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## **How Do Systems Respond to Disruptive Pedagogic Innovations? The Case of Pratham in Bihar**

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HOW DO SYSTEMS RESPOND TO DISRUPTIVE PEDAGOGIC  
INNOVATIONS?

TEACHING AT THE RIGHT LEVEL: THE CASE OF PRATHAM IN BIHAR

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## PROLOGUE

Several decades ago, the world accepted the critical importance of achieving universal schooling - every child in school. Along with this acknowledgement came the assumption that years of schooling would lead to educated young people capable of taking on the challenges of life, of livelihoods and of further study, as the case may be. The national and international goal of "schooling for all" led to massive investments in infrastructure and inputs, accompanied by and huge efforts to provide access to schools. Planners, policymakers, practitioners and parents were all involved in this endeavor which has resulted in very high enrollment rates in many countries.

As enrollment levels have risen in developing countries, new challenges have surfaced in elementary education. Data and experience from the field strongly suggests that children are not learning. On the one hand, more and more children are coming into school and staying longer. On the other hand, what they are learning in school is woefully inadequate. For example, the evidence from India suggests that in the last ten years, learning levels have remained low. If children do not learn foundational skills in the early years in school, it seems difficult to help them acquire these later. With weak foundations, it is not possible to build a strong building. The question of children's learning is fast becoming central to the entire enterprise of education.

What will "learning for all" entail? What changes are needed in education systems, in societies, in economies, in politics for all children in developing countries to have the opportunity to learn well? How do systems respond to such challenges? How do priorities, policies and practices change? What has to change and how? Does change happen from the bottom and bubble upwards? Is change hammered down from above? Who and what enables change? What and how does resistance take place? Do a combination of discussions and decisions, events and experiences lead to a change in goals and outcomes?

In recent years, the Indian state of Bihar has been a hot bed of innovation and research as a forward thinking leadership catalyzed economic growth and public sector reform in key human development sectors. This paper tracks the recent journey of an effort aimed at raising basic learning outcomes of children in Bihar. It is a story of change and continuity, of evidence and experience – a narrative of how an idea navigated its way through a changing landscape and played out in the context of established mind-sets as well as entrenched systems and interests. The story is told by one of the protagonists who provides a fine-grained texture of what happened but also offers interpretations of decisions, events and trends. The paper ends with Bihar temporarily at an intersection – a cross-road from which the journey undoubtedly resumes. The question is – in which direction will the travelers go and towards what goal?

## FIRST STEPS

### THE STORY BEGINS

*One weekend in June 2012 I got a phone call. A polite young voice. The caller was a civil servant, a district magistrate (also called DM), head of the government administration in a district in Bihar.<sup>1</sup> He had a problem and was looking for a solution. Someone had told him to speak to me. The problem was quite straightforward. In his district, like in other districts across the state, children's attendance in school on any given day was low. The young DM had tried various ways to get more children to attend. More supervision of schools, entitlements being given on time, ensuring that midday meals would be served properly. Attendance did rise but seemed to hit a ceiling of about 70%. With all these benefits, why were children not attending regularly? If children did not come to school regularly, how would they get a proper education?*

*What do you think, he asked. I laid out a scenario. How about if the following is true? Imagine a Std V class.<sup>2</sup> The teacher is doing what she has been taught to do - she is using the Std V textbook to teach the class. But she gets frustrated and demotivated because most of the children are not responding and don't seem to be "getting" it. The children are disinterested – they are there but many don't understand what the teacher is teaching. And if you ask the parents they will tell you that they are disappointed with the school. They will say that the school does not add much "value" to the children; the children do not seem to be learning. Parents blame the teacher for the situation and the teacher blames the parents. Actually nobody is at fault. Neither the teacher, nor the children, nor the parents. The whole situation is stuck.*

*What is the reason for this situation? There could be many ways to analyze why things were not working. But for me – the answer was simple. The Std V textbook was way too difficult for the children. For a variety of reasons, many children were still struggling with basic skills of reading and arithmetic. In Std V, the teacher was teaching Std V content and concepts as they were laid out in the textbook. She was not teaching letters or numbers or basic operations – foundational skills that the children needed to master before coping with the grade level textbook. According to me, this mismatch was at the core of the problem. I could almost see the DM at the other end of the line mulling this thought over. I briefly described what we do in ASER and how the data shows us learning levels that fit the scenario I had laid out for him.<sup>3</sup> We agreed to meet in a few days. I would go to his district and then we could discuss the matter more.*

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<sup>1</sup> In Bihar, like in many parts of India, old colonial terms are still used for these positions. The head of the district administration in Bihar is called the District Magistrate. The person holding this post is commonly called the

<sup>2</sup> "Std." or standard is the commonly used work for grades in India. Std I is the first grade in school. The law states that children are about age 6 when they enter school. However, in most states children tend to be younger than that.

<sup>3</sup> See ASER data for Bihar for that year [www.asercentre.org](http://www.asercentre.org)

For decades it has been assumed that schooling leads to learning.<sup>4</sup> This is the assumption that has been widely held by parents and practitioners, policy makers and the public. It is also assumed that “more is better”; more years of schooling are better than less. It is only recently that the world is beginning to realize that schooling does not necessarily lead to learning. For many in India and in other countries, at ground level and at higher levels, this is a new lesson. We have spent years organizing schools and schooling, but now we have stumbled upon a new problem. Accustomed to years of thinking about inputs and expenditures, now switching to outcomes —especially learning outcomes— feels new and as yet unfamiliar. We are just beginning to figure out that it is important to go beyond schooling to think about children’s learning.

Going to school is visible. Parents, communities, and public officials can see children going to school. Governments and donors have been obsessed with monitoring provision and counting enrollment. But now that in many countries most children are in school, it is time to make *learning* equally visible. We need to demystify learning for mothers, fathers and family members —especially those who are not literate or do not have much schooling — and make it possible to see what learning looks like. Parents work hard to send their boys and girls to school. And once they are in school, parents assume that children must be learning. Being illiterate or not very schooled, it is not surprising that parents are unable to tell whether their children are making adequate progress, especially in the early years. In later years, faced with report cards and examinations which give results in grades, scores, or percentages, they find it hard to understand exactly what the figures mean. As far as enrollment is concerned, parents can talk about schooling. They often argue about inputs and entitlements that their children are supposed to receive as a result of going to school. But conversations focused on learning are neither easy nor automatic. Learning is considered to be the preserve of “experts;” specialists and educated people like curriculum designers and teacher trainers are the ones who can and will think about “learning” and take decisions.<sup>5</sup>

India’s school system is organized according to age and grade and is built on a series of assumptions. Children are supposed to start school in Grade I when they are about 6 years old. Each year they move into a higher grade and by age 14 they are supposed to reach Grade VIII. From age 6 to age 14 or from Grade I to Grade VIII education is free and compulsory by law and children cannot be held back in the same grade if they do not achieve the prescribed standards. For each grade there are a set of academic expectations that assume that most children have mastered the content and skills expected of them in the previous grade. In this scenario, the system expects teachers for each grade to teach from the textbooks specified for that grade.

But a closer look at the reality shows some different facts. The latest ASER report for rural India shows that just under half of all children who are in their fifth year of school can read simple stories at Grade II level. Of those who cannot as yet read at this level, almost 20% are still struggling to read anything beyond letters; another 14% can read basic words but not

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<sup>4</sup> This section is based on a blog written by the author a few years ago.

<sup>5</sup> When parents feel concerned about their children’s learning, illiterate parents and interestingly, even elite, educated parents depend heavily on tutors and other inputs (read - more inputs will lead to better outcomes) to improve the performance of their children in the education system.

more; 19% more can read simple sentences but cannot cope with longer text.<sup>6</sup> How can such a huge gap remain invisible? Given these realities on the ground, what, then, can be the most useful and visible way in which people can understand and face the challenge of learning?

*A few days later, a colleague and I showed up in the young DMs office. He was ready for us. He had done some homework in the last few days since our chat on the phone. On his desk was a sheet of paper – a “report card” of sorts. The DM’s team had designed an assessment based on our conversation. They had tested children in Std III, IV and V in ten schools and had reached the same conclusion as us. They found that the children in all of these grades were far below grade level and needed help with basics. We did not have to convince him about the problem. He had gathered the evidence himself and was convinced. Now we needed to start working on the solution.*

*Our solution to the problem was straightforward. Instead of grouping children by grade, we suggested grouping children by their level. Simple assessment tools could be used to figure out what children could do comfortably. We could take children from Std III, IV and V and group them accordingly. Each group would be taught using materials and methods that were appropriate to their level. As soon as a child made progress, she or he could move to the next group.*

*The DM listened to this strategy. “When can you come and train our teachers?” he asked. I said “No”. It is better if there is a cadre of people from within the government who can take the lead. Let them first try out the strategy that I described and use it with children for some days. If they are convinced and if children make visible progress, we can move ahead and plan what to do with teachers. If the lead team is confident from what they are able to do, then they can train and monitor the teachers. You will not need us.” Immediately dates were fixed. Within a week the training of the lead team was scheduled to start. The action had begun.*

#### OUTLINING THE LANDSCAPE:

In Bihar, like in most states in India, the administration of the government elementary school system, especially in rural areas, follows a tiered structure. A state is divided into districts and districts into “blocks”. Depending on the state, a block may have anywhere from 50 schools to 300 schools. Within each block, there are “clusters”; each cluster has about 12-15 schools. Within each layer of administration, there are officials to manage the work at that level. Interestingly, officials at state district and block level are mainly administrators and managers

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<sup>6</sup>ASER stands for Annual Status of Education Report – a massive nationwide household survey facilitated by Pratham each year since 2005. ASER collects data on reading and arithmetic for a representative sample of children from every state and almost every rural district in India. On average ASER reaches over 560 districts each year, surveying an average of 650,000 children in more than 16,000 villages across the country. Every year, since 2006, amidst a lot of media attention at all levels, it is released in Delhi in mid-January. Data collected on schooling and basic learning in one school year is available in that school year itself. ASER is the only current annual nationwide data on children’s basic learning available in India today. See [asercentre.org](http://asercentre.org) for all reports from 2005 to 2014.

and not providers of academic guidance or support. At the state level, the department is headed by a bureaucrat usually from the prestigious national administrative service. The others at state, district and block level come from the state education service – and spend their entire career in educational management. Perhaps in days when school construction was at its height, managing and administering projects and coordinating allocations and expenditures was a much-needed task; perhaps this was the situation when teacher recruitment happens. But today when monitoring and mentoring for teaching-learning is urgently needed, this cadre of officers is often found to be wanting and woefully ill-equipped for the responsibilities that they are supposed to handle.

The responsibility for the academic part of the education system – curriculum design, content development, pre-service and in-service training - lies with the state education research and training institutions (SCERT) and their district counterparts (DIET)<sup>7</sup>. These in turn are led by the national institution – NCERT<sup>8</sup>. In a state like Bihar, until recently, many districts did not have a functioning teacher-training institution at the district level. Those that are in existence are very often desperately understaffed and seriously underprepared to carry out what they need to do.<sup>9</sup>

Until 2004 or so, in Bihar, there had been no teacher recruitment for almost two decades. In the last ten years, the state has seen different waves of teacher recruitment on a massive scale. Inducting hundreds and thousands of new teachers into a system that is ill prepared for training has been a daunting challenge for the state government. With the passage of the Right to Education law in 2010, all applicants are required to sit for a teacher eligibility test to qualify to become a teacher. Training of teachers, when it happens, is done in a traditional way with classroom lectures and theoretical concepts. Although there are modules which aim to motivate teachers and provide child-centered pedagogy, to date, there is usually very little practice teaching that is supervised by master teachers or faculty of teacher training institutions.

## FIRST STEPS

*Jehanabad is a relatively small district – a total of about 700 schools and 7 blocks. The new intervention was slated for two blocks – Kako and Modanganj (both adjoining blocks of the district headquarters).<sup>10</sup> About 25 people gathered in the training centre. This was the lead team for the initial phase. Each of these people were known as cluster coordinators – CRCCs. On average, each had anywhere between 12-15 schools in their “charge”.*

*On the first day of the training, we first talked about attendance. We requested each participant to put down the percentage of children who were likely to be present in school if did a school visit to a random school that day. Everyone wrote down their estimate. Next we*

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<sup>7</sup> SCERT stands for state council for education research and training. DIET stands for district institute for educational training.

<sup>8</sup> NCERT stands for national council for education research and training.

<sup>9</sup> From 2014-15 onwards, major support from the World Bank is being used to develop teacher training institutions in a big way.

<sup>10</sup> In the two selected blocks in Jehanabad, about 225 schools (all schools in the selected blocks) and approximately 16,500 children participated in the experiment.



*spoke of children reading. We showed a simple text (at Std II level) and asked each CRCC to write down their estimate of how many children they thought could read the given story if they visited children in Std III, IV and V in any school in the district. These estimates were written on the blackboard in the training hall.*

*Next on the agenda was a trip to nearby schools. Participants were to go to these schools, observe attendance and do some basic assessment of reading and math. When they came back they had to match the actual attendance against the estimated attendance and the actual percentage of children who could read next to its estimate. The two attendance numbers were fairly close to each other. But the reading estimate that they had put down on the blackboard was much much higher than the actual reading levels in the schools. This was the “a-ha” moment. A new problem had become visible, one that no one had been thinking about. A new problem that came out concretely and stood waiting for a solution.*

*Sobered by the experiences of the first day, the CRCCs were very cooperative in the training sessions in the following days. The four days passed quickly. Each day we discussed activities for children of different groups/levels and every afternoon we went back to the nearby schools and practiced with children. The “teaching-at-the-right-level” methodology was being absorbed by the participants.*

*Once the training was done, oriented and armed with new methods and materials, CRCCs paired up with each other (sometimes 2-3 in one school) and got down to the business of teaching. We called this period the “practice class”. Children were grouped by level and each CRCC worked daily with the same group of children. My team members, often the same as the ones who had trained, visited them in their schools and spent time with each group. This exercise went on for 15 working days. There was round of discussions with the DM and his lead team at the end of the “practice class” phase.*

*About ten days later, I was visiting the “practice class” schools. The one I visited on a sunny afternoon was in the middle of rice fields. A sea of green surrounded the school on all sides. Far away in the distance you could see the village. We were in a classroom upstairs. Children sat in a circle on the floor. They were learning to write words on their own. Each boy or girl was given a letter. They had to go and write a word on the blackboard that began with a given letter. “Here is the letter “Ja”. Let’s see who can write a word beginning with “Ja”?” One boy jumped up and went to the board and wrote “Jal” (water). Another one followed. He wrote “Jag” (jug). Next was the letter “Na”. A girl wrote “Nadi” (river). A bit later came the letter “Aa”. One little girl put her hand up. She was dying to write. She came up to the blackboard and very slowly and shyly she tried to write something. The CRCC-instructor who was teaching the class could not figure out what she was trying to write. When the girl was asked she said “aa-ee-ss-kream” (ice-cream). “Why don’t you write an easier word?” I suggested. She shook her head at this suggestion, disagreeing. Softly her voice could be heard saying “but this is my favourite word with “aa” and so I want to write it.”*

*The CRCC in my school in the rice fields turned to me and said, “I wonder how this is all happening. Children who never came regularly to school before are coming now. Children who could not do anything earlier, are able to do so much. Look at this child”, he said with shining eyes, “ten days ago she could not even recognize words and today she wants to write*

her favourite word! We have achieved more in 10 days than in 5 years! How is all this happening?" I looked out of the window at the sea of rice fields. It was almost like we were in a ship with rice waves lapping at our hull. "There is nothing here" I said, "Nothing except for you. It is you - you have made the children able and now they are learning".<sup>11</sup>

#### KEY ELEMENTS OF THE INTERVENTION:

As far as the teaching-learning work was concerned, it was clear that we needed to start from the basics, from where children were, to bring them to where they needed to be. Supported by Pratham, the district administration took a few common-sense decisions.

First, using a simple tool, a quick baseline was done for all the 16,000 participating students in 224 schools (Figure 1). The baseline indicated that of children (Std III, IV and V) in the selected schools about 30% could read a short four line para or the Std II level story. Close to 60% of children could recognize letters but not be able to read even simple words. The remainder could read words but not sentences.

Figure 1. Basic reading assessment (ASER reading tool)

**READING TOOL: HINDI**

Std II level text

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

Next, a "special period" of an hour and a half was allocated within the school day for the intervention. For this special class, children in Std III, IV and V were organized by their ability to read rather than by grade. Teachers were assigned to groups rather than to grades.<sup>12</sup> For a

<sup>11</sup> This section is based on a previous article written by the author that was published in Phi Delta Kappan in March 2014.

<sup>12</sup> According to India's Right to Education Law, there should be five teachers in each primary school. But in this district there were often only three teachers.

specified period in the day, there would be “teaching-at-the-right-level”. Whoever usually taught these grades in a particular school was now allocated to these level wise groups.

The reading intervention consisted of three or four daily activities. Simple texts were created – five to eight line stories in large font for children to use. The set of stories was printed in a booklet and given to each and every child. These stories formed the basis of the core reading activity in the group. One story was read out by the instructor. The group then discussed the story. There were more reading out aloud by the teacher and the children. Letter and word games were played in big and small groups and children were encouraged to write words and sentences. This is very different from a typical Indian classroom where the textbook anchors all activities. The usual teaching-learning process is entirely driven by “chalk and talk” and geared to “completing the syllabus” and finishing the textbook rather than ensuring that children learn. But in the Jehanabad case, the instructor worked with children to ensure that each child had mastered the skills for that level before they moved up to the next level group.

The first visible change in the Jehanabad schools was that children’s attendance began to rise. Unlike before, when those who came to school would run away home after midday meal, the last hour and a half in the school day during the “special period” was the time when almost all children were in school. (The special period was for children in grades III, IV and V. But it was not uncommon to see younger children, those in grades 1 and 2, standing around or looking through the window, watching their older brothers and sisters learning to read.)

Within a space of days, children began to make progress. They moved from the beginner or letter level to reading words and then paragraphs and stories. Their progress energized the teachers and the parents. By the end of the school year, more than 70% of children in Std III, IV and V were able to read at least sentences and some could fluently read stories too. There were still children who were struggling but now the proportion of those who could not as yet read words dropped to less than 15%.

READING LEVEL	% Children who can read at different levels	
	Base line (Aug_2012)	End line (Mar_2013)
Story (Std II level)	16.4	53.5
Para (Std I level)	14.4	18.8
Word	12.1	14
Letter	22.7	9.5
Beginner	34.4	4.2
Total %	100	100
Children tested	16540	15972

## THE EVOLUTION OF THE APPROACH

The actual story of Pratham and the adventures in teaching children to read (and do basic arithmetic) has its beginnings almost fifteen years ago.<sup>13</sup> Even as early as 2000 when we worked in the slums of Mumbai, it was clear that more and more children were coming to school and despite high and increasing enrollment rates, the status of basic learning was quite unsatisfactory. Official government figures showed that on average, of every 10 children who entered formal school in Std I, only 6 completed the primary school stage (UNDP 2000).

Dropouts were visible but there were less visible but equally critical problems as well. Our experiences on the ground since the middle of the 1990s showed that poor academic achievement was endemic to the Indian primary education system. Many children did not make adequate progress in the early grades; foundational skills did not get built. The content and the pace of the curriculum (as mandated by the state government) in Grade III and IV accelerated rapidly, making “catch up” difficult. Thus, despite staying on in school, such children never seemed to pick up basic skills adequately. In our work with slum children in Mumbai in the late 1990s, it was not unusual to have large numbers of children complete the primary school stage - Std IV or V without being able to read or write fluently and without being able to do simple arithmetic computations.

On the home front, many children, especially from poor communities, were the first in their families to go to school. Adults in the household were mostly uneducated. There was not enough support, space, opportunity, time, interest or inputs at home for the child’s learning to be supported and strengthened. So home factors did not contribute much to being “successful” in the formal school system. On the school side, whether government or private, school systems in India fifteen years ago did not have any in-built mechanisms to provide supplemental help to children who needed extra help or who progressed at a slower pace than that mandated by the state curriculum. Elite and middle class parents organized this extra help to strengthen children’s learning through tuition and other classes. Poor parents could not afford this extra supplement. Thus if children began to fall behind in the early grades, there was no one to recognize the problem and no provision or support within the school system to fill this gap. As the national push to universalize primary education intensified, more and more children came into the school system who needed sustained effort, resources and “accelerated learning” techniques to help them “catch up” and to stay in school to succeed.

Even in the early days, it was clear to us that learning to read was the first and most essential step for education. Without being able to read a child cannot progress further in any school or educational program. The question was how to make it? How to make it happen effectively using the resources that were available? How to make it all happen on scale?

Another question – which children to focus on? All children in the school system needed help. Our logic was that for students in Grades I and II, there was time. Two whole years could be used to build their foundational skills. But for those who were already in Grades III and above, time was running out. If they did not get help soon, they really would not be able to gain any “value”

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<sup>13</sup> This section is based on a previously published article. See Banerji, Chavan and Rane. 2004. Learning to read: The Story of the Read India adventure. Pratham’s experiences with accelerated learning. Seminar April 2004 #536. This issue was called “Are we learning?” <http://www.india-seminar.com/semframe.html>

from simply remaining enrolled in school. Content and curriculum gets increasingly harder as children move into higher grades. Hence for the last almost 15 years, Pratham has focused efforts and innovations on the Std III, IV, V group.

A series of early experiments within Pratham led to the formulation of the first “Learning to Read” package. The main ingredients of this approach were in place by 2004. Right from inception, there was a simple assessment which helped to identify children’s reading level. A set of simple activities - reading stories aloud, discussions around the story, use of the phonetic chart (barakhadi chart), playing word games and doing writing activities - formed the essential core of the teaching-learning “package”. This helped children not only to learn to read but also to discuss what they had read and be able to express their thoughts orally and in writing. The confidence generated by this acceleration in learning fueled the next steps. Similar steps and methods were also used in arithmetic.<sup>14</sup>

Among the early experiments was a short intervention with government schools in two tribal blocks in Maharashtra. Emboldened by the successes that we saw in our own programs, we approach the Government of Maharashtra to see how our methods to accelerate reading could be used by government schoolteachers. These discussions led to an intervention in these two areas. The process followed even in those early days was a straightforward one; Two Pratham trainers shared their experiences with “learning to read” with the government officials (cluster coordinators) at the cluster level. These officials then tried these techniques in their schools daily for a period of 15 days, after which they trained their teachers. In a short period of 2-3 months, the reading improvement of children in these schools was significant and substantial.<sup>15</sup>

At the core of our “learning to read” approach was the simple assessment. Although it was originally designed to assist in instruction, we found that it had other uses too. The tool was very helpful in explaining to parents and community people what we meant by “reading”. Visually, the tool helped parents understand what children should be able to do within a few years of being in school. The potential of this tool for raising awareness and for mobilizing people became clearer as we used it more and more in schools and in communities.

From 2004, our work moved in two directions. On the one hand, we launched ASER – the Annual Status of Education Report, a nation-wide annual household survey done by district level organizations and institutions. ASER provided annual estimates at national, state and district level for basic reading and maths. This mammoth exercise, reaching almost all rural districts and about 600,000 children annually, was aimed at raising awareness about the need to focus on learning.

Almost simultaneously, in 2007, Pratham started the “Read India” campaign - the fast and frugal solution for the problem that ASER uncovered. In the years that followed, there were many adventures – some done directly with communities like the massive summer camps of

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<sup>14</sup> The April 2004 Seminar article gives detailed examples of the technique as well as data on the many pilots that were done across the country.

<sup>15</sup> For a visual journey and to hear how children’s reading changed see “The Mokhada Tale” <https://www.youtube.com/watch?v=yoUMs-ENLSc>

2008.<sup>16</sup> There were also collaborations with governments in different states and districts. Early state-wide partnerships developed with the governments of Madhya Pradesh and Chhattisgarh. Later came Himachal Pradesh and Punjab. All of these helped us in figuring out how to raise and sustain learning gains and also how to work effectively with governments.<sup>17</sup> The Bihar experiment, which is the focus of this paper, is one of the most recent ones in a series of Pratham-government partnerships on scale in the country.

## MOVING FORWARD

### NUTS AND BOLTS IN JEHANABAD

To understand why the experiment in Jehanabad worked, it is worth laying out the nuts and bolts of what was done, not only inside the school but through the eco system. Several key elements of the entire process stood out distinctly; these were very different from “business as usual”. First, it was essential that at the start of the process, instructors (whether teachers or CRCCs) understood where children really were. A simple reading assessment helped to explore and expose the gap between assumption and reality. The fact that everyone was involved in rolling out the intervention and that teachers, CRCCs and district administration did it together was important. It helped to recognize and “own” the problem.

Second, there was alignment and focus within all layers of the school system. During this time, no other special program or intervention for teaching-learning program was being implemented in the schools. At the district level, the administration could ensure that all major activities with primary schools were aligned to achieving the goals of the reading program. (It is not unusual in India to see several initiatives being simultaneously implemented that dilute the focus of the efforts and cause confusion).

Third, a cadre of academic “leaders” grew during this year. CRCCs had been in the system before but now they actively mentored and monitored teachers, proving continuous on-site support and demonstration in classrooms in their care. The CRCCs had tested out the Pratham methodology themselves by running their own “practice” classes for two weeks. It is only after their “practice classes” were done that the methodology was adopted for wide scale use. All schools and teachers knew that the CRCCs had practised the model themselves before bringing others into the fold.

Fourth, leaving the curriculum, syllabus and textbooks behind was hugely beneficial in this case; it was essential to start from the basics so that the right foundations could be built. Having easy

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<sup>16</sup> In the summer of 2008, Pratham tried the largest outreach to date. In many major states, we attempted to reach every village and mobilize volunteers who would work with children on basic reading and math for at least a month. It is estimated that in that summer we were able to reach over 25 million children.

<sup>17</sup> In the period 2007 to 2010, there was a strong partnership between Bihar Government and Pratham. But this collaboration was focussed on bringing out of school children into school, rather than on learning improvement. However, it is during this period of working together that many of the links between Pratham and the government were formed and became strong. These importance and durability of these ties has certainly helped in Pratham-government joint ventures in more recent times.

materials and simple methods to work with children at their own level, the right level, accelerated the process.<sup>18</sup>

The path forward in Jehanabad was not completely smooth. But since “Padho Jehanabad” was the pet project of the top civil servant in the district it made the bumps a lot easier to handle, especially since the DM was willing to take on each issue as it came along and find a solution for the problem. For example, the CRCCs did their own “practice classes” with not much difficulty but when the time came for them to lead their teachers and schools, there was hesitation and reluctance. CRCCs were not sure if other teachers would listen to them or regard them as academic leaders. They were used to being data-collectors and to some extent “supervisors” or “inspectors” but the leading-demonstrating-mentoring-support role in the teaching-learning sphere was new and unfamiliar. Many of them doubted their own ability to be able to lead. It took a lot of persuasion to convince them about the value of the “trainer-monitor” role in getting things going at the ground level. The usual process was that “resource persons” or master trainers would come and do trainings and then go away. This new role of leading was a lot of work; it meant laying yourself and your demonstrated teaching capabilities bare to the views and opinions of school teachers and head teachers.

There were other potential areas where road blocks could happen. Printing of materials was one such area. Although the government has resources, at times permissions and procedures for procurement get in the way of speedy implementation. In Jehanabad, this phase did not prove to be difficult because the DM realized the importance of having these materials ready on time and in the hands of children. But this could be a huge problem in other cases where the decision-maker was not as committed or where fast decision making was not the norm.

What about availability of adequate number of teachers in schools? The grouping by level approach needed at least two-three teachers who could work with at least two-three different groups of children from grades III, IV and V. Not all schools had sufficient numbers of teachers to deploy in this fashion. A school-by-school analysis of the number of appointed teachers generated a list of schools which needed additional hands. For the “special” hour and a half period in the afternoon, the DM re-deployed teachers from schools nearby that had more staff to the schools that needed them. Again, it was a step that needed a lot of detailed work in planning, execution and repeated follow-ups.

Building the overarching environment to support the new intervention was critically important. Starting from the DM directly addressing all head-teachers to orient them about what was going to happen to senior officers extensively visiting schools throughout the duration of the school year – all helped to create the overall sense that something new and something important was happening. The district instituted monthly parent meetings for all schools. Extra materials were prepared to be used to support such meetings. All in all, the complete commitment of the top administrator helped to drive the agenda and to ensure that the plans that were made were being implemented as effectively as possible.<sup>19</sup>

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<sup>18</sup> For more information on this program, see <http://www.youtube.com/watch?v=XB5Wih-Ng8Y&feature=youtu.be>

<sup>19</sup> Of course, looking back it is easy to see some other issues that were brewing under the surface of the roll out. For example, since the DM took full charge of the program there was not much room for the District Education Officer to show leadership or initiative. Similarly in the rank and file of the education department, those who held the portfolio of “quality” coordination were swept away but many more colleagues were now actively leading the teaching-learning intervention.

## A PARALLEL DEVELOPMENT IN MOTIHARI



While the action was hotting up in Jehanabad, a parallel process had begun in East Champaran - another district in the northern part of Bihar.<sup>20</sup> Here the initiative was being taken by the District Education Officer (DEO) who had a reputation for being academically oriented and who in the past had been part of various innovative education programs.<sup>21</sup> The scale of the pilot in East Champaran was much larger – five blocks were selected by the DEO from different parts of the district. Close to 700 schools and 70,000 children participated in the exercise.<sup>22</sup>

The structure and design of the intervention was very similar to that in Jehanabad but there were a lot of delays in rolling out. The DEO needed to get the green signal from the state authorities within the education department particularly for the funds that he needed to spend on teacher training and on the teaching-learning materials that had to be printed for the participating



children. As the numbers of schools and children was much higher in East Champaran than in Jehanabad, the DEO needed permissions and authorization for the expenditure before any action could start. The state government officials who were to authorize this spending sat on the decision for several months. Finally when Pratham and the DEO were beginning to give up and come up with alternative ways to deal with how to give children reading materials, the authorization came through. This delay meant that the entire program started six months later than planned. Six months is a long time in the calendar of a

school year. By the time the Jehanabad program was beginning to wind down in February 2013, the East Champaran intervention was gearing up to start. The determined DEO took a strong

<sup>20</sup> Sharing a border with Nepal in the north, East Champaran (also called Purbi Champaran) is one of the biggest districts in Bihar. It has 27 blocks and more than 3000 government schools. The district headquarters is called Motihari and often the district is colloquially also called Motihari.

<sup>21</sup> In the hierarchy of the administrative structure of the state in India, the bureaucrat who heads the district administration is from the Indian Administrative Service – an elite cadre of civil servants who are recruited nationally through a competitive process of examinations and interviews. But the District Education Officer is an officer from the state service and usually from the state education department cadre.

<sup>22</sup> For a glimpse of how this program rolled out see <https://www.youtube.com/watch?v=Pv0f9lI3dAA>



stand and was able to force the program to run from January to May 2013 – thus ensuring that there were at least 70-75 working days in which to see results. Again it was the steadfast and sustained commitment of a high ranking district officer that saw the program through. For an ordinary officer, the roadblocks would have been too difficult and too time-consuming to bulldoze in order to move forward.

The data generated by these schools show very promising change (Table 2). In the baseline in January 2013, about 50% of children could not even read simple words. By the end line in May 2013, that figure decreased to under 20%. In January, only about 23% of children could read even a simple paragraph. By May, this number increased about 55%.

Table 2: EAST CHAMPARAN DISTRICT : 5 BLOCKS & 681 SCHOOLS. Std 3-4-5. JAN-MAY 2013 <b>% Children at different reading levels</b>		
Reading level	Pre-test%	Post-test%
Story (Std II level)	0	31.1
Para (Std I level)	22.8	25.5
Word	27.1	24.6
Letter	29.7	14.6
Beginner	20.4	4.2
Total %	100	100
Total tested	55539	50785

#### MEETING WITH THE CHIEF MINISTER:

To gauge progress in Jehanabad, a mid-line assessment had been conducted in December 2012. The results looked promising. December is also the time that the findings from the annual ASER survey across India are compiled. Each year in Bihar, the ASER report was analysed carefully. In fact the Chief Minister who was well known for his interest in education had released the report several times in the state. Given these facts, it was decided that we should seek a meeting with the Chief Minister of the state, Mr. Nitish Kumar. The plan was that we would discuss the findings from the latest ASER report and also present the promising home-grown solution from Jehanabad. The DM of Jehanabad was prepared to speak about the model and its effectiveness and about the need to do such work in more districts.

At the time, Mr. Nitish Kumar was serving his second term in office. While his first election in 2005 had been closely fought, five years later in his second round in 2010 he had won the elections with a very large majority. Education, especially school education, had been high on his

agenda even in the first term. Much had happened in Bihar in the first five years of his tenure to repair some of the damage that had been wreaked by the many years of neglect prior to his time. Big expansion in schools, massive recruitment of teachers, substantial reduction in children out of school, incentives like bicycles to girls for completing elementary education – all these were part of the comprehensive strategy of the Chief Minister to build human capital in the state.<sup>23</sup>

The Chief Minister was also familiar with the ASER report. In fact, his tenure coincided exactly with the start of the ASER report. He had released the Bihar version of the ASER report twice in Patna - both times highlighting the importance of evidence and the value of external and independent assessments of the government's work.

*On a cold evening in early January we assembled in the Chief Minister's home office. It was a small group but each person's presence was important. Apart from Mr. Nitish Kumar, there was his principal secretary (who had previously been the head of all education activities in the state government) as well as the two top bureaucrats who were then in-charge of education in Bihar. The DM of Jehanabad had also been invited to the meeting. There were two of us from the Pratham team and we were accompanied by a senior ex-civil servant who had retired as the chief secretary of Bihar and who subsequent to retirement had been observing Pratham's work closely. (The only significant person missing from the room was the Education Minister of Bihar. He was not in Patna at the time.)*

*I showed the Chief Minister a sneak preview of the ASER 2012 results both for rural India and for Bihar. He listened carefully and looked closely at the numbers. Softly, he expressed disappointment on the fact that there had not been much progress in basic reading or arithmetic over time in his state. Next the DM spoke about the Jehanabad intervention. Everyone listened to him quietly. His passion and energy came through very clearly in the way he spoke and in what he spoke about. The Chief Minister noted that in the baseline in Jehanabad close to 60% children in grades 3 to 5 were not even reading words. With a slight twinkle in his eye he asked the DM, "How many DMs are there like you in Bihar?"*

*The conversation over the next hour was wide ranging. At our level, we felt privileged to even be part of such a conversation. Everything was discussed from the need for long term institutional development to short term campaigns that energized the system. What goals to set and how to achieve them – this was debated among the officials. The Chief Minister's views on the critical importance of building human capital were well known. In almost all his public speeches he would talk at length about schools and education especially for girls. What was most striking about the meeting was the openness and honesty with which all present could express themselves and the patience with which the Chief Minister listened to the different points of view. For a topic close to his heart, he had all the time in the world. The discussion moved from the immediate challenges to more long term one; the conversation touched on possible pathways forward. Interspersed between considerations of politics, policy and practice, were the Chief Minister's memories of himself as a student in a small town in Bihar.*

*After almost two hours of talking, the meeting wound up. It had gone well beyond the allotted time. Perhaps this was because education was very close to the CM's heart. It was already dark outside. As we left the room, he turned to us outsiders and with a light smile he said "You people*

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<sup>23</sup> Pratham's work in Bihar had begun in 2000. Among other things, over the years, Pratham had worked closely in partnership with the government in a state wide program for bringing out of school children to school.

*enjoy your work, don't you?" And then with a thoughtful pause he added, "Do you think our departments will be able to do what needs to be done?"*

## ROLLING OUT

### SCALING UP

Every year in north India, as the cold weather recedes, schools begin to get ready for the end of the school year. Around this time, education departments in states and districts get busy putting plans in place for the next year. This is all part of the usual annual calendar of activities. As the 2012-2013 school year inched towards conclusion, after much internal deliberations, the state government of Bihar came forward with an outline of a plan that they called "Mission Gunwatta" (Mission Quality). The Mission Gunwatta policy document started with a summary of the ASER results and made a bold statement about the need to achieve basic learning goals in reading and in arithmetic.<sup>24</sup>

In early April 2013, the state government called a two day meeting of education department officials from all districts to discuss the Mission Gunwatta plans. Some external organizations like Azim Premji Foundation and Pratham were also invited as were eminent educationists. Guests were given the stage to put forth their views. Different districts made presentations about interventions that they felt had succeeded in improving children's learning. Teams from Jehanabad and East Champaran described their experiences and outlined their achievements in raising basic learning outcomes like reading. The teaching-at-the-right-level model from Jehanabad and East Champaran got a lot of visibility in the state.

The two day meeting culminated in the announcement of the new policy. As the 2013-14 school year started, a number of the elements outlined in Mission Gunwatta began to roll out. For example, specific teachers were identified for Grades 1 and 2 and were trained. The school report cards (for children, for teachers and for schools) were dispatched to the schools. School monitoring formats for different levels of education officials were also put into the system. The "teaching by level" notion was discussed widely. Documents outlining the approach were circulated in trainings of block level officials. All of the pieces of the policy were given equal importance. In this context, it was clear that the "teaching-by-level" piece was one among several other programmatic elements that had to be implemented. That children should be grouped by level was clear but concrete directions on how to group children and what activities to do with which group of children were not sent out from the state level department to the districts.

Rather than go through the state government to districts, Pratham decided to deal directly with districts. Our past experiences with Jehanabad and East Champaran had been very productive and so we decided to use this opportunity to interact with districts across the state. We entered into serious discussions with districts who were keen to work in a focussed manner on issues of learning and were willing to go beyond the usual mandate of improving the functioning of the

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<sup>24</sup>In fact the early public documents available on Mission Gunwatta stated learning goals very clearly. The documents stated that for that year the goal for Grade 5 was to ensure that every child could read and do math at least Grade 2 level. For Grade 4, the aim was have at least 75% children reach Grade 2 level and 50% children in Grade 3 reach Grade 2 level. Of all statements from central and state governments about learning outcomes, this is perhaps the clearest articulation of what the problem is and what needs to be done. See document on Bihar Government Education department website. In this document written in Hindi, page 8-9 state the learning goals in detail. <http://educationbihar.gov.in/LetterPdf/01Apr201373217.pdf>

system. In each case, someone at the district level – either the district magistrate (DM) or the district education officer (DEO) had to be keen to take and if possible lead the initiative. Two elements were important for us in these discussions. First, the district had to have some commitment to focus on improving learning. Second, the district had to be willing to try teaching by level as the approach to achieve the goal and agree to all the steps that were involved.

Discussions, negotiations, persuasions took place in the early months of the 2013-14 school year. By August 2013, about 12 districts had agreed to work in a systematic and focussed way on improving learning based on the the “teaching-at-the-right-level” intervention outlined in the Mission Gunwatta scheme.

We did not go to any more districts. The 100 member Pratham team that was already in place in the state, was then deployed to work closely with government counterparts in the chosen districts. Each Pratham team member was allocated two blocks (200 to 300 schools) where they partnered with the CRCCs who were responsible for schools in these blocks. Like in Jehanabad and East Champaran, the process started with the orientation and training of CRCCs, followed by “practice classes” conducted by this cadre of the government. Pushed by Pratham teams, in many districts, the process of doing baseline assessment of children with the simple ASER tool was also in progress. All of this was noted and agreed upon in an informal MOU document between Pratham and the government at the state level. The state agreed to print the child-wise teaching-learning materials that were needed and also allowed the districts to spend training funds for the trainings of cluster coordinators and teachers that was needed.

While the Mission Gunwatta plan was meant for the entire state, Pratham’s attention remained focussed on the districts that had come forward to partner with us. Anecdotal experiences from other districts suggests that specified time was being put aside for special attention to build basic skills for children in Grades III, IV and V and some kind of grouping was being done. But clear instructional guidance of what to do with level wise groups was not being given to schools. The focus on the teaching-by-level activity varied considerably across districts; in some cases there were teams that took local and contextualized steps (like in clusters in Jamui) but in other cases this entire effort was diffused and perhaps treated as a passing whim and fancy of the senior officers at the state level.<sup>25</sup>

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<sup>25</sup> The state government had instituted an academic monitoring committee of external experts. Members of this committee (of which the author was also a member) sent in field reports from time to time to the chairman. Some of the comments in this section are based on these reports, discussions with committee members, the author’s own field visits and inputs received from Pratham team members.

Figure 2



Total districts in Bihar = 38

Total districts in which Pratham is partnering with government = 12

This includes all government elementary schools in East Champaran, Darbhanga, Supaul, Katihar, Rohtas, Gaya, Nalanda, Kishanganj, Purnia, Jehanabad, Jamui.

In the districts where Pratham is actively partnering:

- Total number of schools in these 12 districts = 24131
- Total number of CRCCs trained = 1676
- Total number of teachers trained = 49342
- Total number of children reached = 1.64 million

The roll-out plans in the partnership districts began in full earnest. By October 2013, in most of these districts schools had done the baseline assessment for children in Grades III to V. CRCCs had completed their “practice classes”. Now all that was needed was the package of teaching-learning materials. The entire printing was to be done centrally – materials for several million children were to come from Patna – the state capital. Pratham had provided print-ready copies of the materials and was also tracking the printers almost on a daily basis. But there were delays. We were very clear – there was no point in conducting training of teachers unless teachers could have the materials in their hands at the time of training. The appropriate use of materials was a key part of the teaching-by-level method.

In Bihar, every year there is a holiday period in the months of October and November. Between Dusshera and Diwali (in fact till Chhath puja) there is an interruption in the school calendar - almost a full month interspersed with holidays. Usually school activities slow down in October and only pick up again in mid-November or later. The festival season in 2013 passed and even by the end of November there was no sign of the printed materials arriving in the districts.

Meanwhile, other activities were picking up steam in the system. For the last few years, as a transparency measure, the state government had taken to distributing all the entitlements

(scholarships, uniforms, bicycles) in one public event on a given day in school. This date is announced in advance so that parents and other community members can attend. Usually this distribution is done in December-January. There is considerable preparation to be done for this event especially by the CRCCs. One of the messages that the state government wanted to send out during this distribution of entitlements was that only those who have 75% attendance are eligible. This means that, painstakingly, attendance records of every school have to be checked and made ready for scrutiny if needed. All officials including CRCCs get busy with this work.

*There was a big argument going on outside the school gate. Parents, mostly mothers, were arguing with the teachers. This government primary school stood at the edge of a mahadalit tola in a village in Gaya district in Bihar.<sup>26</sup> I was visiting schools in this cluster with the CRCC – an enthusiastic middle-aged gentleman. We had just been inside the school in the Std IV classroom. This cluster had already started doing “teaching by level” activities after lunch every day. The teachers working with the groups were newly recruited and were happy with what they had been able to achieve in the last few weeks. Several children came forward to read aloud, proudly showing off their newly acquired reading skills. In particular, one little girl had impressed me very much. At the beginning of the school year she could barely read. But now she was able to tackle an entire story book. The Std IV teacher was proud of her accomplishments too. She told me the story of this girl as she walked me out of the school towards the gate. Hearing the loud voices, we all stopped to figure out what the noise near the gate was all about.*

*The argument was about children’s attendance in school. Schools had been told that only those children who attended school for at least 75% of the time would get entitlements like uniform and scholarships. The mothers at the school gate were aggressive and vociferous. The head teacher was trying to explain that it was very important for children to attend school regularly. The Std 4 teacher pointed to a lady in the centre of the fracas. “That is the mother of the little girl who impressed you,” the teacher murmured.*

*I stepped into the conversation. I asked the mother of the little girl what she was upset about. The mother loudly complained that her child was not getting her due share of school benefits. I said “But your child is getting something very valuable from the school. Unlike the uniform or the money that will finish, this one will never finish.” The lady looked at me belligerently. “What is that?” she demanded to know and continued to complain. “The school is useless. They eat up all the money.” Unfazed I continued. “Do you know that your daughter has learned to read? And now she can read very well.” The mother looked unimpressed. “What use is that”, she said and turned back to continue her quarrel with the school’s teachers.<sup>27</sup>*

*The head teacher and the young teacher both shook their heads and turned back into the school. The CRCC turned to me and asked, “How do we get mothers like this one to support what their children are doing?” We had started travelling to another school in the same panchayat. I congratulated him for having trained the teachers and for having helped them to achieve some*

<sup>26</sup> Mahadalit refers to a very backward (socially) caste. Tola means hamlet.

<sup>27</sup> This is an extract from a forthcoming chapter by the author in a book that is due to be published soon. *Claiming India From Below: Citizen Activism and Democratic Transformation* by Vipul Mudgal (ed) New Delhi, Routledge (In Press)

*degree of success with their children. The CRCC looked worried. “Many of the teachers in my cluster are young and new. We have to work hard with them to make sure they remain focussed on their children and on learning and not get disheartened by what parents and community members do.”*

*We reached the next school. The head teacher came out to greet us. He was happy to see the CRCC. He had something he wanted to discuss. While I went into the classes to chat with children, the two men sat huddled together. Later I came to know that the state government had issued instructions to clean up all school accounts going back five-six years. This too had to be done in the next few weeks. This headmaster was struggling to sort out how much had been spent on school maintenance and how much on school development in the years before he had taken charge. The only person he could turn to was the CRCC.*

*Later on in the day, the CRCC frankly discussed with me how he spent his time. According to him, enabling teachers to teach better, to support what they do in the classroom is what he would really like to do. Roaming around in his area all day with him and interacting independently with his teachers and students, I had a sense that our CRCC had indeed made good headway on this front. But, he felt that all these other administrative issues took up a lot of time. “In review meetings at the block level”, he said ruefully “we are never asked how many children have learned to read and how many can recognize numbers”.*

Eventually by December, printed materials for children began to arrive in the districts. This implied that teachers’ training for “teaching-at-the-right-level” could begin by January 2014 but only after the distribution of benefits was done. By now, there were only two months left in the 2013-14 school year. Regardless of the time frame, the Pratham teams got busy with their district counterparts in rolling out grouping and teaching in the schools. Perhaps recognizing the need for greater momentum, the state government re-oriented the district and block level officers on the key activities to be done in Mission Gunwatta. This time the focus on the learning component was stronger – the need to build basic reading skills was emphasized. A small booklet was also circulated which reinforced this point. From the April session onwards till the summer holidays in end May, it was decided that not only primary schools but even grades VI, VII and VIII in upper primary schools would pay attention to building basic reading skills and devote considerable time to it. (But despite this focus and apart from distributing a small booklet, no clear instructions were given or guidelines issued on how to do this.)

Interestingly, during the first year of Mission Gunwatta, in the highest level of Bihar’s bureaucracy there were two prevailing views about what was of highest priority for improving learning; both sides acknowledged the importance of improving learning but the actual strategies were guided by two distinctly different approaches.<sup>28</sup> Even early on in the process of deliberations at the state level, these differences were visible. This division continued and in fact deepened as time went by. The first “camp” accepted the reality of the learning crisis, supported the importance of building basic skills, and grouping by level as a sensible way to go about doing this. However, at the same time, there was also a belief that many of the other elements of Mission Gunwatta need to be implemented simultaneously as well. Further, it was felt that without clean

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<sup>28</sup> Both sides also agreed that assessment could play a role in understanding the situation. In fact in 2014, two major state level learning achievement surveys were carried out. One was commissioned by SSA and the vendor chosen via a bidding process. The other was discussed in collaboration with the Education Department, SCERT and UNICEF and was carried out jointly by Pratham and the Government of Bihar with support from UNICEF.

“governance” the system would get stuck. The impetus to clean up past records was part of an attempt to straighten out processes that may not have been followed properly in the past.

The second camp did not see the learning crisis as a structural problem, but instead viewed it as a result of poor school functioning. In fact, there was resistance to the notion of “level wise teaching” and the worry that this would “label” children. The other understated resistance was about the role of Pratham (or perhaps that of any outside agency) in influencing activities of the state education department.

These varied perceptions and varying priorities percolated to the ground in different ways. As one CRCC succinctly put it, “Sabka ek maalik hai. Par hamare hazaar malik hain”. (Everyone has one master (this is a common saying where master refers to God). But we have a thousand masters.)<sup>29</sup>

#### POLITICAL CLOUDS

Floating above and flowing below the happenings in the school system, were the political undercurrents in the state. Undoubtedly, the political dynamics in Bihar too have played a major role in shaping the opportunities and the challenges in education through the last decade. In the first term of the Nitish Kumar government (2005 to 2010), the strong focus on education was accompanied by clear, concrete and uncontroversial goals. Big and chronic input gaps had to be filled – more schools had to be built to universalize provision, more teachers were urgently needed. Bihar had the highest number of out of school children. Many things had to be done to get them into school. All of them in a hurry. Textbooks had to be distributed on time. Midday meals streamlined and improved, drinking water provided and toilets constructed. The famous cycle scheme for girls (and later for all graduates of grade 8) was introduced in this period as well.

Available data shows the huge strides that Bihar made in “catching up” and dealing with the accumulated years of backwardness and neglect. In 2005, there were 52,654 government schools. By 2013-14 the number had reached above 70,000. Children’s enrolment in school jumped from 12 million to 21 million in grades from 1 to 8. The number of government teachers doubled from 162,522 to 364,715.<sup>30</sup> If you look at ASER data, you will see one of the biggest declines in the number of children, especially girls, who were out of school in perhaps one of the shortest periods of time. Unprecedented numbers of teachers were recruited. No cost or effort was spared to get work done in education.

Accompanying the high political priority given to school education, there was an unprecedented openness in accepting problems and welcoming those who wanted to help. For example, we as Pratham worked in partnership with the state government for three to four years as partners in implementing the government’s comprehensive strategy to mainstream out of school children.

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<sup>29</sup> A detailed study of “frontline” government workers in education has been carried out against the backdrop of the unfolding story of Mission Gunwatta in Bihar in the last few years. This research provides more food for thought of how to unpack implementation and analyse the challenges. The study has been conducted by Accountability Initiative. See Yamini Aiyar, Ambrish Dongre and Vincy Davis. "Education Reform, Bureaucracy and the Puzzles of Implementation: A case study from Bihar". Accountability Initiative Working Paper Series, August 2015. A version of this study was also published in the journal Caravan in March 2015. See <http://www.caravanmagazine.in/perspectives/post-office-state-education-bureaucratic>

<sup>30</sup> These numbers are taken from the DISE State Report cards for Bihar 2005 and 2013-14.



There were Pratham team members for each level in the state, district and block government teams and they worked as one team. The state government financially supported large teams (several hundred Pratham people). There was continuity in leadership. The same set of bureaucrats and civil servants who worked well together stayed at the helm of affairs for several years at a stretch. There was continuity also of goals, plans and implementation targets such that tracking progress over time was possible. There seemed to be alignment of purpose between the education minister and the bureaucrats, and between the education minister and the chief minister. The steady leadership was able to tackle the proverbial “low hanging fruit”. Although some analysts claim there was mismanagement and poorly designed processes, perhaps this is an inevitable part of moving fast and on scale with authority delegated to different departments.

After his first term, Nitish Kumar was re-elected with a resounding majority. Although it was a coalition government (the two parties were JDU and BJP) publicly much of the credit was given to Mr. Nitish Kumar. Women voted in large numbers and gave Nitish Kumar a larger share of the vote than ever before. Political analysts and social observers claimed that the pro-female schemes and policies had influenced the voting behaviour of women. There can be no doubt about the popularity of the bicycle scheme for girls. Equally important were the efforts to bring girls back to school, female focussed adult literacy campaigns, reservation for women in panchayats (village councils) and strong support to formation of women’s self-help groups.

However, in the second term of the chief minister, political clouds darkened the sky. Rifts appeared within the ruling coalition as the general elections began to come closer. The chief minister’s attention was claimed by political matters perhaps to the detriment of governance, administration and focus on development. In June 2013, Nitish Kumar and his party left the coalition. This led to a huge upheaval in the state with much realigning of power bases. To compete with BJP in the general elections, Nitish Kumar’s party JDU joined hands with RJD (another regional party that had traditionally been their adversaries).

Some months later, in May 2014 when the BJP had sweeping victories in the parliamentary elections, Nitish Kumar quit the chief minister’s post and installed a different person to lead. This led to even more uncertainty and indecision. The Education Minister changed. Bureaucrats were replaced and there was confusion over priorities in the education department. For instance, the political leadership began to raise questions about why there were attendance norms to receive entitlements. There were upheavals with regard to transfers and postings. Important positions in the education department remained unfilled for periods of time (something that was unheard of in the earlier period of Nitish Kumar). There was hardly any attention being paid to even routine matters within the education department. At all levels, everyone was waiting to see how the political story would unfold.

After a great deal of internal controversy, as well as legislative and political manoeuvring, the person who had been installed by Nitish Kumar was removed. The former Chief Minister came back to helm of affairs in February 2015 and quickly brought his team and his Education Minister back into the game. At the time of writing this piece, the battle for power and leadership is on in full earnest. The state goes to vote for a new state legislature in November 2015. Very high stakes election campaigns are already underway. The battle lines are clearly drawn and being bitterly fought. Global and national spotlight is on Bihar as the Prime Minister and his party and the Chief Minister go head to head. The world is watching to see who will win. In a way, the decision will also carry a message for school education. Will Nitish Kumar’s comprehensive strategy for building human capability in the state reap dividends? Or not?

In the months leading up to the high profile and intensely competitive elections, many political and perhaps populist decisions have been taken that will have an impact on the school system in years to come. For example, contract teachers went on strike for two months bringing schools in the state to a standstill. Eventually the government gave in and agreed to the demands of the teachers for higher payment and regularization. Student entitlements, which are usually distributed in the winter months, have been distributed early in the school year. Attendance norms have been dispensed with. Promises for building high schools in every panchayat are being made. These major decisions about inputs, entitlements and job security which are being taken at the present time will have long-lasting implications for the schooling ecosystem. However, in the rush to have popular measures in place – perhaps ones that are calculated to get votes, there is no mention or action announced for improving basic reading or arithmetic for Bihar’s children.

Once we are past the state elections in November 2015 it will become clear what the newly elected government will choose to do. But regardless of who wins and who loses, the 2015-16 school year will be one in which no major change took place to improve children’s learning.

#### EVIDENCE FROM THE INTERVENTIONS

Has this “teaching-at-the-right-level” innovation been effective in Bihar? There was no independent or external impact evaluation that was carried out in the state during this period. So it is a challenge to bring out evidence of impact. Let’s quickly look at what can be extracted from the data that is available. Much of this data is available for the 12 districts in which there was a strong Pratham presence.

There are three possible sources of evidence:

- Baseline and endline program data from schools
- Data from a one-time study of student achievement
- Comparison of ASER data from 2013 and 2014

School based program data: The first piece of data is from the schools themselves. All schools did a baseline and end line during the 2013-14 school year. The data collected by schools and teachers shows a substantial improvement in both basic reading and maths. However we do not have any “control” schools to compare these results to.

% Children at:	Baseline %	End line %
Story level (Std II level)	23.1	40.2
Para level (Std I level)	19.3	25.4
Word level	23.4	20.3
Letter level	22.5	10.9

<sup>31</sup> Total number of schools included here = 15870

Districts: East Champaran, Darbhanga, Supaul, Katihar, Rohtas, Gaya and Nalanda. Data from all blocks from these districts except 6 blocks included here. Data collected at school level by teachers.

Beginner level	11.8	3.2
Total %	100	100
Total children tested	1,444,992	1,374,472

In the beginning of the Mission Gunwatta initiative, 42.4 % of children enrolled in Std III to V could read (either at para level or at story level). This number increased to 65.6% by the end of the 2013-14 school year. The proportion of children who could not even read words dropped from 34.3% (about one third of all children) to 14.1% (about one in every seven children) (Table 3).

	Baseline %	End line %
Division level	19.9	36.8
Subtraction level (Std II level)	20.1	25.1
Addition level	21.1	19.4
Number recognition 11 to 99	17.8	11.5
Number recognition 1 to 9	15.3	5.6
Beginner level	5.8	1.5
Total %	100	100

The progress in arithmetic is also impressive. At the beginning of the intervention, over 20% could not recognize numbers beyond 10. This number has come down to less than 8% by the end of the school year. The proportion of children who can at least do subtraction (a skill expected by the end of Std II) has gone up from 40% to 61.9% (Table 4).

Student achievement survey data: The second piece of data is from the last week of May 2014 (the week before summer vacations started), when an “external” team of evaluators from the district institutes of teacher training and from Bihar government did a school based assessment (oral and written) of children in a sample of schools from each district across the state. This evaluation was supported by UNICEF and was targeted at children in Std II, IV and VI. It was led by the state level government council for education training and research (SCERT) and Pratham/ASER Centre. For some of the grades, ASER tools were used.

Some data from this evaluation in May 2014 can be compared to the data collected by school teachers (baseline & end line) through the school year. Std IV is a grade in which the evaluation was done in May 2014. And Std IV was a grade which participated in the Mission Gunwatta

“teaching-by-level” intervention. There is an overlapping sample of 287 schools from the 12 districts in both data sets.

Overall, the data collected by teachers in May 2014 is very similar to that collected by external evaluators in the same schools also in May. The end lines in both cases show that approximately 60% children are reading either at the para level or the story level by the end of the year as compared to the baselines (done by teachers in January) which showed the level of “readers” (para + story) to be around 35%. More importantly, the baseline showed that in these schools, almost 40% children could not read beyond letters in January. That figure in May ranges between 17-27% depending on which data set you look at.

ASER 2013 and ASER 2014: The third piece of evidence: Can the national annual ASER data from the last few years shed any light on what has been going on in Bihar? Each year since 2005, ASER (the Annual Status of Education Report) has been carried out across all rural districts in India. This data provides estimates for basic learning levels (reading and arithmetic) for a representative sample of children from every district. Each year data for a cross-section of children is collected in ASER. Comparisons across years can be done using artificial “cohorts”. Using these representative samples of children we can track cohorts over time. For example, the cohort that was in Std III in 2013 will be in Std IV the next year and the cohort that was in Std IV in 2013 will be in Std V in 2014.

Comparing reading data from ASER 2013 & ASER 2014 we look at the 12 Pratham-Bihar government partnership districts for Mission Gunwatta and see if these perform better than all the other districts. The cohort that was in Std IV in 2013 has moved to Std V in 2014. The ASER data for these districts for 2013 and 2014 shows that in the 12 districts there has been a 17.7 percentage point change in “readers” (para+story) as compared to a 12.6 percentage point change in “readers” in the other districts. Similarly there is a greater decline in the 12 districts as compared to the other districts in the percentage of children who cannot read more than letters.

Year	Type of district	Class	Reading levels					
			Beginner	Letter	Word	Para	Story	Total
			%	%	%	%	%	%
2013	12 districts	Std IV	16.5	24.2	16.2	18.4	24.7	100.0
2014	12 districts	Std V	9.6	14.1	15.5	16.7	44.2	100.0
2013	Other districts	Std IV	12.8	24.3	15.8	18.3	28.8	100.0
2014	Other districts	Std V	10.5	16.6	13.2	14.9	44.7	100.0

Table 5 continued		
Percentage point change over time		
Change	Para + story	Beginner + letter
12 dists Std IV to V	Increase	Decrease
	43.2	40.6
	60.9	23.7
Other dists Std IV to V	47.1	37.1
	59.7	27.1

A similar exercise was carried out for arithmetic. Here two “cohorts” are tracked:

- Those who were in Std III in 2013 and then in Std IV in 2014
- Those who were in Std IV in 2013 and then in Std V in 2014

We compared the performance of these cohorts over one year in the 12 Pratham-partnership districts versus the others in terms of the increase in the ability of children to do subtraction problems. For the 12 districts, 37.8% of children who were in Std IV in 2013 could do subtraction problems. This figure rose to 53% by the same time next year when these children had reached Std V. Similar figures in the other districts were 38.4% (Std IV in 2013) to 49% (Std V in 2014).

Teasing out “impact” from available data is not the best way to understand what happened. On the other hand, it is not easy to extract the ideal kind of data needed for analysing “impact” when working in an evolving program with governments. What is possible to say is that available data points to progress in learning and wherever comparisons can be made, there is indication that the Pratham-partnered districts were doing better than the others.

## **STEPPING BACK AND THINKING AHEAD**

### THEORIES OF CHANGE AND IMPLICATIONS FOR PRACTICE

If you have been watching India for a few decades, then it is time to take a deep breath and lean back and look at patterns and trends. As far as school education is concerned, perhaps you will feel the beginnings of a “climate change”. For the last ten years, the challenge of moving the focus from “schooling” to “learning” has felt like a boulder being pushed uphill on a steep slope. But now, albeit incrementally, the situation seems to be changing. Although debates will continue to rage over definitions of learning, over what kind of learning is important to measure, and about what the best methodology to do it is, there is a growing acknowledgement even within the education establishment and in the public at large that the status of children’s learning is far from satisfactory and something needs to be done to change it.<sup>32</sup> Thus, at long last, interest is

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<sup>32</sup> The Twelfth Five Year Plan which was ratified by all chief ministers in December 2012 has a chapter on education which strongly emphasized the importance of focusing on learning outcomes.

slowly increasing among policy makers, planners, practitioners and bureaucrats in “what works”.<sup>33</sup>

Like in many other places, Bihar too is in the early stages of figuring out how to improve learning. But in the gamut of many things that still have to be done in this economically backward state, raising children’s learning is perhaps the most crucial one. Despite many improvements in inputs and infrastructure, there are still major gaps and weaknesses in key areas of how the education system functions. But still, if we were to think about what is currently known about how to improve children’s basic learning in a country like India, what will we find?

Sorting through recent evidence and looking carefully at current experiences both in India and in other countries, several possibilities present themselves. Many strategies are possible as the state (or even the country) moves forward. But the big question is which path(s) to take and what to prioritize. Underlying each possibility or strategy is a “theory of change”. A theory of change basically states a problem and traces pathways to the solution – that is, the links between what is the problem, what will be the main driver for the solution, what will lead to what and what will be the outcome.

On the platforms of policy and practice, competing theories of change are jockeying for first place in “what works”. Each of “these interpretations have hugely different implications for policy design”.<sup>34</sup> Each theory of change leads to its own prioritizing of what is important to do first, where to begin, where scarce resources (money, people and time) should go and who will push whom to do what. Each theory of change therefore has very strong implications for implementation. (Interestingly, not all of the theories of change are backed by evidence but that does not seem to matter when people take decisions for millions of children in India.) At the risk of sounding simplistic, let me outline some of these competing “theories of change”:

- “Unless poverty decreases, not much can change”. There are those who think that factors outside the education sector – poverty, malnutrition, income and livelihood in the family, opportunity costs of children’s time, need for skills and other factors influence children’s schooling and learning. Unless these conditions change there cannot be fundamental change in outcomes within the education system.
- “Get inputs in place and then things will be fine”: Proponents of this view will argue that if the norms of the Right to Education Act are implemented, the quality of the education system and its outcomes will improve. Additional resources will help – such as more expenditure, more teachers, more teaching-learning materials.
- “If only everyone did their work, everything would improve”: Tighter monitoring and administrative control would lead to a much better functioning system. For example preventing or punishing teacher absenteeism would have a positive effect on outcomes. Or tightly run “inspection” systems would lead to better school functioning.
- “If people had information and “voice” schools would deliver better services.” “If teachers had the right incentives they would teach better”. “If only we had systems to recruit the right kinds of people”: This third broad theory of change straddles a range of issues to do with governance, incentives and accountability. It also includes those who argue for

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<sup>33</sup> This section is based on an earlier piece written by the author in Ideas4India in December 2013.

<sup>34</sup> See Walton and Mukerji 2013

better incentives - teacher contracts, performance pay, compensation structure, rewards, recognition, and so on.

- “Teachers are not capable”: This view emphasizes the need for deep and long run investment in developing teacher capacities through strengthening of institutional ability for teacher pre-service and in-service training and reworking teacher preparation curriculums.
- Finally, there is the notion of “misaligned pedagogy”: The believers of this theory of change argue that fundamental changes need to happen in the organization of teaching-learning – serious reworking and structural change are needed inside the “black box”. The core idea here, like that in Pratham’s “teaching-at-the-right-level”, is to free teaching-learning from the age-grade curriculum constraints of the education system. Children need to be taught from where they are and enabled to reach where they need to be. Curriculum needs revision, today’s misaligned pedagogy needs to be fixed, learning goals need to be clearly articulated and teachers supported to reach them. (The Jehanabad and East Champaran models clearly fall into this theory of change.)<sup>35</sup>

Even these brief summaries outline how each “theory of change” is accompanied by quite different pathways of action. Each one has implications for what resources will be used by the system in what way and when. Now that the state system is gearing up for action, it is not uncommon to have many theories of change operating simultaneously within the same state without an explicit acknowledgement that there may be competing priorities and pathways. Since so much needs to be done, a lot of things begin to be done simultaneously. This leads to confusions in implementation, dilution of effort and eventually leads to weak outcomes, which in turn lead decision makers and implementers to get disheartened and demoralized. Acknowledging which “theory(ies) of change” should operate and balancing between them is critical for the success of implementation.

To a large extent, the “Pratham-Jehanabad model” of “teaching at the right level” can be seen as an example of a disruptive pedagogic innovation. The model evolved as a practical response to deal with the large numbers of children in primary schools who do not have basic skills of reading or arithmetic. This is the reality in Indian primary schools. The effectiveness of the approach is largely due to the fact that it upturns standard practices that operate in the system. Two major pillars of how schools are organized are quietly cast aside. First is the usual age-grade system of teaching. Instead of clubbing children by age and grade, this approach groups children by their level of learning, irrespective of grade. Second, here teaching is not anchored by grade level goals and expectations, class-wise curriculum, content or textbooks. Instead the entire focus is on building basic skills of reading, understanding, expression and arithmetic. A series of rigorous

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<sup>35</sup> One of the strong criticisms of the Pratham approach comes from the education establishment of past years – the experts who shaped the 2005 National Curriculum Framework. These critics charge that Pratham has focussed the entire educational discourse very narrowly on outcomes – minimal learning outcomes. Their view is that there are many things in the education environment that needs to change before substantial changes in teaching practices and in patterns of learning can be expected. These critics will also state that a comprehensive vision of education is needed to drive long run change. The translating of this vision into practice is the job of implementers. Pratham is not opposed in any way to a comprehensive view of teaching or learning. But what we stress is that without foundational skills like reading, this vision will be unattainable. We will argue that change needs to start from where the reality is today, with methods and practices that are possible with the resources and manpower that is available right now. The system, including parents, teachers and children, need clear, achievable goals to galvanize the energy to move forward.

impact evaluations in different settings has proven the effectiveness of this approach to teaching-learning at least in the Indian context.<sup>36</sup>

Tracking the path of this disruptive pedagogic innovation in Bihar from its introduction in 2012 to the current time has been an interesting exercise. Any intervention is also embedded in a larger web of cross-cutting interests and institutional structures. On a smaller scale like in Jehanabad or East Champaran, an individual at the right level of authority can maintain the momentum for at least a school year. But even there for the approach (the goals and the activities) to become ingrained into habits of people and workings of the system may require longer run, intensive work, digging deeper into the roots of people's perceptions and practices. Detailed studies of government officials at different levels of the system – school, cluster, block, district and state – provide vivid illustrations of how different people react to a new intervention especially a disruptive pedagogical innovation like “teaching at the right level”.<sup>37</sup>

Two recent books – Banerjee and Duflo's *Poor Economics* and Pritchett's *Rebirth of Schooling*, lay out how education in India can be characterized as “teaching to the top”. These researchers also stress the fact that although much is known about what has been done and what worked in experiments and evaluations, much less is known about how to sustain such changes on a large scale or how fundamental change can get embedded in systemic change.<sup>38</sup>

Designing workable/ implementable strategies needs a strategic balance of experience and evidence. In rolling out large-scale programs, a critical factor is the need to remain open-eyed and open-minded as the hard work begins on the ground. Each successive round of implementation improves if it incorporates learnings from the previous phase. A policy that is not implementable is not a good policy.

The longer run solutions may require fundamental re-thinking of what we want children to learn, of how to reorganize our existing systems/ resources to achieve learning goals, and of how to use evidence on ‘what works’ to implement effective strategies more widely. We will need to continuously experiment on scale with clearly articulated goals and theories of change strategies to forge the way forward.

In conclusion, there is no “silver bullet”. But there are wars. And in wars there will be bullets. But it is not the bullet that wins the war. What wins the war is knowing who will fire, what and whom to fire at, when to fire and what to do next in what circumstances. Not all bullets are the same. But even if they were, each war is different. Each time the entire strategy has to be rethought and reworked. The war to improve learning has just begun. And as we fight the war, we will learn a lot that will take us to the next stage of our understanding of what can be done to help children learn better.

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<sup>36</sup> See recent forthcoming paper by Jim Berry et al that puts the details and evidence all of the randomized control trials done on Pratham programs in the last decade in one place. Individually all of these are available on the JPAL website – [www.povertyactionlab.org](http://www.povertyactionlab.org).

<sup>37</sup> See research by Yamini Aiyar and her Accountability Initiative team on reactions and perceptions about Mission Gunwatta within the education system. Citations given in earlier footnote.

<sup>38</sup> Lant Pritchett 2013. *The Rebirth of Education*. Centre for Global Development. Washington DC. Abhijit Banerjee and Esther Duflo 2011. *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. Public Affairs.





Primary school in Jiradei block. Siwan district. Bihar