POLICY BRIEF

Key Findings from the Study
Inside Primary Schools: Teaching and Learning in Rural India

In the last two decades, impressive strides have been made in India in terms of providing school buildings, classrooms, teachers, textbooks and other facilities. These have been matched by very significant improvements in enrollment. All available data sources agree that well over 95% of children in the 6–14 age group are now enrolled in school. However, the evidence also suggests that children's learning levels are far from satisfactory and that considerable work still needs to be done to guarantee *learning* for all children.

Supported by UNICEF and UNESCO, this longitudinal study tracked 30,000 rural children studying in Std 2 and Std 4 in 900 schools spread over five states (Andhra Pradesh, Assam, Himachal Pradesh, Jharkhand, and Rajasthan). These children, their classes, schools and families were tracked over a period of 15 months (2009–2010) in order to take a comprehensive look at the factors in the school, in the classroom and in the family that correlate with children's learning outcomes. This policy brief summarizes major findings from the study. The research provides important inputs for action as states begin to implement the Right to Education Act.

1. Usual assumptions about 'age-appropriate grade' and 'grade-appropriate learning levels' do not match ground reality.

In India, as elsewhere in the world, schools are organized around certain long standing assumptions about age and grade. For example, the term "Std 4" conjures up an image of a separate room with a Std 4 teacher, children of roughly the same age who are enrolled in Std 4 and who are using Std 4 textbooks. All of these children would be moving a year at a time through the school system (so the assumption is that a child who starts Std 1 at age 6 would be in Std 8 at age 14). The assumption stretches to the belief that if children are in Std 4, most of them would have successfully attained the learning expected of them the year before in Std 3.

But these assumptions do not match the reality of our schools. Within each grade, children vary enormously across a number of key dimensions:

- ❖ **Children vary in age.** Assuming that children started school in Std 1 at age five or six, one out of every three children in Std 2 is older than expected in the age-appropriate range. This number is higher in Jharkhand and Rajasthan. Among the children sampled from Std 4, over 40% of children are ten or older.

- ❖ **Children vary considerably in ability level.** For example, of the children sampled from Std 4, 30% or less could fluently read Std 3 level text in the baseline (at the beginning of Std 4). Even in a relatively well performing state like Himachal Pradesh, in the Std 4 sample, close to 40% children scored less than 20% and only 15% scored over 60% in language. This implies that a large majority of children enter each grade unable to cope with what is expected of them in that grade. A teacher of any grade faces a class that has a distribution of children who are anywhere between one and three grade levels below where they should be.

- ❖ **Children vary in the availability of learning support outside school.** Across both grades, close to 10% of sampled children come from families whose home language is different from the school's medium of instruction. More than 60% come from families were no adult woman has ever been to school. Less than half have any print materials available at home. Although parents understand the importance of schooling, most are unable to provide effective support for learning at home.

2. Textbooks have unrealistic expectations about what children can do and should learn during one year.

In both language and math, textbooks in every state make assumptions about what children in any particular grade already know and how much they can learn in a year. Although our research showed that children's learning levels improved over the course of a year, in every state most children are at least two grades below the level of proficiency assumed by their textbooks.

Figure 1	Extract from the Std 1 textbook in Rajasthan

दीवाली आई। घरों और बाजारों में सफाई होने लगी। राधा के घर में भी पुताई हुई। मां ने घर की सफाई की। राधा और मोहन ने काम में मदद की। आँगन में रंगोली बनाई। सामान जमाया। सबने मिलकर घर सजाया। पिताजी बाजार गए। नए कपड़े लाए। पटाखे लाए। मोहन और राधा बहुत खुश हुए।

Figure 2	Text used for the Std 2 reading test

राजू का एक बड़ा भाई है।
वह बड़े विद्यालय में पढ़ता है।
उसका भाई गणित में बहुत तेज़ है।
राजू की गणित कमज़ोर है।
इसलिए वह अपने भाई से रोज़ गणित पढ़ता है।

Table 1	% Std 2 students who could read 2-letter words (expected of children in Std 1)	
State	**Baseline (Std 2)**	**End line (Std 3)**
Andhra Pradesh	35.18	50.92
Assam	22.76	39.23
Himachal Pradesh	37.34	64.57
Jharkhand	23.44	34.04
Rajasthan	16.74	33.87
Total	**25.99**	**42.86**

Table 2	% Std 2 students who could fluently read a Std 1 level text (sample passage in Figure 2)	
State	**Baseline (Std 2)**	**End line (Std 3)**
Andhra Pradesh	7.06	21.93
Assam	6.71	28.80
Himachal Pradesh	16.70	34.91
Jharkhand	6.42	15.04
Rajasthan	4.45	10.87
Total	**7.85**	**21.33**

In math the situation is even worse. For example, in the baseline, in Std 4, less than a fourth of all children could do a numerical three digit subtraction problem with borrowing. This figure rose to about 30% by the end line. Less than 40% of Std 4 children in the baseline could correctly solve a word problem (2 digit subtraction with borrowing) in the baseline. By the end line, this improved to about approximately 54%.

Such evidence points to the most critical challenge in Indian school education today - how to guarantee age-appropriate education for all. Quality education implies that children reach grade level standards. Our data points to two options. Either we need to develop teaching-learning processes and teacher capability to enable children to reach expected standards. Or we can use such findings to design standards and curriculum, content and textbooks, keeping in mind what the majority of children can currently cope with and build from there.

3. Teachers' ability to teach matters. But educational and professional qualifications do not guarantee effective teaching.

This study indicates that the current nature of qualifications and usual types of teacher training are not sufficient to guarantee effective teaching. As states review their teacher recruitment and training policies and procedures in the light of the RTE Act, some conclusions from this study could prove to be both timely and relevant.

Neither higher educational qualifications nor more teacher training are associated with better student learning. Nor are teacher background characteristics such as age, gender, or experience. What does matter is teachers' ability to teach. This study measured 'teaching capability' across four dimensions:

- ❖ **Content knowledge.** Although most teachers demonstrated proficiency with the basic content knowledge required to teach upper primary level classes, many teachers did not.

- ❖ **Ability to spot common mistakes.** Teachers whose content knowledge is stronger are more likely to identify mistakes commonly made by children. If teachers are to engage in continuous and comprehensive evaluation, they must have the ability to assess their students' work.

- ❖ **Ability to explain textbook content in simple language or in easy steps.** Even when they have content knowledge, many teachers lack the skills needed to effectively communicate content to young children. This ability is vital for primary school teachers.

- ❖ **Ability to create questions or activities for children.** Many children currently in primary school are first generation learners; teachers need to be creative in devising activities that bridge the divide between home and school. Yet this is where teachers are weakest.

Figure 3 Example of a question asking teachers to solve a percentage and an area problem

The questions given below are taught to children in Std 4 or 5. Usually children do not know how to solve these questions correctly. Write down the steps involved so that children can understand how to solve them.

Q3

38 children are enrolled in a class. Out of these 23 are present. What percentage of children are absent?

Q4

In order to plant a mango tree, you need 25 m square area. If a field is 80 m long and 70 m wide, how many mango trees can be planted in this field?

Table 3 Teachers' response to the questions shown in Figure 3, by state

State	Question 3 (Percentage)				Question 4 (Area)			
	Wrong	Correct	N.A.	Total	Wrong	Correct	N.A.	Total
Andhra Pradesh	26.2	68.7	5.2	100	18.8	71.1	10.2	100
Assam	41.5	53.5	5.1	100	26.7	64.1	9.2	100
Himachal Pradesh	34.4	61.3	4.3	100	16.5	77.5	6.1	100
Jharkhand	39.6	54.0	6.5	100	23.0	68.4	8.6	100
Rajasthan	41.6	48.1	10.3	100	15.5	71.1	13.5	100
Total	**35.5**	**58.2**	**6.3**	**100**	**19.6**	**70.8**	**9.6**	**100**

Simple diagnostic tools such as the one used for this study could be used as the basis for designing teacher training modules that build on what teachers can do and aim to strengthen their abilities in areas where they are lacking.
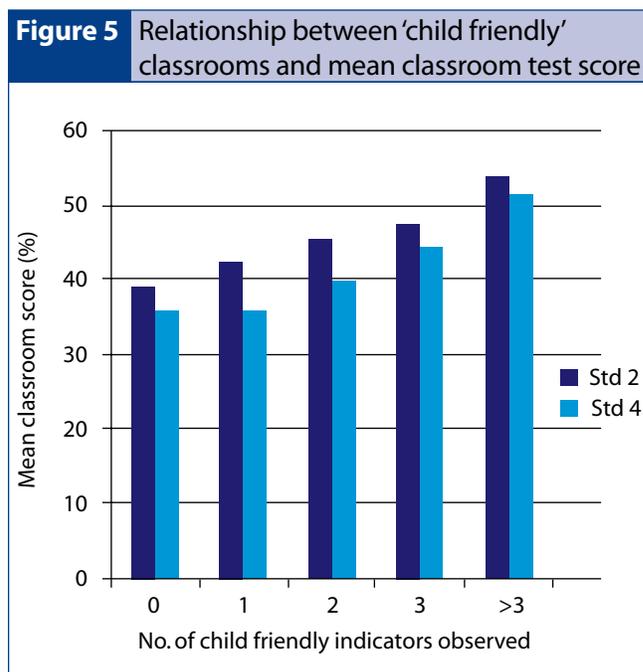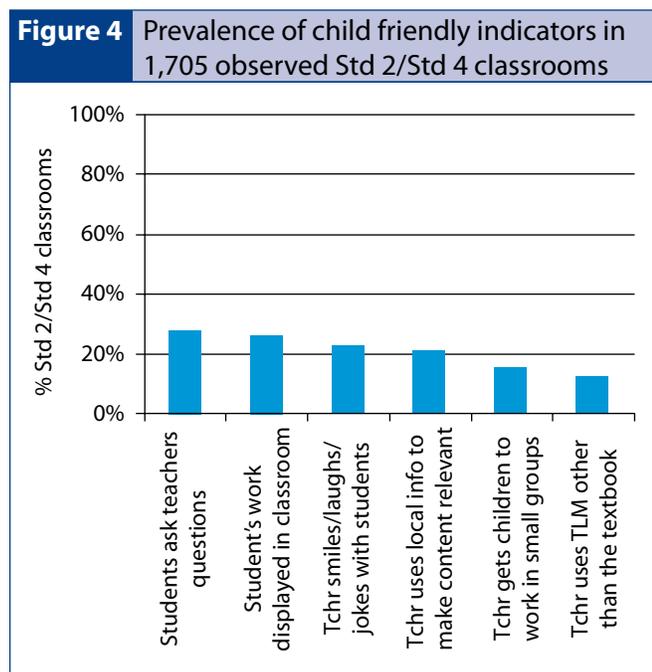
4. Teachers understand the importance of 'child friendly' practices. But classrooms are not child friendly at all.

Both the National Curriculum Framework and the Right of Children to Free and Compulsory Education Act (2009) stress the importance of child-centred and child-friendly classrooms.

As part of this study, a simple checklist of six easily observable indicators was used during a thirty minute classroom observation conducted in over 1,700 classrooms. These indicators were selected keeping in mind the content of the National Curriculum Framework:

- ❖ Did the teacher smile, laugh or joke with at least some students?
- ❖ Did students ask the teacher questions?
- ❖ Was children's work displayed in the classroom?
- ❖ Did the teacher use local information to make academic content relevant?
- ❖ Did the teacher use any teaching-learning material other than the textbook?
- ❖ Did the teacher ask children to work in small groups or pairs?
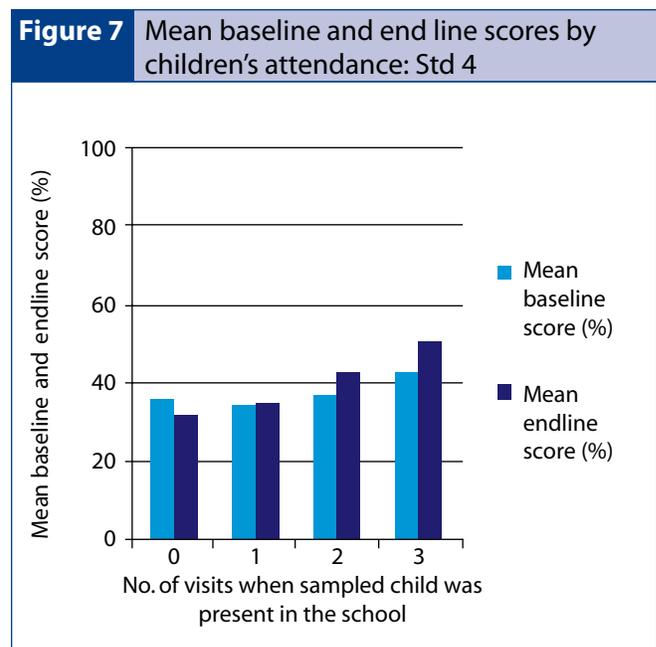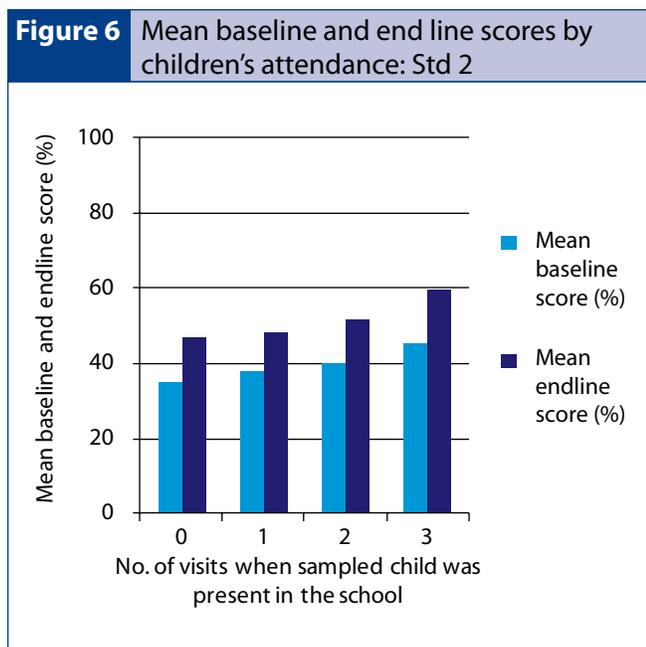
Analysis of the data from 850 hours of classroom observation shows that these characteristics are rarely observed in primary school classrooms, although there is considerable variation across states. But where child friendly classrooms were observed we found these characteristics to be strongly correlated with student learning outcomes.

Figure 4	Prevalence of child friendly indicators in 1,705 observed Std 2/Std 4 classrooms

Figure 5	Relationship between 'child friendly' classrooms and mean classroom test score

5. Attendance matters. Children who attend regularly have better learning outcomes.

This study tracked almost 30,000 children individually on each of three visits to their schools. When analyzed in relation to their baseline and end line learning outcomes, a clear pattern emerges: children who attended school regularly had better learning outcomes than those who did not. This is particularly true in Std 4, where curriculum content is more difficult than in Std 2.

There is an urgent need to move the focus from tracking enrollment to tracking and understanding participation in school. This includes basic measurement of who is in school and for how long (attendance of teachers and children measured in different ways). It also includes a closer look at the factors that promote or impede better attendance, where they originate, and what can be done about them.

Figure 6	Mean baseline and end line scores by children's attendance: Std 2

Figure 7	Mean baseline and end line scores by children's attendance: Std 4

(Note: Highest mean scores are of children who were present in school in all 3 visits.)

6. Empirical evidence can be helpful in shaping policy and practice.

The Right to Education Act is in the process of being implemented. Empirical evidence on scale from different parts of India collected through studies such as this one can be used to inform the process of creating better school and classroom environments for our children and equipping our teachers better. The dream is that RTE will enable every child in India to go to school regularly, learn well consistently, and complete eight years of schooling successfully. Providing children with a solid foundation on which to build their future is key to building the future of the country.

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