progress than their comparison-school counterparts on the various reading skills assessed.**

- By the end of Grade 2, children in project schools could correctly read an average of 33 words per minute, while children in comparison could correctly read only 15 words per minute.
- On reading comprehension, Grade 2 children in project schools could correctly answer an average of 2.5 questions correctly (out of five) in contrast to just 1.4 questions answered correctly by Grade 2 children in comparison schools.

*Children in Literacy Program schools under demonstration model made significantly greater gains in reading skills among program school children in comparison to control school children*



*Difference in two-year gains in each reading skill between project and comparison schools was statistically significant at  $p < 0.001$*

## Effect Size of the Intervention

The effect sizes for SERI under the demonstration model were large (i.e. greater than 0.8) across all four reading skills assessed, with the largest effect size of 1.4 estimated for oral reading fluency.

## Benchmarks – Oral Reading Fluency and Reading Comprehension

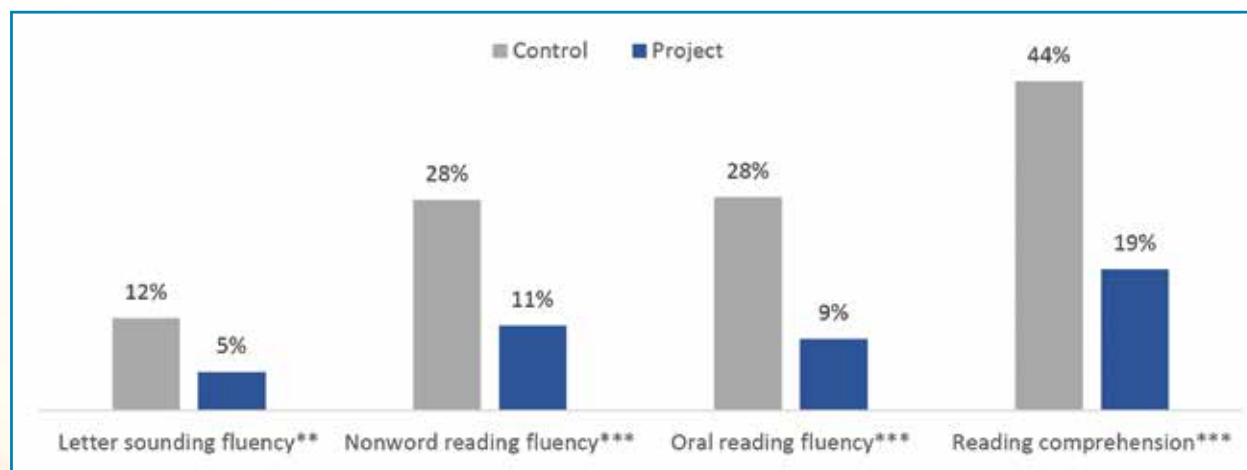
About 32 percent of the children in project schools met or exceeded the oral reading fluency benchmark of 45 correct words per minute by the end of Grade 2 (compared to only 8 percent for comparison school children). Also, 35 percent of the project school children reached the 80 percent reading comprehension benchmark (i.e. could correctly answer at least four out of five comprehension questions) whereas just 13 percent of the comparison school children reached the same benchmark.<sup>v</sup>

Independent studies in multiple countries have shown that children at the end of Grade 2 need to reach a fluency rate of roughly 45 to 60 words read correctly per minute (or local-language equivalent) as a prerequisite for reading with comprehension.<sup>iv</sup> Room to Read aims for children to reach oral reading fluency of at least 45 correct words per minute by the end of Grade 2 for its Hindi language Literacy Program. Till date research on fluency benchmarking for Hindi language is limited and various organizations (e.g. Research Triangle Institute RTI, Pratham, etc.) including Room to Read are trying to fill this gap with independent studies. At a benchmarking workshop organized by USAID India with its partners, and facilitated by RTI in May 2018, the Hindi benchmark was set at 35 correct words per minute.

## Prevalence of Non-readers

Share of Grade 2 children in SERI schools who scored zero (referred as non-readers) in each reading skills test was significantly lower in project schools after two years of intervention than their counterparts in comparison schools across all four reading skills.

*Prevalence of non-readers is significantly lower in Literacy Program schools under demonstration model.*



*Legend of statistical significance of differences between project and comparison schools:  
\*\*\* < 0.001, \*\* < 0.01, \* < 0.05*

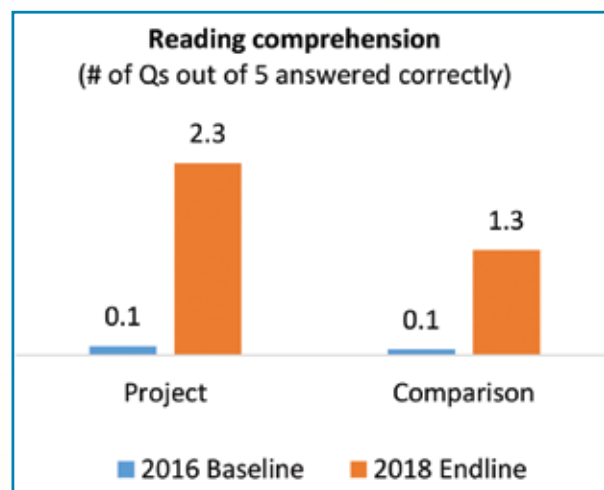
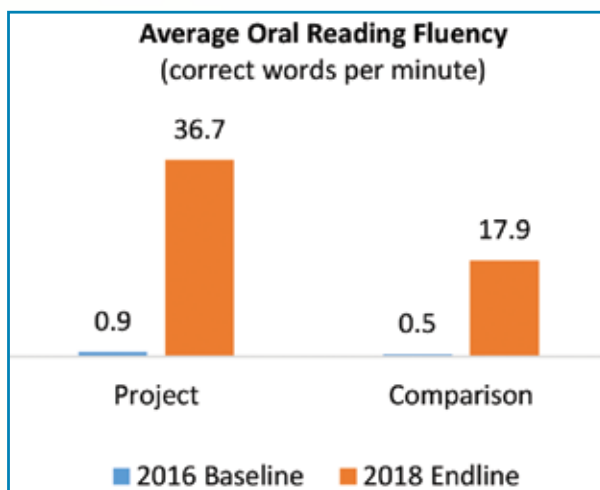
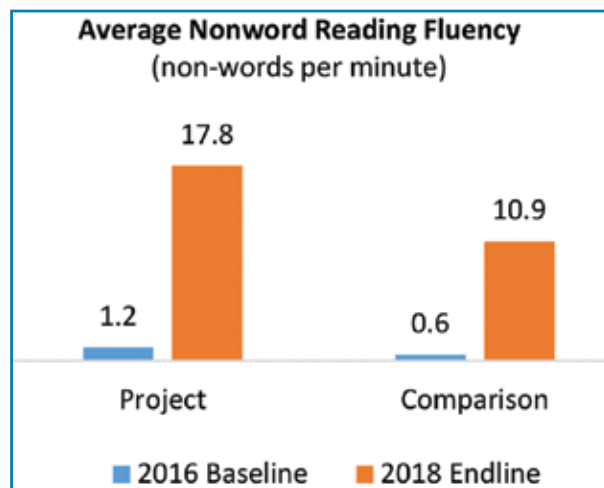
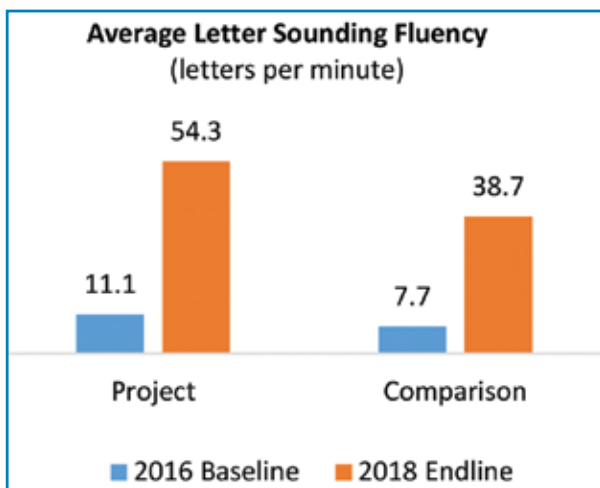
# Results – Partnership Model Impact Evaluation (2016-18)

## Gains in Reading Skills

Children in SERI schools under partnership model also experienced greater and statistically significant gains in reading skills after two years of intervention than their counterparts in comparison schools. **On average, two-year gains made by project school children on the various reading skills assessed were 1.4 to 2 times higher than the progress made by their comparison-school counterparts.**

- By the end of Grade 2, children in project schools could correctly read an average of 37 words per minute, while children from comparison could read only 18 words correctly per minute.
- On reading comprehension, children in project schools could correctly answer an average of 2.3 questions correctly (out of five), compared to just 1.3 questions answered correctly by comparison school children.

*Children in Literacy Program schools under partnership model made significantly greater gains in reading skills after two years in intervention than the children in comparison schools*



*Difference in two-year gains in each reading skill between project and comparison schools was statistically significant at  $p < 0.001$*



## Effect Size of the Intervention

The effect sizes for the SERI under demonstration model were large (i.e. greater than 0.8) for two of the four reading skills assessed, with the largest effect size of 1.3 estimated for oral reading fluency.

## Benchmarks – Oral Reading Fluency and Reading Comprehension

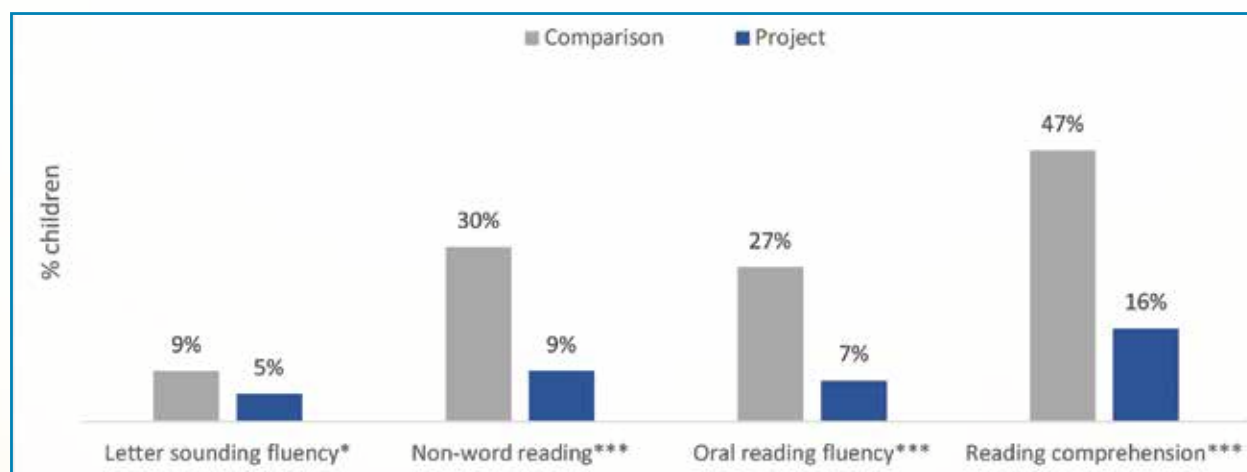
About 32 percent of the children in project schools met or exceeded the oral reading fluency benchmark of 45 correct words per minute by the end of Grade 2 (compared to only 12 percent for comparison school

children). Also, 23 percent of the project school children reached the 80 percent reading comprehension benchmark (i.e. could correctly answer at least four out of five comprehension questions) whereas just 11 percent of the comparison school children reached the same benchmark.<sup>iv</sup>

## Prevalence of Non-readers

Share of non-readers among Grade 2 children in partnership model SERI schools in each reading skills test was significantly lower in project schools after two years of intervention than their counterparts in comparison schools across all four reading skills.

*Prevalence of non-readers is significantly lower in Literacy Program schools under partnership model*



*Legend of statistical significance of differences between project and comparison schools:  
\*\*\* < 0.001, \*\* < 0.01, \* < 0.05*

## Key Takeaways

- Findings from these two impact evaluations indicate that SERI under both demonstration and partnership models is having a large positive impact on children's reading skills.
- Two-year gains in reading skills made by children benefiting from SERI under each model was significantly higher than the gains made by children in comparison schools. After two years of intervention, gain in oral reading fluency under each model in project schools was higher than the gain in comparison schools by 18 correct words per minute. Moreover, 32 percent of the end-of-Grade 2 children in project schools under each model reached the oral fluency reading benchmark of 45 correct words per minute after two years of project intervention.
- Under the partnership model, even though the Literacy Program was scaled up to a relatively bigger geography with minimal logistic support provided by Room to Read, and the government taking on significant responsibility, the impact of the intervention was as encouraging as had been obtained for the demonstration model schools.

For more details about the evaluations please contact Sourav Banerjee, Country Director, Room to Read India at [sourav.banerjee@roomtoread.org](mailto:sourav.banerjee@roomtoread.org)

<sup>i</sup>Impact evaluations of the Literacy Program in Madhya Pradesh and Uttar Pradesh under demonstration and partnership models launched in 2017-18 are currently underway.

<sup>ii</sup>For more information on EGRA, please refer : <https://www.globalreadingnetwork.net/resources/early-grade-reading-assessment-egra-toolkit-second-edition>

<sup>iii</sup>Under "Demonstration Model Impact Evaluation", EGRA data was also collected from the end-of-Grade 1 children in the project and comparison schools when the program had completed one year of implementation in the intervention schools.

<sup>iv</sup>Abadzi, H. (2011). Reading Fluency Measurements in EFA FTI Partner Countries: Outcomes and Improvement Prospects. Working Paper

<sup>v</sup>Difference between children from demonstration model Literacy Program schools and comparison schools on each of the benchmarks related to the oral reading fluency and reading comprehension was statistically significant at  $p < 0.001$ .

<sup>vi</sup>Difference between children from partnership model Literacy Program schools and comparison schools on each of the benchmarks related to the oral reading fluency and reading comprehension was statistically significant at  $p < 0.001$ .



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