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A graphic of an open book with a dark blue cover and a white page. The text "Learn to Read, Read to Learn" is written in white on the page. Two yellow arrows form a loop around the text. A yellow bookmark is visible at the bottom of the page. Above the book, there are several white decorative lines.

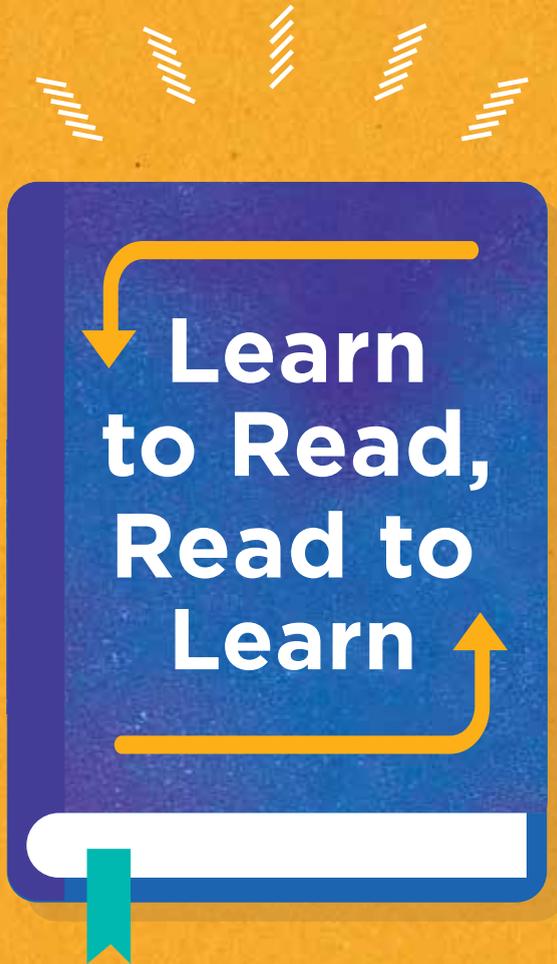


“The **Learn to Read, Read to Learn** project has given us an opportunity to integrate *Galli Galli Sim Sim* content in low-resourced government-run primary schools in Bihar. We have introduced multiple, low-cost innovative tools and provided engaging learning materials to help improve reading skills amongst children, who otherwise, have little or no access to quality learning materials.”

Sashwati Banerjee

Managing Director,
Sesame Workshop India





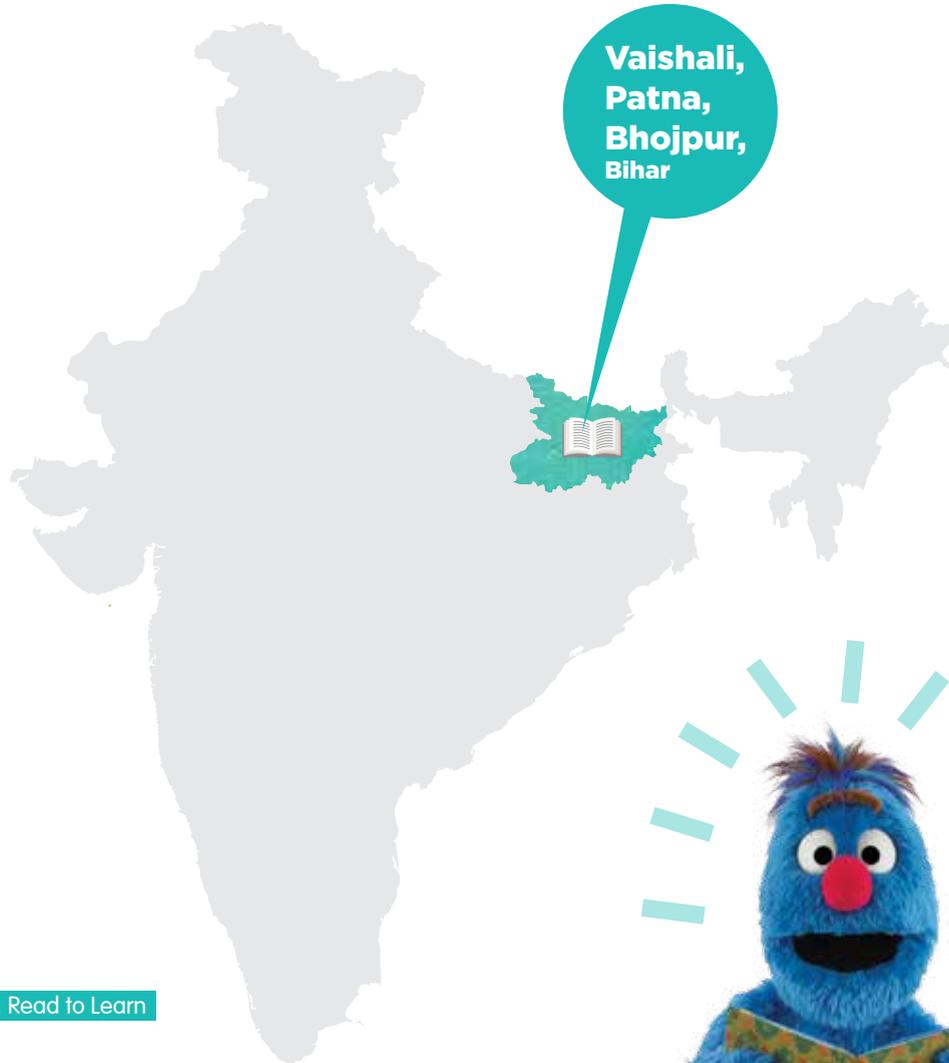
An initiative of



ALL CHILDREN READING 1

Learn to Read, Read to Learn (Bihar)

October 2012 - March 2015



Learn to Read, Read to Learn

The **Learn to Read, Read to Learn (LRRL)** project in Bihar was supported by the All Children Reading (ACR) Grand Challenge grant to improve reading in primary grade children. Sesame Workshop India's (SWI) aim was to use innovative and engaging content in government schools in Bihar to demonstrate an improvement in reading skills, oral reading fluency and comprehension. This two-and-a-half-year project was rolled out in primary schools across the districts of Vaishali, Patna and Bhojpur in the state of Bihar, India, and reached approximately 30,000 children. Books, worksheets, games and audio-visual materials were developed and distributed to the children. Additionally, a subset of approximately 4,000 children also received digital games. Teachers were trained to deploy the content in classrooms and encourage the children to use the materials. Early Grade Reading Assessment (EGRA), qualitative studies and other research were used to measure the impact of the program.

**30
months**

**across the districts of
Vaishali, Patna and Bhojpur**

**reached
30,000
children**



Second grader Meenu smiles shyly and whispers that she loves going to school. Her favorite time at school is when she reads storybooks that feature Sesame Workshop India's beloved muppets, Chamki and Googly. Meenu also enjoys working with a phonic phone that allows her to monitor her voice as she reads. Meenu thinks her reading is improving.

BACKGROUND

Sesame Workshop India Trust is leading the movement to change the educational paradigm through its innovative projects that put children at the center of development.

Under our flagship initiative *Galli Galli Sim Sim* (GGSS), we work in low resource classrooms and communities to bring to children and their caregivers language and strategies that have proven impact on their literacy, numeracy, physical wellbeing and social emotional skills. Since 2007, we have reached over five million children across India in partnership with the government, other nonprofit organizations and the corporate sector in our mission to help kids grow smarter, stronger and kinder.

Sesame Workshop India Trust received the All Children Reading grant to:

- * Design developmentally appropriate engaging content, based on the National Curriculum Framework guidelines and the State Council Educational Research and Training (SCERT) guidelines for children in Grades 1 and 2
- * Work with the state government to integrate the Learn to Read and Read to Learn components into the prescribed curriculum and implement the project in schools in Bihar
- * Leverage additional funding from Qualcomm's Wireless Reach™ to provide digital games to a subset of children
- * Adapt and use proven tools to monitor and evaluate the project



GALLI GALLI SIM SIM

कीटाणुओं से मुकाबला

WHY?

There is a critical need to improve children's reading. Despite high enrolment in schools, children are reading well below grade level.

The most recent Annual Status of Education Report (ASER) highlights that **91%** of children in Grade 1 are unable to read Grade 1 level text

////////////////////////////////////

The project state, Bihar, has one of the most challenging educational profiles in the country.

93.9% children in Grade 1 cannot read Grade 1 level text

93.6% children in Grade 2 cannot read Grade 2 level text.¹

1. Annual Status of Education Report 2014 (Rural)



There are multiple factors that contribute to low educational outcomes:

- **Poorly trained teachers**
- **Overcrowded classrooms**
- **Scarce resources**

Most children have no access to age-appropriate content or reading material other than textbooks.

The ACR Grand Challenge was an opportunity for Sesame Workshop India to use our proven methodology, determine whether providing engaging high-quality teaching and learning materials can bring back 'fun' in learning, and lead to improved outcomes in early grade reading.



WHAT?

Reading is a complex and dynamic process, greater than the sum of its parts. Successful reading comprehension involves many skills. These include:

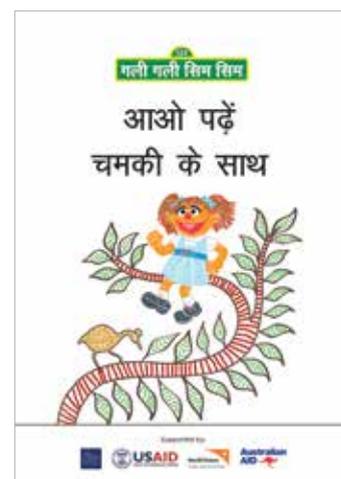
- **Recognizing letters**
- **Associating letters with sounds**
- **Reading familiar words**
- **Comprehending the text**
- **Making personal connections between what is read and one's own experiences**



Drawing on theory and research, the project aimed to improve children's Hindi reading comprehension and fluency skills. A needs assessment conducted in February 2013 revealed that children were reading well below grade level. Based on the findings, the project developed engaging, age-appropriate and targeted material to build children's reading skills.

The print and audio components included a diverse set of materials. These included storybooks, reading sheets, workbooks, games, phonic phones (devices that allow children to monitor their reading) and read-along storybooks (i.e. audio recorded GGSS books).

PRINT + AUDIO



DIGITAL



Shabdo Ka Khazana (Word Treasure Hunt) 1 and 2

Help Elmo visit different islands and solve a challenge at each one.



The game helped children to,

Identify letters, beginning sounds, ending sounds

Make rhyming words

Learn new words and their meanings



Chitra Pehchano (Identify the picture)

Help Chamki match sentences with pictures.

The game helped children to,

Match pictures with words

Build vocabulary



Sabse Alag (Identify the odd one out)

Help Boombah identify the odd one out.

The game helped children to,

Build vocabulary

Classify words and objects



Kavita Banao (Make a rhyme)

Help Elmo complete riddles by matching rhyming words.

The game helped children to,

Make rhyming words

Learn to solve simple riddles



Shobha Kumari, a seven year old, loves coming to school. Her favorite activity is playing *Galli Galli Sim Sim* games on the tablet. Her favorite game is *Sabse Alag*! She now helps her other friends and classmates to use tablets.

WHO?

Over 30,000 children in Grades 1 and 2 from 375 schools participated in the project. The schools were located in **Patna** (175), **Vaishali** (100) and **Bhojpur** (100).

All the participating schools received the GGSS kits. A subset of 4000 children from 50 schools in Vaishali and Patna received additional content in the form of digital games.

While thousands of participating students were at the heart of the project, over 700 teachers, and other government stakeholders such as members of the Block Resource Centres (BRC) and District Offices were also engaged, as their buy-in was essential to the success of the project.

The project began in October 2012, and ended in March 2015 with downtime from April to July 2014, due to summer holidays.

Learn to Read, Read to Learn

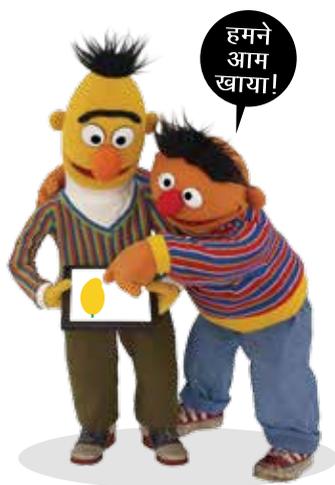
700
Teachers



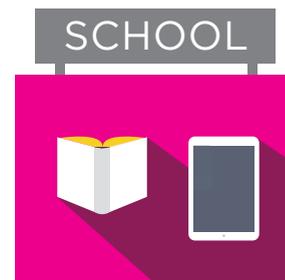
30,000
Children



NUMBER OF SCHOOLS IN INTERVENTION



BASIC



BASIC + DIGITAL

PHASE 1

PATNA
BHOJPUR
VAISHALI

175

100

75

NA*

NA*

25

PHASE 2

PATNA
BHOJPUR
VAISHALI

150

100

100

25

NA*

NA*

* Not Applicable

BASIC ●

BASIC + DIGITAL ●

HOW?

The needs assessment and the formative research conducted in February 2013 provided key insights that helped us design the content and the project implementation plans. We learnt that:

- **Hindi was the preferred language for both learning and teaching**
- **The chalk and board method was the standard teaching practice**
- **There was a lack of learning materials and visual displays in classrooms**
- **There were multi-grade classrooms with a high student-teacher ratio**
- **In some schools there was only one teacher for Grades 1 to 5**
- **Children as old as 10 and 11 were enrolled and studying in Grade 2**
- **Children had good listening comprehension skills, but struggled with letter identification, word reading and comprehension**

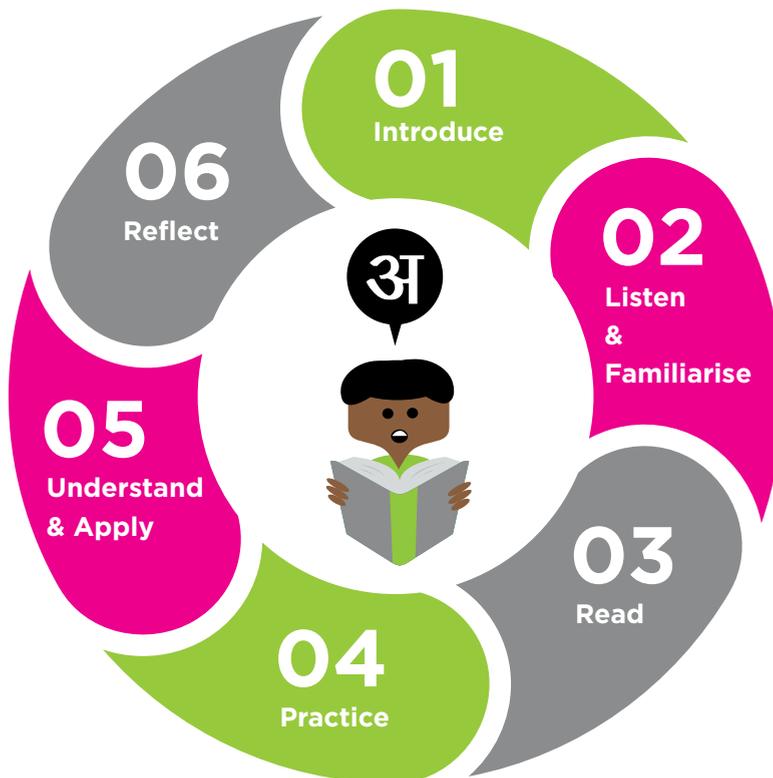
These insights helped us shape our methodology and content.

CONTENT DEVELOPMENT

The needs assessment indicated that practice of newly learnt concepts and skills was an imperative. We developed a reading cycle approach based on research, to reinforce concepts and help children practise their skills. The approach helped children build their skills and develop progressively more complex ones.

Each reading cycle was pegged to a core storybook and worksheets, and was supported by engaging learning aides such as the story pond floor game, phonic phones, and read along recordings.

The curriculum was divided into three modules and each module was pegged to a 12 week learning cycle.



TEACHER TRAINING

Getting buy-in from the teachers, building their capacity to use the materials in classrooms and keeping them motivated was a big challenge. We soon realized that our initial train the trainer model would not be effective in helping us achieve the impact we wanted. We changed gears to directly train over 700 teachers in three phases. We also handheld them through the project period. The research shows that the teachers felt appreciated, learnt how to work with GGSS materials, and improved their knowledge about quality in education.



IMPLEMENTATION

Sesame Workshop India supported the on-ground implementation by developing a strong monitoring and evaluation framework that was led by the Field Coordinators and Project Associates placed in each district. The team visited the participating schools on a regular basis and used a monitoring checklist to collect data on the project. The data was analyzed frequently and helped in making course corrections as required. Specifically:

- **In the initial phase, we found that while**
more than 80% of teachers were using **GGSS materials,**
less than 20% were actually following **the schedule of activities.**
- **In the second round of training we reinforced the schedule of activities and found that**
more than 50% of teachers had started **following it.**
- During our initial visits, we found that most teachers resisted the idea of handing the workbooks over to the children, fearing that they might get lost or torn. However, after constant counseling and discussions with the teachers, we saw that more than 70% of the schools visited had distributed the workbooks, and the children were using them.
- The team was responsible for conducting the digital game sessions in the 50 schools in Vaishali and Patna.





IMPACT

We commissioned i-land Informatics Limited to evaluate the project.² The study in Bihar measured the impact of the GGSS intervention using a quasi-experimental study that featured two treatment groups, basic and digital, and a matched control group. Baseline and endline data was collected for each phase. The study was split in two phases—pre and post the summer break to account for the holiday effect.

PHASE 1

Baseline **OCTOBER**
2013

Endline **MAY**
2014

2. Learn to Read, Read to Learn - Final Report, i-land Informatics Limited, May 2015



We adapted EGRA in Hindi to measure children's reading comprehension and fluency scores through a longitudinal study.

Qualitative assessment of the digital intervention was through in-depth interviews with teachers who were part of the intervention, observation of the digital sessions (GGSS games on tablet) and focus group discussions with children who participated in the digital sessions. These were conducted in both Patna and Vaishali schools prior to and after the digital intervention. ³



Daisy Rani, a student of Grade 2 loves reading *Galli Galli Sim Sim* story books. Whether it's *Googly Chala School*, or *Chamki*, *Googly Ne Khana Khaya*, Daisy is sure to read the books before school starts.

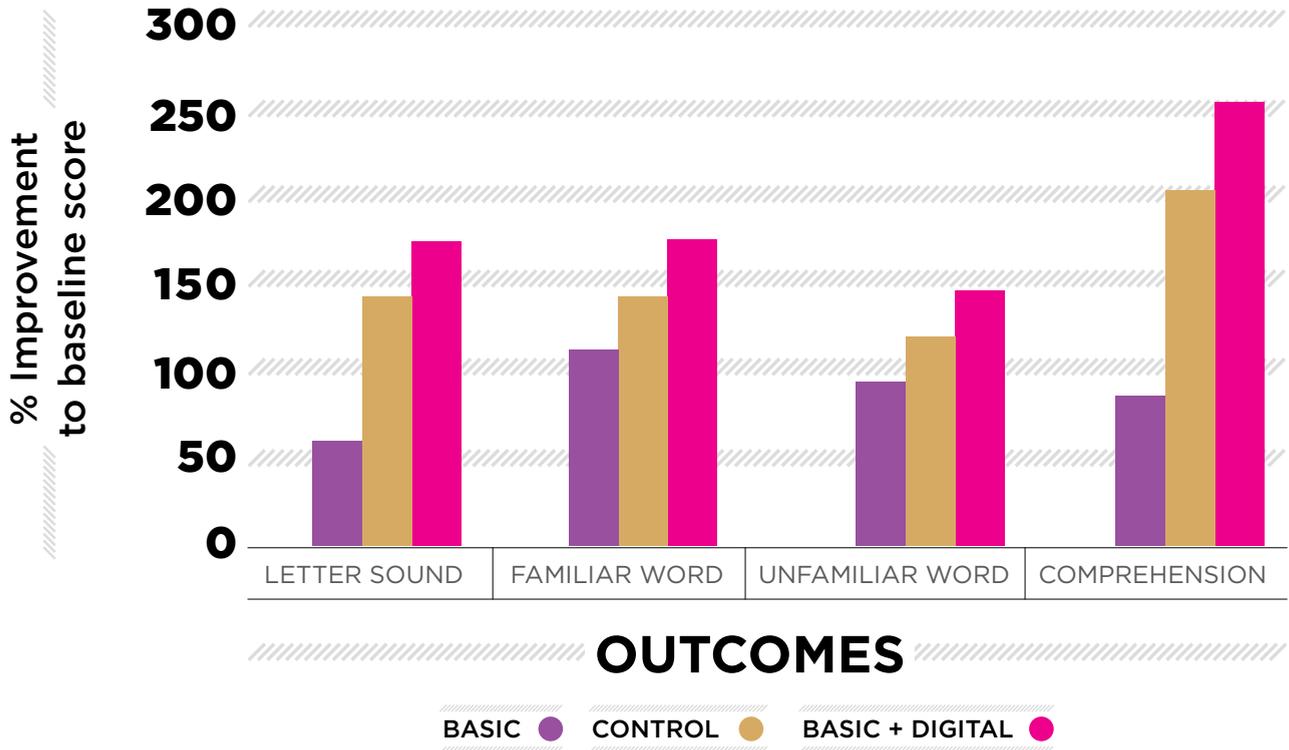


3. Qualitative Assessment of Digital Intervention on Primary Hindi Skills –New Concept Information Systems –Comparison report (Delhi, Vaishali and Patna) May 2015

In **Phase I**, using the percentage impact for each group (improvement as a percentage of baseline score), we saw that for the digital group, the percentage impact was higher than that for the control group on all four measures (letter sound relationship, familiar word reading, unfamiliar word reading and reading comprehension) in **Grade 1**. This was not the case with the basic intervention as is evident from the graph below:

PHASE 1

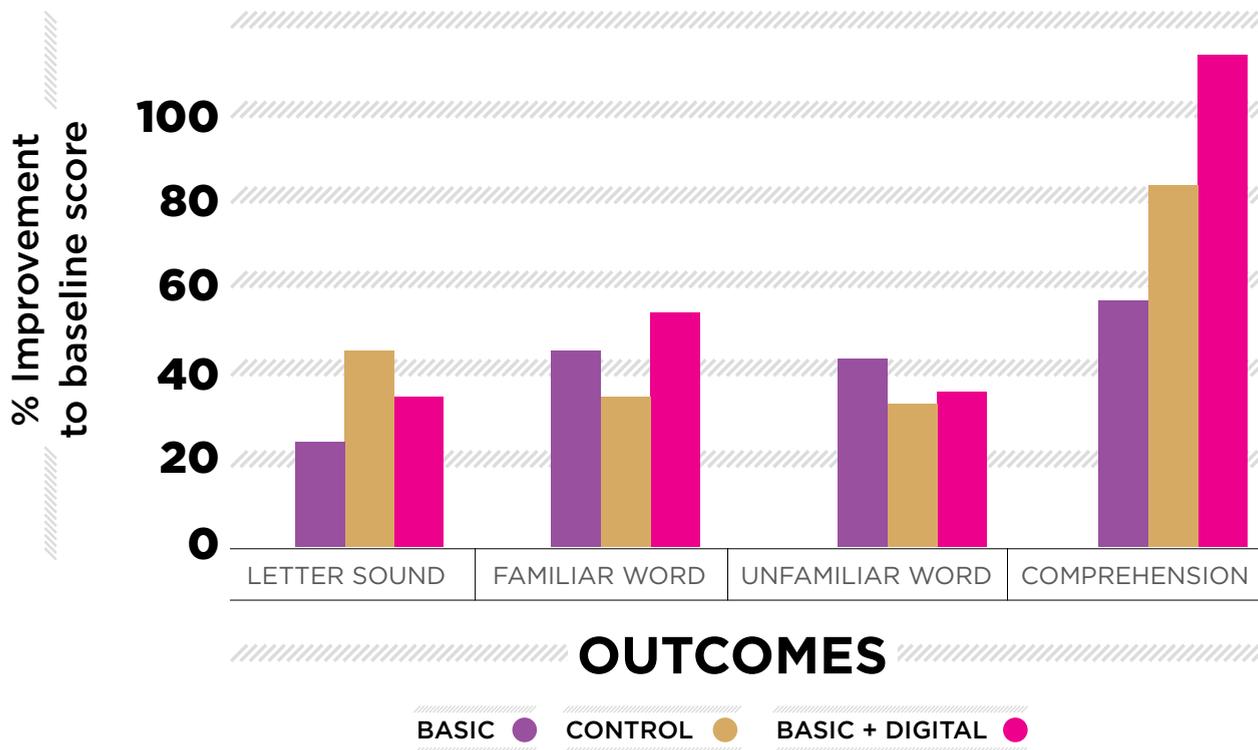
GRADE 1: PERCENT LONGITUDINAL IMPACT



Grade 2 students who received the digital intervention scored positively in three out of four measures (familiar word reading, unfamiliar word reading and reading comprehension) when compared to the control group. For the basic intervention, **Grade 2** students who received GGSS materials demonstrated a higher percentage improvement as compared to the control group for the following subtests: familiar word reading and unfamiliar word reading.

PHASE 1

GRADE 2: PERCENT LONGITUDINAL IMPACT



Our analysis revealed that the control group was not matched appropriately with the treatment group, thus skewing the data. Therefore, for Phase II a new control group was selected and matched more closely to the treatment groups. The Phase II study was conducted only with children from Grade 2.

For Phase II, the children's scores at baseline were significantly higher for the two treatment groups with respect to the control group for almost all indicators. This could be attributed to the fact that the "basic" and "digital" schools had been a part of the intervention for four months already, during Phase I of the study, while the control group had not received any such intervention beforehand. Additionally, imperfect randomization of observations in the three groups and/or differences in evaluative procedures between the groups could also have resulted in this difference.

Children who received the digital intervention showed improvement in **3 out of the 5 indicators***

They showed significant improvement in initial sound identification, oral reading fluency and listening comprehension.

For the other five indicators (phonemic awareness, familiar word reading, unfamiliar word reading, reading comprehension and letter sound identification) no treatment effects were found.

QUALITATIVE RESEARCH

Additionally, findings from qualitative studies in both Patna and Vaishali indicated that with time children with no prior experience in using a tablet showed:



An increased level of proficiency for switching the tablet on and off



Responding to directions in the game and progressing in the game



Willingness to share the tablet with each other and to take turns

Peer support played a huge role at the start of the project as initially it was observed that children were helping each other progress in the games. As they got more familiar with the games, they needed less support from teachers and peers.







CHALLENGES AND SOLUTIONS

LRRL, worked well, but we encountered numerous challenges along the way. These served as useful insights as we fine-tuned the intervention. They also helped us to identify and mitigate risks for the subsequent ACR II project.



ACCEPTANCE AND PERMISSIONS

Since LRRL was a school-based program, it was important that SWI come to an understanding with the government and school bureaucracy at every level. This necessitated months of negotiation, information sessions, and building trust. We had to prove that the program would add value to the students' experiences, enhance their learning, and benefit their teachers. Negotiating with the state government took time, **but we gained valuable knowledge and were pleased to forge a new partnership.**

INFRASTRUCTURE

Lack of transportation, electricity, overcrowded classrooms and other infrastructure issues are perennial problems in rural India and LRRL had to contend with these, especially in the areas where we included digital content that required electricity or battery power. **We had to provide charging stations and work out mechanisms that would enable the team to conduct the activities.**

TEACHER AND FAMILY/COMMUNITY SUPPORT

Based on our interactions we learned that while there are some talented, committed teachers, many are not appropriately qualified, and are unable to give the children the quality of education they need and deserve. In addition, in many families, children were first generation school-goers and parents were unable to support their learning. Too often children had to struggle on their own in a situation where they needed guidance and encouragement. **We learned that supporting a child's caregiver is a crucial component in furthering their education.**

TEACHER PRIORITIES

The Government of Bihar's Department of Primary Education was conducting training for primary school teachers at the same time our teacher trainings were scheduled. In addition, teachers and district administrators were required to complete certain activities before the end of the calendar year. Attending

our training was not a priority for them, and this led to delays. Further, the timing of the intervention varied across the three districts as well as at the block level. This impacted the second round of refresher training, as well as overall timelines. **Unplanned holidays, exam schedules and election duties also limited opportunities for exposure to GGSS materials.**

IMPLEMENTING THE READING CYCLE

In Phase I students who received the digital intervention showed higher improvements in task scores than students who received the basic intervention. This may be because of better implementation of the digital intervention by the SWI field coordinators. The teachers in the respective schools taught the “basic” material. It is possible that the teachers’ implementation of the intervention varied, and this may have led to lower impact both in absolute and relative terms. Additionally, in the first two months of the intervention teachers did not use the materials with fidelity, but their implementation improved over time. Many teachers found the reading cycle challenging to implement. This possibly indicates a need for more sustained professional development.

Every challenge was an opportunity for us to become more familiar with the students’ environment, with all its strengths and limitations and learn how to take the next steps. We now know that:

- **Content should be designed and presented **level by level** so that every child is engaged and can progress at his or her own pace**
- **Additional practice material is **crucial****
- **Family and community engagement is **vital****

Learn to Read, Read to Learn



RESEARCH LEARNINGS

Selection of a control group

We learned that we must consider many factors when selecting a control group. Initially, we only used demographic data to match the control group to the treatment group. We found that the infrastructure of the school building and the resources available to students also play a role in student outcomes. In Phase II, we were careful to use several criteria to match our treatment and control groups. This helped us capture the impact of the GGSS interventions, more accurately.

Limited information from school registers regarding students and their parents

Apart from the students' assessment, the study team also wanted to collect basic information regarding the socio-economic status of families. However, there was limited information available in school registers. The livelihoods of the parents were described in broad categories such as "daily laborer" and all women were referred as "housewife" even in cases where children reported that the mother was working. Hence, with minimal information about either the parent's socio-economic status or education levels, we were unable to control for and understand the effects of these variables on the children's performance.

Unavailability of report cards

Schools had not been provided with the required format for report cards and student report cards were not available with the schools. Also, because children's profiles and achievement data were not compulsory for the schools to maintain, this data could not be collected.

Sample size

Twenty percent of the children tested in baseline were not available during endline, leading to attrition. Children were found to have gone on holidays on account of functions at their native village and a few children had dropped out of school.

Lack of proper space

In a few schools, there was no space to carry out the assessment. In general, shortage of space and the commotion created by older children interfered with the assessment.

Tablet

Children tended to be distracted by the tablets and focused more on the device than the task at hand. After being told that their reading skills were being assessed, they focused on the assessment.





CONCLUSION

We are pleased to report that the LRRL project was successful in positively impacting children's reading ability and comprehension skills. Despite the multiple on-ground challenges, the potential for the LRRL project to scale-up is enormous. We saw that with fun and activity based learning materials, and use of digital based tools it is possible to improve reading level indicators in children.

We also found that the LRRL project made an impact over and beyond child level outcomes, such as:

- **Education authorities experienced the advantages of working with an outside agency for students' benefit**
- **Teachers were exposed to new pedagogies and classroom techniques**
- **Children experienced different technologies, sometimes for the first time, and gained comfort in both print and digital media**

- **Teachers, students and observers all reported that the project and the materials improved classroom interaction and the quality of the student-teacher relationship**
- **Both students and teachers had the novel experience of having access to a diversity of audio, print and digital materials**

We look forward to taking our experience and learning to the next phase of All Children Reading.



ACKNOWLEDGMENTS

The **Learn to Read, Read to Learn** project has been made possible by generous support from All Children Reading, Grand Challenge for Development (USAID, World Vision, and the Australian Government). We also thank the **team at World Vision in India (Bihar)** for their continued support in planning the intervention. Permissions, approval, support and partnership with the Department of Primary Education, Bihar have been critical for the project.

The project would not have been successful without the wonderful enthusiasm and participation of the **principals and teachers in the 375 schools, members of block and community resource centers in Patna, Vaishali and Bhojpur**. Support from district and block administration was crucial in ensuring that GGSS content is integrated in the class curriculum.

Mr. Navneet Bedar, our Hindi language expert, provided expertise and inputs in adapting the EGRA tool.

Dr. Sujoy Chakravarty provided valuable oversight and inputs on the research analysis and reporting.

We also thank **Qualcomm's Wireless Reach™** for extending support to undertake research on the digital intervention in Bihar.

A very special thanks to **Sohaila Abdulali** for her efforts in putting the report together and making it come alive.



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