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Rukmini Banerji & Madhav Chavan

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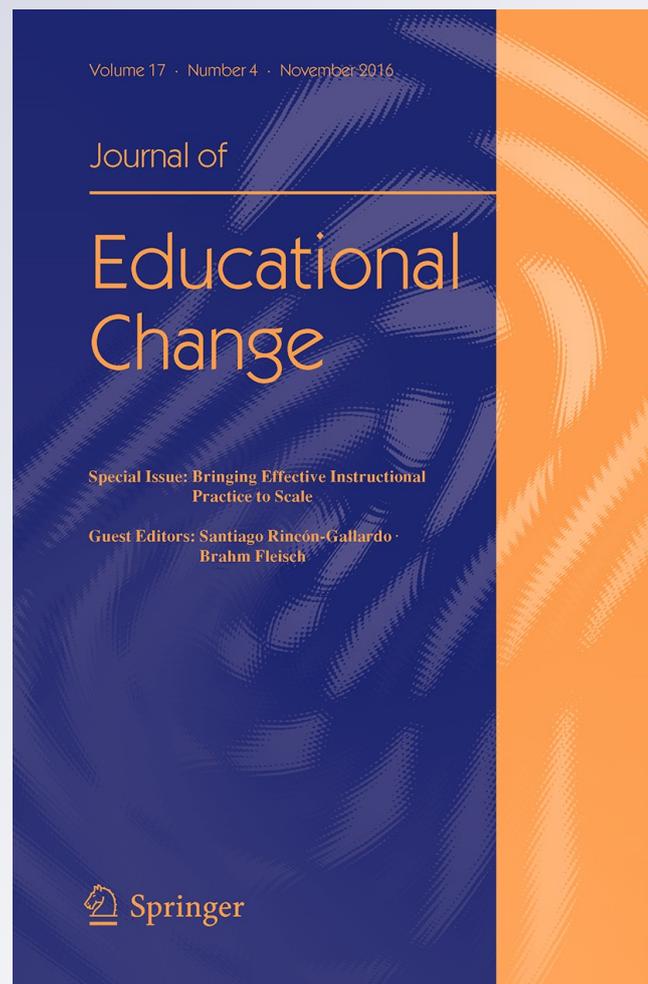
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Improving literacy and math instruction at scale in India's primary schools: The case of Pratham's Read India program

Rukmini Banerji¹  · Madhav Chavan¹

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Abstract Pratham's "Read India" initiative is a large-scale intervention to improve basic learning and arithmetic among children in primary school. It was started almost 10 years ago and has evolved considerably over time. Currently, this initiative uses two strategies. The first strategy is to work directly with village communities and local schools to improve children's learning. "Learning camps" are organized in the local school or community for a period of 6–10 days at a time. Local village volunteers help to teach children who are organized in groups by their level of learning. These camps—intensive bursts of focused instruction—are repeated several times during the year. This model which has been rigorously evaluated shows that children's learning levels improve significantly. The second strategy is to work with the government. This approach is used when school systems want to partner or collaborate with Pratham for improving basic learning. The key element here too is grouping children and teaching them from their level rather than by their grade. This approach also shows promising results. Independent evaluations and randomized control trials conducted on both models have indicated significant impact. Moving between the present set of conditions in India and past lessons, this case describes a decade-long journey of efforts to change teaching and learning at the ground level as well the efforts to bring about significant shifts in priority at the system level. The "Read India" case presented here contributes knowledge on strategies under which effective pedagogy can be brought to scale. It also discusses challenges of transforming instructional change in a context of low initial capacity at the school and system levels, where attention to rapid expansion of access to school had kept aside for a long time critical questions about teaching quality and learning outcomes. A second contribution of "Read India" to current knowledge on large-scale educational change relates to the role non-government actors such as

✉ Rukmini Banerji
rukmini.banerji@pratham.org

¹ Pratham Education Foundation, New Delhi, India

Pratham can play in bringing effective pedagogy to scale to improve student learning.

Keywords Literacy · Numeracy · India · Large scale instructional improvement

Introduction

Pratham's "Read India" initiative is a large-scale intervention to improve basic literacy and arithmetic among primary school children in India. The program started almost 10 years ago and has evolved considerably over time. Currently, this initiative uses two strategies. The first is to work directly with village communities and local schools to improve children's learning. "Learning camps" are organized in the local school or community for a period of 6–10 consecutive days. Local volunteers help to teach groups of children organized by their level of learning. These camps—intensive bursts of focused instruction—are repeated several times during the year. This model, which has been rigorously evaluated, shows that children's learning levels improve significantly. The second strategy is to work in partnership with the government. It also involves grouping students teaching them based on their level of proficiency rather than their grade. This approach also shows promising results. Independent evaluations and randomized control trials conducted on both models have indicated significant impact on student learning.

Moving from the learnings of the past to the present set of conditions in India, this article describes a decade-long journey of efforts to change teaching and learning at the ground level as well the efforts to bring about significant shifts in priority at the education system level in India. The "Read India" case presented here contributes knowledge on strategies under which effective pedagogy can be brought to scale. It also discusses challenges of transforming instruction in a context of low initial capacity at the school and system levels, where attention to rapid expansion of access to school had kept aside for a long time critical questions about teaching quality and learning outcomes. A second contribution of "Read India" to current knowledge on educational change relates to the role non-government actors such as Pratham can play in bringing effective pedagogy to scale to improve student learning.

Section 1: Overview of the educational landscape in India and evolution of Pratham

Thanks to years of investment in education by successive governments, provision of schools and access to elementary school is very high in India today. The late 1980s and early 1990s saw a variety of initiatives for children's education and adult literacy. Concerted efforts like the District Primary Education Program (DPEP) were started in the mid-1990s by the central government to expand access and increase school enrolment. Innovative community based projects like Shiksha Karmi, Lok Jumbhish and Mahila Samakhya also emerged that aimed at building

societal support and commitment for education. Growing out of the experiences of DPEP, Sarva Shiksha Abhiyan (which literally means education for all) was launched in 2001 to cover all districts and states of the country to ensure universal enrolment and retention and to reduce all gender and social gaps in schooling. Education cess, a special tax, was also introduced in 2004. Overall, governments at the centre and in the states saw the provision of education as a high priority with clear quantitative targets in provision that had to be achieved.

Even in the last decade there has been impressive growth in elementary education in India. Total enrolment for students in grades I to VIII increased from about 168 million in 2005–2006 to approximately 197 million in 2014–2015 (DISE 2014–2015). In the last 10 years, the number of schools went up from 1.12 to 1.44 million in the same period and the number of teachers rose from 4.7 to 7.9 million. Currently, school enrolment for the elementary school age group is above 95% (ASER 2014; Banerji and Chavan 2013).

As school enrolment in India moved towards universalization, attention began to move towards issues of quality. A substantive and significant re-envisioning of the national curriculum framework was undertaken in 2005, followed by revisions of textbooks and the formulation of the national curriculum framework for teachers in 2009. But by 2005, with the release of the first nationally representative Annual Status of Education Report (ASER), the spotlight was on children's learning. Since then, growing evidence from different sources, including the ASER reports, the government's periodic national achievement surveys and independent studies, pointed to the fact that the quality of education and the issue of children's learning needs urgent attention. (ASER reports 2005–2014, NAS/NCERT 2006–2015, Educational Initiatives 2006–2014, Young Lives 2014). Often quoted figures from ASER indicate that even after 5 years in school, only half of all children in fifth grade in India can read simple text meant for second grade children. The situation with arithmetic is even worse.

Apart from the reality of low learning levels, two additional empirical facts added to the worries about children's education in India. First, available data over time, especially since 2010, suggest that learning levels are declining (ASER 2010, ASER 2014). For example, the percentage of children able to read simple texts in Grade V in 2010 was 53.7%, but the figure in 2014 was 48.1%. The decline in basic arithmetic is even more worrying. In 2010, 70.9% of children in Grade V could correctly solve a 2-digit subtraction problem (with borrowing). In 2014, the figure was 50.5%.

Declining learning levels are also visible in several of the sources cited above. This suggests that despite rising expenditures, fewer children today are achieving basic reading and arithmetic levels compared to their counterparts in the same grade a few years ago. There is also evidence that learning trajectories of a cohort going through the school system look quite flat, suggesting that if children do not learn basic skills at the right time, they are unlikely to gain these skills later (Pritchett and Beatty 2012).

What about the scale of the problem? Based on Census 2011 data, there are about 25 million children in each age category in India. Using the figures reported in ASER, rough calculations suggest that more than 50 million children in Grades 3–5

need immediate and urgent help if they are to have a real chance to meaningfully complete elementary school. These children not only need to pick up foundational literacy skills, number knowledge and basic operations quickly but they also need to be helped to reach the level expected of their grade in order to move ahead. To reap the benefits of universal enrolment, it is imperative that effective instructional strategies are designed and implemented at scale that enable children to make progress in the school system.

The widespread realization of the need to improve the quality of elementary education in India has led to many different kinds of initiatives in the last decade or more, such as Activity Based Learning (ABL) pioneered by the government, and initiatives of the Azim Premji group (including the Learning Guarantee Program, and the Azim Premji University), started outside the government. It is in this broader, emerging context that Pratham's work and the evolution of the Read India initiative is located.

From its inception in 1994 to the present, Pratham's overall mission has been "every child in school and learning well". The first major initiative undertaken by Pratham in its hometown, Mumbai, was the development of a vast network of community based, locally run pre-school centres in the slums across the city. Given the huge migration into the city, many young families needed support to get their children into the mainstream system. Pratham pre-schools were a preparatory step; the "balwadi" (pre-school) served as an anchor in the community to young children and young mothers and also a link to the local school once children were old enough to enter Grade 1. The growth of Pratham's community work was rapid; in 1996 Pratham ran 150 pre-school centres but by 1998, this number had risen to 3000.

From this large-scale community work across Mumbai came other demands from families related to their children's education, including attending children who had been "left out" and were not attending school, serving kids "left behind" who were in school but lagging behind academically. At the time, among families as well as within school systems, the common assumption was that once a child went to school, the child would learn. But Pratham's experiences from schools and communities, especially in low income areas, indicated that learning did not automatically result from going to school and that the problem of ensuring learning needed direct action.

There have been four distinct stages of Pratham's growth since its birth. In its early years, it was largely a community-based service delivery organization providing direct educational services to disadvantaged communities and government schools. In fact, the origin of today's "Read India" method of delivery and pedagogy can be found in the early remedial learning work done by Pratham in Mumbai (Banerjee et al. 2007).

The second stage of Pratham's development can be characterized by innovation and experimentation. Despite gains in learning, there was a growing frustration in Pratham about the pace of progress with children. This led to further experimentation about how to accelerate learning especially for children who were already in Grade 3 or above. By 2003, Pratham had developed a "learning to read" technique that even relatively less educated community volunteers could use to teach children to read in about 6–8 weeks with an effort of about 2 h daily. This phase also

produced a simple testing tool that became instrumental in launching the now well-known Annual Status of Education Report (ASER).

The third stage was Pratham's entry into the policy and reform arena. In 2005, Pratham facilitated the development of the country-wide Annual Status of Education Report (ASER 2005–2014). This household survey reaches between 600,000 and 700,000 children every year across rural India and provides district and state level estimates of proficiency in basic reading and arithmetic. Over the last 10 years, through ASER and Read India—Pratham's flagship instructional program—the organization has been attempting to impact learning levels of children as well as government policy and practice in India. For the past few years, Pratham's direct instructional work reaches close to a million children annually across 20 states. In the last 2 years, working directly via government partnerships, Pratham's work has impacted an additional 6 million children a year.

Looking forward, the fourth stage can be envisaged as one of spread—the challenge continues to be how to convince others to work effectively in helping children learn.

The central belief of the “Read India” effort is that every child can learn. Pratham is convinced that for the school system and for society to focus on learning for all, major shifts are needed in Indian elementary education. If this goal is to be achieved, then teaching–learning methods and strategies need to be developed that can be used at scale to enable millions of children to acquire the basic building blocks that serve as the foundation for learning. There are many educational initiatives in India—those that focus on better teaching and pedagogical innovations, on performance incentives and school governance, school leadership, on educational technology and on parent participation and so on. But Pratham is perhaps the largest non-government effort entirely focussed on how to improve learning, both at the basic level and beyond.

This article lays out the strategies that have been used by Pratham in the Read India initiative. It delves into micro level activities as well as macro level trends. The next section focusses in some detail on the elements of Pratham's teaching–learning method and highlights departures from current and prevalent pedagogical practices. The following section outlines the different implementation paths that Pratham has taken to demonstrate and spread its effective ideas for improving learning. The final section lays out the lessons and learnings from the decade-long Read India initiative and discusses the prospects for the future for improvements in instructional practice and system change to enhance children's learning in India.

A glimpse into Pratham's teaching–learning approach

Like in many parts of the world, schools in India are essentially organized by age and grade. The compulsory education law applies to age groups six to fourteen. The law assumes that children enter Grade 1 at age six, that they move into subsequent grades each year and finish Grade 8 at age fourteen. Curriculum expectations for each grade get progressively higher; these expectations form the basis for grade-specific textbooks. India has a no-retention policy which means that children can

move into the next grade whether or not they have met the curriculum standards laid down for the previous grade. Further, there is no formal examination for students before secondary school.

Many of these assumptions are quite different from actual realities. For example, although the compulsory education law states that children enter school at age 6, in actuality large numbers of much younger children are already enrolled in Grade 1 (ASER 2014). The school system, especially curriculum expectations, is structured for each grade level. However, a large proportion of classes in India have two or more grades sitting together making teaching quite a challenge. Additionally, all available evidence points to the fact that in each grade students are not only well below grade level but they may be several grade levels behind (Bhattacharjea et al. 2011).

In a typical India classroom, the class is usually organized with children sitting in rows facing the teacher. Much of the interaction is dominated by the teacher using a standard chalk-and-talk mode of delivery while the children listen passively. Content and pace of the grade level textbook are the main drivers of classroom activities. There have been relatively few studies in India that have looked at classroom instruction in detail. But the studies that exist provide evidence of such practices to be widespread. (Jhingran 2012; Wadhwa et al. 2016; Bhattacharjea et al. 2011).

Pratham's "Read India" program is designed to deal with the issue of low learning in primary school. Pratham has a variety of programs catering to different age groups, but the main focus of its large scale work in the last 10 years has been on children aged seven and above who are likely to be in Grades III–V. By this age, school going children have had substantial exposure to a school environment. Prior experience with this age group indicates that children can acquire foundational skills quickly.

Regardless of whether Pratham teams use Pratham method directly with children or whether government teachers implement it, the core aspects are the same.

Pratham works with children in several ways: directly through its own team members, via community volunteers, and through government school teachers. Guiding the entire process are the goals. Clear goals are articulated as the work begins. Goals are stated in a straightforward, simple language way that parents and teachers can understand easily. The goal of the work is to enable children to read fluently with understanding, to know numbers and to be able to do basic arithmetic operations. Completing the curriculum is not the objective.

First, regardless of age or grade, the starting point is assessment. A basic assessment tool is used one-on-one with each child. Second, for instruction, children are grouped by level rather than grade. Third, specific time is allocated for this activity. Fourth, Pratham's experience suggests that combining a variety of activities is essential for maximizing learning. Every day, there are three or four activities in an hour span or so. Some of these activities are similar for all groups; others are tailored to the level of the group. Fifth, Pratham's teaching–learning methods are easy to demonstrate and to do. For large scale participation of people as volunteer-instructors or for regular school teachers, too much fine print can be a deterrent. Sixth, the entire effort has evolved keeping scalability in mind. Whether it

is manpower or materials, Pratham uses resources already available, frugally used, and deployed as effectively as possible. Finally, simple measurement is used to track progress of individuals and groups towards the goals and to guide corrections throughout the process.

Each of these elements is a departure from the usual practice in Indian schools and classrooms. Brought together, these elements form the core of the Read India teaching–learning approach which is particularly effective in enabling children develop the foundational skills which in turn make them ready to take on the challenges of the next steps in the education system.

In the initial assessment stage, each child, individually, is asked to read. There are four tasks: recognizing letters, reading everyday simple words, reading a short four-line paragraph and a longer eight- to ten-sentence story. The child is marked at the highest level she can comfortably reach. The assessment tool and process are very simple and easy to administer.

Before beginning to work with a group of children, the instructor (a local volunteer or a qualified teacher) sits with each child alone for a few minutes and urges the child to read. The one-on-one interaction between the teacher and children is a critical step. Children love this time alone with the instructor. For crowded classrooms and big families, having time alone with an adult is very special for the child. For the instructor as well, this time is important for getting to know each and every child. Once the instructor has heard every child read or try to read, she is aware of who is stumbling at which stage and why.

For parents, especially those who are not literate, the tool provides a visual guide to where their children need to reach. For everyone, the highest level in the tool—“story” for reading and a two-digit numerical subtraction problem with borrowing for arithmetic—is the goal to chase. One-on-one assessments of this sort, especially of reading or number knowledge, are rarely used in conventional classrooms. In a typical school, the teacher usually begins the year with the first chapter of the prescribed grade level textbook.

The first assessment counts as baseline. A similar but comparable tool can be used by the instructor for mid-line and end line as well. Thus the assessment tool is used to start work, communicate goals and track progress (Fig. 1).

An essential shift in mind-set is needed in Indian elementary education—how to be responsible for *all* students, rather than simply those who are at grade level. To begin the process of teaching–learning, especially for those who are far behind, it is important to move away from grade level curriculum expectations. Within the current Indian context, a move away from textbooks is a huge departure from the normal mode of functioning but such a shift is needed to bring in all children rather than only the 15–20% who are top of the class. The basic methods and materials for teaching and learning used in Read India are described below.

Focus on foundational skills

“Read India” focusses mainly on reading (and other basic language related skills) and on arithmetic. Without these foundational building blocks, it is difficult for any child to move ahead in the school system or indeed in life. Regardless of the

READING TOOL: HINDI



Std II level text

THIS ASSESSMENT TOOL IS USED IN ASER (ANNUAL STATUS OF EDUCATION) EACH YEAR

राजू नाम का एक लड़का था। उसकी एक बड़ी बहन व एक छोटा भाई था। उसका भाई गाँव के पास के विद्यालय में पढ़ने जाता। वह खूब मेहनत करता था। उसकी बहन बहुत अच्छी खिलाड़ी थी। उसे लंबी दौड़ लगाना अच्छा लगता था। वे तीनों रोज़ साथ-साथ मौज-मस्ती करते थे।

Std I level text

रानी नदी किनारे रहती है।
नदी में बहुत मछलियाँ हैं।
रानी उनको दाना देती है।
वे सब मजे से दाना खाती हैं।

Letters

म र ड
ह च
ल ब न
क य

Words

गाना खुश
मौसी
पैर झोला
किला
आग मोर

For Letters/Words: Ask the child to read any 5, out of which 4 must be correct.

Reading tools available in all languages.
contact: www.asercentre.org, Phone: 011- 26716084,
email: contact@asercentre.org

Fig. 1 Read India's reading assessment tool

program, rural or urban, in-school or in the community, camps or daily classes, children and instructors get together for 2–3 h a day. This time is divided evenly between reading/language and arithmetic. A specific time slot is made available to work on children's foundational skills.

Grouping by level

As soon as the assessment is done, the information is translated immediately into action: children are grouped by level for instruction. The number of groups depends on the availability of instructors/teachers. Ideally, if five instructors are available, then each group will have an instructor. But it is rarely the case that a school will have more than three teachers for three grades. So looking at relative numbers of children in different groups, kids are clubbed together to match with the number of available instructors/teachers.

Combined activities for maximized learning

It is well known that children learn in many ways. Hence activities need to be designed that stimulate different modes of learning. In "Read India", children do a set of different activities simultaneously—listening, saying, doing, reading and writing—all around one task or problem. One young Pratham instructor once

vividly described the process. “It feels like I have thrown many balls in the air and children catch what they can”. Internally within Pratham, this approach is called CAMaL—Combined Activities for Maximized Learning; but the Hindi word also means “magic” or “wonder”. This approach is also sometimes referred to as “teaching-at-the-right-level”.

What actually happens in “Read India” during reading time? In a period of about an hour to an hour and a half, a combination of activities are carried out—reading aloud, discussions, phonetic games, vocabulary exercises and writing. Experts who have analysed Pratham’s work in reading describe it a “balanced” or “mixed” approach that uses elements of both whole language and phonetic methods (Jallaluddin 2004, Personal Communication; Abdazi 2014). Common activities for all groups include hearing stories that are read aloud and then discussing them. Phonetic activities and word games are played keeping in mind the level of the group, considering both what they can do comfortably and what is challenging for them. Mind mapping activities are also done to grow vocabulary and to organizing thinking thematically or around concepts. Finally, children write every day; the focus is on putting down their own thoughts in paper rather than on grammar or spelling.

Reading aloud

India has a deep oral culture. However, reading aloud to children is not common either at home or in school. Parents of many school going children have low levels of formal schooling. And often there is not much to read at home. ASER figures suggest that close to half of all mothers of school going children today have not been to school at all or had very few years of formal education. Less than 20% of rural households have any reading material at home. In the process of learning to read, the modelling of reading is critical. Children begin to understand what reading entails when they can see live demonstrations of reading.

Modernized phonetic chart

An important piece of the “Read India” package is the “barakhadi” chart. This is a traditional phonetic chart—a grid with consonant sounds as rows and vowels as columns. Each cell is a predictable combination of consonant and vowel sounds. At first, the chart is used to familiarize children with the sound-symbol links. Each row follows a predictable pattern. If you go down a column then you can see and say the same vowel sound but attached to different consonants. When you are more advanced you can find components of almost any word you can think of. Children use this chart mechanically at first. But then they use it like a scaffold to find words. At a more advanced level, the chart can be used almost like a puzzle game. The chart is a familiar traditional teaching aid—parents or even grandparents know it. But its use in “Read India” has a new dimension. With different use patterns, the old becomes new. This could be called “modernizing the traditional”.

Group work

The Indian education system rewards individual excellence. Children usually work on their own and look for the teacher's approval of their personal work. In "Read India" children are encouraged to work in groups. Sometimes, the big group does an activity together and later breaks into smaller groups to carry on the activity. Grouping and re-grouping keeps momentum and enables children to learn from one another and spend much more "time on task" than is possible in a typical classroom.

Another aspect of grouping has to do with the dynamic nature of the process. As children make progress, they move into the next group. Although at baseline children may be spread over several levels, by the end of this phase of the program all are more or less at the same level. This makes the journey ahead easier. Usually, children get motivated with their own, visible progress and are eager to take on bigger challenges. Making children confident learners is an integral part of the Read India process.

Discussion and expression

Rote learning is a common practice at all levels of the school system in India. Practices such as copying from the blackboard, repeating after the teacher, looking for answers only in the material (textbook) that is given, are very common. It is not uncommon for parents and teachers to believe that students' performance in written examinations, rather than independent thinking, is the only benchmark of achievement. But if the goal of education is to help children become independent learners, then getting children, early in their school lives, to have confidence in their own ability to think and express their own opinions is essential.

In the "Read India" intervention, any story or text used for reading is discussed. Even if a child's ability to read is yet to develop, the child can still participate fully (if encouraged) in discussions about what has been read aloud. Discussions enable children to connect what they know to what they have heard or read, ask questions, think of answers, disagree with one another, form opinions and expand their way of thinking. In a typical Indian classroom setting, both children and teachers are used to a one-way didactic mode of interaction with fact based questioning. One of the challenges in the Pratham approach is to learn how to carry on a discussion in a group so that there is participation and depth; this is a skill that the adults and children have to develop together.

Reading material

Close to 80% of rural children do not have anything at home to read other than their school textbooks (ASER 2014). To encourage reading, it is necessary to expose children to a variety of reading material other than textbooks. For the "Read India" campaign, Pratham has developed special supplementary reading materials. Each child is given a small booklet of simple stories based on familiar contexts that the child can relate to. Most children do not have books they can call their own, so they

love getting a book all for themselves. Providing material within the reach of the child also raises the child's sense of ownership of their reading.

Similar activities are also carried out for arithmetic. There are counting games with straws and rubber bands to help build number knowledge—where children count aloud as they pick up straws, find the number on a chart and then write it down. Activities with base ten (straws and rubber bands) are done daily to strengthen concepts of place value. Operations are done with actual objects and with symbols until the logic of how objects and numbers are added or subtracted is clear to the child. Everyday problems are discussed and then solved. For multiplication and division, children use play money/currency notes. By using actual and familiar objects, more abstract concepts can be grasped and internalized by children more easily.

In a nutshell, the key elements of the “Read India” teaching–learning methodology include clearly articulated achievable goals, focussed time for helping children “catch up”, grouping children by level, group work, appropriate methods and materials for each level, plenty of reading material at the children's level, and simple tools to track progress and give attention to children who need help the most. These elements form the core of the instructional strategy and remain the same whether a Pratham person or a community volunteer or a regular teacher interacts with children.

Implementation: Pratham's models and mobilization

The previous section laid out the teaching–learning dimension of Read India. In this section the focus is on the way in which teaching–learning is “delivered”. Together, these two aspects form the strategy used to drive large scale change to improve foundational learning outcomes in India.

Pratham's implementation strategies have evolved considerably over time. Currently there are two models of implementation in “Read India”, which operate at different levels. In one, Pratham teams lead instruction directly at the ground level with children in communities or schools. In the other, Pratham teams collaborate with the school system at the city, district or state level. Joint teams comprising members from Pratham and government departments design the program and work on implementation with different levels throughout the system. The actual instruction using Pratham methods is done by the government school teachers with children in their school. Regardless of the model, whether direct work by Pratham or partnership work with governments, instructional practices at the group/classroom level are very similar.

Working directly with communities and schools

In the direct model, a Pratham team member leads the instructional activity with children. After discussions with the village government and the school head, this activity is usually done in the local government school during the school day. Apart from convincing leaders, community people, teachers and parents about the need to

improve learning, the Pratham team member also mobilizes volunteers in the village to help. In many cases the school teachers help too.

From its inception, Pratham's core concerns have revolved around how to balance scale, impact and cost. The challenge has been to figure out how to help the maximum number of children acquire basic reading and arithmetic skills in a durable way and at low cost. In the context of Pratham's direct work at the ground level, the question is what can one Pratham person do in 1 year?

The answer to this question is based on past experience and accumulated evidence. From the last 2–3 years, we know that to bring about significant change in basic learning levels of children in Grades III–V in a school takes anywhere from 30 to 50 days in total (with exposure to the intervention for about 2–3 h a day). This means that one person can lead the instructional work in 4–5 schools in a year. Additionally, evidence from previous phases of implementation suggests that periodic bursts of intensive activity are as or more effective than daily engagement with children of this age group. (The evidence that led to this position is discussed later).

Putting all of these elements together, Pratham has developed a model for direct work called “Learning Camps”, periods of intensive instructional activity that lasts 6–10 days at a time. These camps are repeated several times during the next few months in the same school. Depending on the size of the school and the baseline levels of reading and arithmetic, the duration of camps could be anywhere between 30 and 50 days in total (a maximum total of approximately 100 instructional hours). During camp days, children are grouped by their current level of reading and math. Groups have activities and materials appropriate for that level. Between camps, children are given materials to use at home. A quick assessment is done at the end of each camp. This measurement serves as the starting point for grouping and activities for the next camp. Schools and communities, teachers, parents and children know when the next camp is likely to start.

Internal Pratham data from 2013 to 2016 shows that by the last end line, over 75% of the target children in the camps have learned to read fluently and to do basic operations. In locations where children have been tracked over time, it has been observed that these learning gains sustain for more than 70% of these children (Pratham 2016, internal notes). Rigorous, independent, impact evaluations have also been done on this model (Banerjee et al. 2016).

The learning camp serves a demonstration purpose on multiple fronts. On the one hand, it is a way of convincing local communities and schools that substantial change in children's learning can happen in a short period of time with locally available resources. Learning Camps are also a good way to prepare a cadre of people who can help others. For example, the participation of volunteers helps build teams of local youth who can continue to help children between camps and even after the camp cycle is over. At the ground level, the learning camp aims to catalyse local action. But at a more macro level, the objective of learning camps is to catalyse government action on a larger scale. In the 2014–2015 school year alone, close to half a million children participated and benefited from learning camps. Any interested government official who wants a “live” demo can see a learning camp at work in a not so distant location.

Working with the school system in partnership with government

Government partnerships can be at the district or state level. (The district is the administrative unit within the government structure for planning, allocation and implementation in elementary education in India. Overall there are more than 600 districts in India).

The starting point for discussions about a potential partnership vary from case to case. Sometimes the starting point may be discussions triggered by the release of an ASER report; other times it may be after government officials see and get interested in learning camps in their state. The impetus might come from the government's own realization and desire to improve children's learning. At times, discussions start at the state government level but the state agrees to partner at the district level. Other times, the entire set of decisions for collaboration are worked out at the district level. Finally, in some cases talks with the state government have led to state-wide collaboration for all government schools in a state.

Although Pratham's strategies have evolved while working with the government over the last decade, seven key processes have been identified that enable teaching–learning change and embed it in the government institutional structures for the future. The list presented below has been generated through a detailed analysis of past practices from Pratham–government partnership programs. A more thorough investigation of operating procedures in states that have partnered with Pratham in the past will be needed to assess how many of these practices have become part of the normal functioning of school systems.

Assessment

As mentioned earlier, the “Read India” work starts with a basic assessment of student proficiency. Usually, the ASER tool is used as it is in the learning camps. But at times, the government might want to modify the tool. Collaboration to modify the tools can lead to more ownership from the government. Often tools survive programs and are used in other contexts as well.

Creating leaders of practice

Pratham has learned that changing instructional practice requires instructional leaders—people who guide and provide academic support, who can consistently do hand holding, demonstration, mentoring and monitoring of teachers. This role is best undertaken by those who have carried out activities themselves in actual classroom settings and have experienced first hand the progress that children can make. Within the government elementary school system, there usually is a layer of people who were meant to play this role but over the years have become, so to speak, cogs in the administrative wheel—frontline personnel who are collecting data, ensuring utilization and doing a variety of non-teaching tasks. In many of the recent government partnership programs, Pratham works with this cadre of government staff, usually called cluster coordinators. Although called by different names in different states, this person usually has anywhere between 12 and 15

schools in his or her charge. They represent the layer of government officials just above the school level. This cadre not only is trained by Pratham but also implements the teaching-at-the-right-level model daily in schools for a period of 15–20 days. These “practice” classes prepare them well to train teachers and provide support to the teachers in their charge. It should be pointed out that such “practice” based professional development is very unusual in India. Initially, there is resistance but then people begin to enjoy the daily interaction with children and finally relish the taste of success when children begin to read and do maths. It is hoped that this “learning by doing” and “practice led” academic leadership can increasingly become the norm in the school system not just for initiatives like “Read India” but for leading any kind of instructional change and improvement.

“Practice” as a part of training

Practice is an integral part of capacity building and of beginning the mind-shift change in “Read India”. Typically, trainings are short—4–5 days, with half a day each day spent in nearby schools practicing what has been discussed in classroom sessions. Compared to the usual “chalk-talk” mode of training, the practice based approach comes across as different and effective for focussing on the skills and mindsets that teachers need to develop in order to help children who are way behind.

Allocated time within the school day for Read India work

To implement the Pratham method of grouping and teaching children, time is needed during the school day. The fact that state or district governments create time within the daily schedule of the school signals that helping all children, especially the weaker children, is a priority. It is worth pointing out that creating time within the school day for this kind of work is a major departure from “business as usual”.

Grouping by level

The effectiveness of the Pratham approach comes from grouping children by level, rather than by grade. Doing this across grades, especially Grade III through V implies that three/fifths of the primary school, students and teachers, have moved away from the usual age-grade structure of instruction. Even if this process is followed for a few hours a day, it is very different from classes being organized by age and driven by the prescribed, grade-specific curriculum.

Development and introduction of supplementary teaching–learning materials into classroom practice

A big part of the “Read India” effort was and continues to be the introduction of reading materials appropriate for children’s level of reading into the daily life of the school. A typical Indian primary school classroom is centred on grade-specific textbooks. All activities are based on textbook prescriptions even though many children in the class cannot read or understand the material. Through government

partnership programs, over the years, Pratham has helped to inject a vast variety of materials into the school system. These range from phonetic charts, number charts, small story books, paragraph cards for practice reading, story cards, wall charts, etc. Many of these are generated by internal teams who work closely with children, but also by writers or teachers. Writing simple stories for children provides a good platform to involve a wide cross-section of people who are otherwise not connected to schools or to teaching. Over time in many states, availability of supplementary material has increased. The expansion in the availability and accessibility of print material at the child's level contributes to building and sustaining children's interest in reading well beyond any program or curriculum.

Culture of evaluation and measurement

Ten years ago, it was difficult to find evaluations of government programs or evidence of outcomes. Today most states are not only doing their own measurement of learning outcomes but also inviting external evaluations. "Read India" has contributed to and influenced this growing trend in the country.

One recent example from Punjab illustrates the "system change" potential of the seven practices just listed. Pratham had worked very closely across the state with the Punjab government between 2009 and 2011. The program was called "Purrho Punjab" (or Read Punjab.) Almost all of the elements described above were implemented in the system during that period. After a change in the political and bureaucratic administration at the state level, the partnership was discontinued. Some years later, in the 2015–2016 school year, the state government revived the core activities of "Purrho Punjab". They changed its name ("Parvesh") but used many of the same elements, without requesting support from Pratham. The ASER 2015 data, compared to previous years, shows a visible improvement in basic learning especially in maths for the grades in which this program was implemented (ASER 2015).

Observations and lessons from scaling up and scaling down

Pratham has continuously evolved teaching methods and models of delivery for two decades. However, "Read India" was announced and launched formally at the release of the national 2007 ASER report. At ground level, the aim was to show that it was possible to enable children to gain basic learning skills quickly with resources that were available locally. At the policy level, the goal was to bring children's learning to the centre of the discussions and debates about elementary education in India so that resource allocation and implementation plans would focus on improving children's learning.

Lessons from working directly in the community and with volunteers

In the 2007–2010 period, "Read India" unleashed a massive volunteer mobilization effort. Following the announcement of its launch, Pratham teams identified and trained thousands of village volunteers who taught children. Keeping cost

considerations in mind, training programs were short and material kits were minimal. Volunteers were truly volunteers; they were not paid.

The main lesson of “Read India” from 2007 to 2010 was that it was possible to carry out large scale work through village volunteers and reach millions of children. At the peak of the previous phase of the campaign, there were “Read India” volunteers in half of all rural districts in India. However, the impact and sustainability of the learning gains made in this manner was unclear. Training of volunteers was short and focussed on building basic instructional skills. Volunteers were enthusiastic but unable to commit time beyond short periods. Most of the volunteer work was carried out in community settings so the effect on instructional practice in schools was limited (Banerjee et al. 2010). At this stage, it seemed important to scale down in an effort to develop higher impact with the same resources.

Starting in the 2012–2013 school year, a new strategy was tried: the “Learning Camp” model. Based on the experience and evidence of experimental interventions conducted in the previous school year by Pratham team members through direct work with children, “Learning Camps” emerged as a more effective way to ensure basic learning with better learning gains as compared to the purely volunteer based model. In the 2013–2016 period, “Read India” learning camps have been carried out in close to 5000 government primary schools a year directly reaching approximately 300,000–400,000 children annually. Program data shows that depending on the baseline of a group of children, most can be helped to acquire reading skills and basic arithmetic competencies over 3–4 learning camps running for a cumulative period of 30–50 intervention days, unless the baseline is heavily biased towards children who do not even recognize letters. In such a case, another 8–10 days of intervention are needed. Across the board, about 75% of schools got 70% of their children to be able to read and do basic arithmetic.

The 2013–2016 phase of “Read India” is expected to reach a cumulative total of about 16,000 villages but with less manpower and more sustained learning gains. The presence of a more experienced and skilled Pratham staff member in every learning camp means that there is a greater possibility of influencing teachers on issues of instructional practice and of convincing parents to focus on children’s learning.

Lessons from working with governments

In the decade since “Read India” was launched there have been many episodes of working with the government at both state level and with districts. In the early period between 2005 and 2010, there were major partnerships in full states in large states like Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Himachal Pradesh and Punjab. There were relationships in other states like Assam, Rajasthan, Uttarakhand, where the partnership was either weak or did not endure. In Bihar, Pratham had a long innings with the government but the focus was on helping the state and district governments bring out-of-school children into school rather than directly improving learning.

Especially for the state level partnerships, collaborations were negotiated year by year and depended heavily on the bureaucratic leadership in the state. Changes at the top meant uncertainties for the continuation of the partnership. The Pratham experience shows that catalysing governments can have tremendous reach, albeit indirectly. Through the school system, a vast number of classrooms and children can be reached. In 2007 over 21 million children were reached; the figure in 2008 was close to 34 million but then dropped to 12 million in 2009 and by 2010, the figures were considerably scaled down to 2 million. Like in the case of volunteers, participation of teachers was part and parcel of the partnership efforts and hence hundreds and thousands of teachers were exposed to Pratham's teaching materials and methods. However, without ongoing onsite support to teachers and schools during the intervention, or continuity year after year with the key elements of the instructional approach, it was unlikely that long-run or deep-down systemic changes could take place.

The significant scaling down of "Read India" from 2010 onwards can be attributed to a serious re-thinking within the Pratham leadership about how to create stronger and more sustained impact on learning outcomes, on instructional practice, and on longer run deep-down change in how teaching–learning is to be organized. It also had to do with the shifting priorities of the government in light of the newly enacted Right to Education law towards inputs and processes rather than outcomes. The scaling down was also a fall out of the global economic downturn which resulted in lower resources available to Pratham from the usual donors and supporters for innovation or expansion.

The major lesson for Pratham was also that the journey of transformation of communities and of systems is a long one, with continuous learnings at every step. Internally as an organization and externally as a major player on the Indian scene, Pratham learned that it is important to be flexible and nimble, to seize and to create opportunities, and to continue to push the learning agenda on every available forum. At the same time, it is also essential to play the game simultaneously on both fields—the micro dynamics at the ground level and the macro dynamics of national and state priorities, policies and plans.

Innovation and evaluation: Studying impact

Different aspects of Pratham's programs have been evaluated at different points in time since 2000, with internal program measurement also evolving over the years. The accumulation of external evidence on program effectiveness may be a unique feature of the collaboration between Pratham and the Abdul Jameel Poverty Action Lab headquartered in MIT. For over a decade, half a dozen impact evaluation studies using randomized control trial methodology have been done in different parts of India testing aspects of "what works" to improve children's learning. (Banerjee et al. 2015; JPAL 2014, 2015) The studies range across a variety of contexts including situations where the instructors are either village volunteers or school teachers, and also where Pratham staff leads the teaching supported by village volunteers but the work is carried out in the school.

Findings from this body of research reinforce how Read India interventions are being implemented currently. Key elements of “Read India” that have empirical support from the impact evaluations include the following:

- Information alone does not help. People are convinced of the use of assessment data when it is translated into concrete action.
- Grouping by level for instruction as well as using appropriate instructional methods and materials significantly improve learning levels for children, especially those enrolled in school who are aged seven or more, but do not yet have basic reading and arithmetic skills.
- Short periods of instructional time can be productive in raising learning whether it is in summer camp or through repeat camps during the school year.
- Teaching at the right level can be effective when carried out in the community by village volunteers as well as in the school by school teachers, especially if grouping and activities appropriate for each level are used.
- Simply distributing teaching–learning materials to schools does not show any effect on children’s learning.
- Teacher training by itself does not translate into changes in instructional practice or in outcomes. Hand-holding, demonstrating, mentoring, and monitoring need to happen on an ongoing basis to support teaching at the right level.

The findings from the series of impact evaluation studies have helped not only to show that the Pratham method is effective but also to identify key features of the intervention that influence its effectiveness.

Looking ahead: Prospects for change

Experiences of and evidence from 10 years of “Read India” provide a rich opportunity both for looking back and looking ahead. Broadly speaking, the theory of change underlying the “Read India” efforts centred on five big pillars of action. First, school systems and parents need to focus on children’s learning. If children do not have the basic skills like reading and arithmetic, then special efforts have to be made to ensure that children are enabled to acquire these competencies. “Business as usual” or simply acquiring more years of schooling (starting school earlier or staying in school longer) will not do the job. Second, time has to be found for building the foundation for learning. Third, appropriate instructional methods are needed to enable children gain these skills. Fourth, to learn to read, children need a lot of reading material that is at their level. Fifth, children’s learning has to be tracked periodically so that progress can be reviewed.

How far have we come and how far is there to go? In the years since Read India started, how much has the education landscape changed in India? At the level of macro policy and statements, the last decade has seen a distinct shift from almost exclusive focus on inputs and provision towards learning outcomes. The Twelfth Plan, recent Economic Surveys and the background papers for the new education policy all underline the need for focussing on improving learning outcomes.

If one of the key objectives of Pratham was to bring the issue of children's learning outcomes to centre stage, then one can claim success. The annual release of the ASER report and widespread discussion of its methods and findings at different levels within the government, in Parliament and state legislatures, in the research community, among practitioners, policy advocates and in the general public have all helped to bring about this change. Other studies of student achievement done by international agencies, Indian institutions within and outside the government as well as foreign and domestic researchers have also influenced this shift in focus.

Within states, some clear changes in practice are also visible. Compared to earlier years, children's learning is being measured often and in a variety of ways. Ten years ago, there was only a periodic sample-based measurement of student achievement that was done by the central government. Today every state has its own version of learning measurement called SLAS (State Level Achievement Surveys). Also, the continuous and comprehensive evaluation (CCE) mentioned in the Right to Education Act led to a spate of state level initiatives related to score cards and reports for assessment. If the statement "what gets measured, gets done" is true, then this is an important first step for bringing the focus on children's learning.

But what about sustained instructional improvement? What about key elements changing in the design and implementation of how teaching–learning happens in schools and classrooms? A review of efforts in India today will reveal a growing number and variety of educational programs and interventions both by state governments and non-state actors (among others, Gunotsav in Gujarat, Sambalan in Rajasthan, Pravesh in Punjab, EGRAN in West Bengal, and Vachan-Lekhan Prakalp in Maharashtra). Working closely with the government and also independently, there are various "fellowship" programs, school leadership initiatives, interventions to improve teacher motivation and technological innovations.

Clearly, some things have begun to fall into place. For example, the fact that children who have reached third, fourth and fifth grade but not learned to read need extra time within the school day is now accepted by many state governments and school systems, and time tables are reorganized to make such time available. Extra time during summer holidays or other vacation periods is also being used in different states at different times for this purpose.

Ten years ago, it was rare to see materials other than textbooks in children's hands. Today schools have libraries; many state governments have printed and distributed easy to read materials that are at the child's level. In many cases, the prototype of such story books and story cards came from Pratham and affiliates. Some years ago, the central government also set up a "reading cell" in the national institution for educational research and training. This cell also guided the development of early reading materials. Many other publishers too have started producing materials for early readers. Again, in the sphere of books for children, the influence of "Read India" and similar efforts that focus on the importance of early reading is evident.

But what about major transformations in objectives of teaching and learning and in actual practices that result in significantly higher learning outcomes? In the 10 years of "Read India", there have been multiple cases of Pratham–government collaborations to improve learning. Several of these efforts like that in Punjab (2008–2010), Bihar (2013–2015), and Madhya Pradesh (2013–2015) were state-

wide government-led initiatives that have lasted several years, involving hundreds of thousands of schools and millions of children. In fact, the Punjab government who successfully ran “Purrho Punjab” in 2008–2010 has revived and restarted the earlier Pratham initiated “teaching-at-the-right level” model in the 2015–2016 school year.

However, a key concern is that despite accumulating evidence of effectiveness of the “Read India” approach, changes in instructional practice do not “stick”. Usually, Pratham’s method is implemented (well or weakly) as a part of a special ‘remedial’ effort and not as a sustained part of the teaching–learning system. There is still a widespread belief that remedial programs are sufficient as one-time measures. Curriculum compliance dominates teaching activities. While efforts to strengthen the early grades (I and II) are starting, they have not yet picked up serious steam and are yet to show huge impact. Moves to push for integrating early childhood education into the school system or seriously implementing school readiness interventions have always been there but not adopted seriously in any of the major government school systems. The government’s fund allocation and therefore planning still proceeds on an annual basis, not allowing multi-year or continuous initiatives to be operationalized.

In reflecting on this phenomena, at least the following factors at play can be identified. First, while the importance of children’s learning is being acknowledged in public discourse and in policy circles, its criticality and implications for future education and life are still not being fully understood. This change in mindset may require more time. With the advent of a new corporate social responsibility law in India, companies are putting more money into social sector projects. But by and large such support is seen through the charity lens rather than as essential investment into building the human infrastructure of the country. There is also the perspective that any institutional change will take a long time to happen. Short run and fast solutions should be viewed with scepticism.

Second, while there is growing acceptance that learning issues are important, there is no consensus in India around what children should know and be able to do by when. The education establishment in India, both in the government and outside, believes that learning is a multi-faceted phenomena which cannot be only seen as reading and basic math. Proponents of this view criticize Pratham and ASER for having reduced education to a “minimalist” level (Raina 2013; Kumar 2015). In addition, many of those deeply involved in pedagogy and teaching view assessment with suspicion. But Pratham is of the view that without engaging meaningfully with measurement, it is hard to convince others about the depth or scale of the learning crisis.

Third, there are a set of competing theories of change of what will improve quality in education—a variety of strongly held and widely divergent views of what will be the main levers of change (Banerji 2014a, b). Some believe that unless there is compliance with the Right to Education Law in terms of minimum facilities and satisfactory qualifications, there is no point in focussing on quality. Other views range from techno-managerial mechanisms that need to be put in place (like biometric attendance) to ensuring that schools function properly. Still others focus on incentives for teachers and accountability. Others believe that without long run capacity building of school leaders and teachers via in depth pre-service and

professional development, nothing can change. But this is countered by the point of view which states that recruitment processes for teachers are so flawed that without a complete overhaul, institutional deterioration is inevitable. Often these competing theories of change play out in the same eco-system but based on different assumptions and theoretical pathways. The multiplicity of objectives causes confusion at the ground level, dilution of processes and leads eventually to little or null change in outcomes.

Fourth, although there is growing systematic, high quality data on what works to improve basic learning, by and large, education policy in India is not influenced by empirical evidence (Muralidharan 2013; Walton and Mukerji 2013; Banerjee and Dufo 2013; Kremer et al. 2013).

Fifth, there are still deep structural weaknesses in the overall educational eco system. The growing private school sector and the flailing government school sector are all part of the larger ecosystem which is deeply anchored in the age-grade structure, and ruled by overambitious curricula. Ultimately the system is driven by examinations at the end of the secondary stage. Decisions on key instructional issues like what is to be taught, how teaching is to be conducted, who is going to teach—are all centralized or made at a level far removed from the school. While a new law gives space to school management committees, in reality these bodies do not have much by way of resources or power and certainly none to influence changes in teaching or content at the school level.

The current moment in India's educational history is an interesting one. India has come a long way in accepting that focussed attention is needed to improve children's learning. With the widespread realization of a learning crisis, it is likely that future action from the government will begin to explore how to improve learning. Over time, capacities within the government and outside are growing and will grow further; more people are gaining and will continue to deepen their understanding and experience of what needs to be done. In this context, Pratham and Read India need to continue to experiment and demonstrate that substantial learning gains are possible with existing resources.

Development cannot be seen as an explosion where everything changes overnight. Change is often incremental and has to be pushed and pulled both at the high level as well as at the ground level. The soil changes over time and so does the weather; domestic and international priorities are linked; they transform and influence each other over time. When a similar exercise to the current one is done some years later, it should be possible to look back and see the processes and pathways through which Pratham's "Read India" was able to contribute to the transformation of children's schooling and learning in India in a significant and substantial way.

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