



TaRL Webinar Series: Session 1

August 30, 2017



Teaching at the Right Level



Every child in **school** and **learning well**

Pratham's approach to solving a basic problem in elementary education in India

JPAL-Pratham Webinar Series on TaRL

August 30, 2017



PRATHAM'S TEACHING-AT-THE-RIGHT-LEVEL APPROACH

CONTENTS

1. What is the problem?
2. Why do we have this problem?
3. What do the data tell us?
4. What is the solution?
5. What are the key elements of this approach?
6. What are the main teaching-learning activities?
7. How is the solution implemented?
8. How much does learning improve? In Learning Camps
9. How much does learning improve? In Govt. partnerships
10. What “works” to improve children’s learning? Lessons



WHAT IS THE PROBLEM?

More than 96% of children in the age group 6-14 are enrolled in school. More and more children are getting more and more years of schooling. But

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।

Text is in the child's language of instruction

Close to 50% of children in Grade. 5 in rural India cannot read a Grade 2 level “story”.

Similar proportion of children even in Grade 5 have difficulty in correctly solving a basic subtraction problem.

$\begin{array}{r} 52 \\ - 24 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ - 47 \\ \hline \end{array}$
$\begin{array}{r} 48 \\ - 29 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ - 37 \\ \hline \end{array}$

In most states in India, children are expected to do this kind of math by Grade 2.



ASER 2005 to 2016

ASER stands for Annual Status of Education Report. Facilitated by Pratham, a nationally representative sample of children are assessed each year on basic reading and arithmetic.

WHY DO WE HAVE THIS PROBLEM?



Also, many parents of school-going children do not have much education themselves and so they are not able to offer much learning support at home.

There may be several reasons why children despite being in school are not learning.

In a typical Indian classroom, teacher teaches from the textbook for that grade. But, if the child does not have foundational skills like reading and basic math, he or she finds it difficult to cope with content & curriculum expected at their grade level.

Teachers end up “teaching to the top of the class” and others are not able to benefit from the teaching.

WHAT DO THE DATA SUGGEST?

ASER 2016: % Children at different reading levels
All India (rural) Sample size: ~ 560,000 children

Level	Beginner level:	Letter level:	Word level:	Para level:	Story level:	
Grade	Cannot recognize letters as yet	Can recognize letters but not read words	Can read words but not sentences	Can read sentences at Grade I level but not higher level text	Can read text at Grade II level & higher	Total%
Std 3	13.6	24.1	19.9	17.3	25.1	100
Std 4	8.5	17.2	17.7	19.2	37.4	100
Std 5	6.0	13.3	14.2	18.6	47.8	100

Example: Look at the challenge that a Grade 5 teacher faces in India. The overall reading level is low and the tail of the distribution is long and varied.

Who should she teach? What should she teach to whom?

WHAT IS THE SOLUTION?

Pratham has evolved a solution called **Teaching at the Right Level** which enables children to acquire foundational skills, like reading and arithmetic quickly. These capabilities are durable.

Regardless of age or grade, teaching starts at the level of the child. This is what is meant by “Teaching at the **Right level**”.

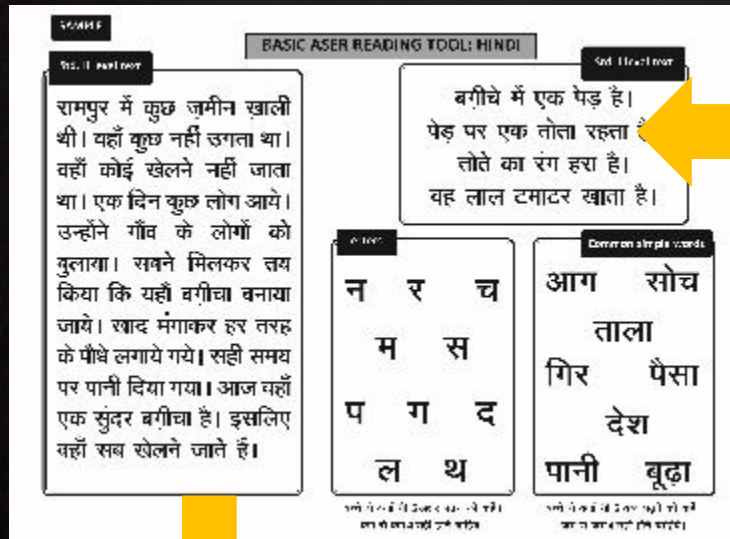
Focus is on helping children with basic **reading, understanding, expressing themselves** as well as **arithmetic** skills. These are foundational building blocks that help a child to move forward.

TaRL is an effective & low cost strategies that helps children to “**catch up**” in a short period of time. Children, who are 7 or 8 and older and have been in school for a few years, can “pick up” quickly.

Pratham’s approach is also called CAMaL – Combined Activities for Maximized Learning (the word CAMaL in Hindi means “magic” or “wonder”. In English, it is called “Teaching at the Right Level” (TaRL)



WHAT ARE THE KEY ELEMENTS OF THE APPROACH?



2. Children's groups are made according to the basic assessment. Available teachers or instructors allocated to facilitate group activities and to guide children's work.



1. Simple one-on-one assessment done to group Grade 3, 4 and 5 children by level rather than by grade.
4. Similar assessment used for tracking children's progress, monitoring intervention.

3. For each group there are a set of activities and materials appropriate for their level.

Children learn in groups and also individually. Teachers or instructors do activities with groups.

As children make progress they move into the next group.



WHAT ARE THE MAIN TEACHING-LEARNING ACTIVITIES?

PRATHAM BELIEVES IN COMBINING ACTIVITIES.
FOR ANY ACTIVITY: SAY, DO, READ, WRITE.

Language activities

- Read short stories aloud (with finger under each word)
- Talk and discuss the story
- Use phonetic/syllabic chart
- Word games & activities
- Think-talk-write (The floor is used a lot for writing activities)



Children do big group activities. They also work in small groups & individually. Activities are varied for different groups of children based on their level.

Math activities

- Discuss & talk about math: numbers, word problems, real life math
- Count aloud with straws (and rubber bands). Using concrete materials for place value and operations
- Use “number chart” for number sense
- Talk, discuss to solve problems – understand the problem, think of what to do, do it and explain
- Math games & activities

HOW IS THE SOLUTION IMPLEMENTED?

Model 1: Learning Camps (Direct work)

Children from Grade 3 to 5 grouped by level. Two hours or so of time for this activity during the normal school day.

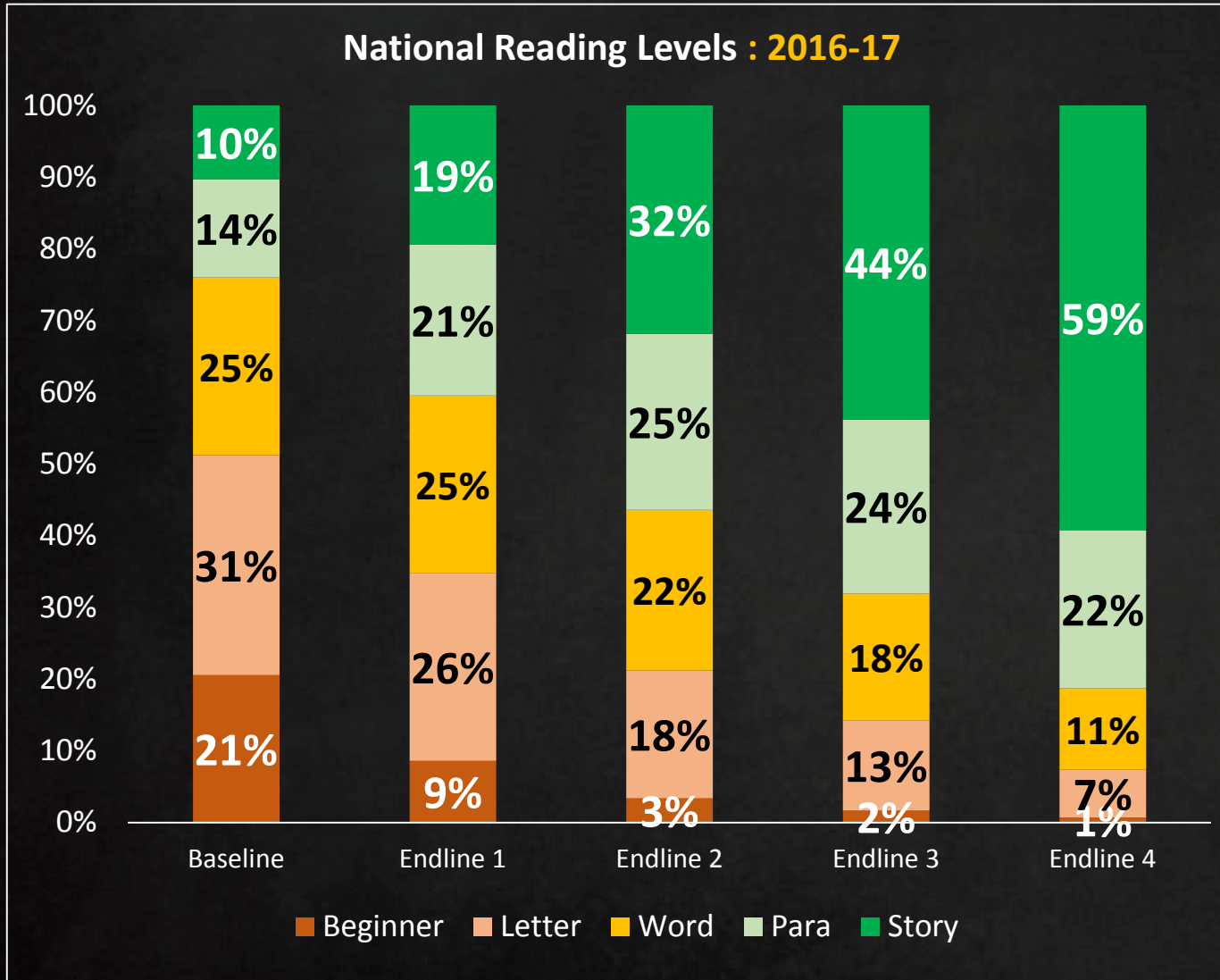
- Implemented **in** government schools
- A **Pratham team member** leads the teaching-learning activities. S/he is supported by **village volunteers**. School teachers often assist.
- Intensive activity in **camp mode** for **8-10 days at a time**. 3-5 Learning camps. Total instructional days **30-50 days** (depending on baselines)

Model 2: Partnerships with government

- Implemented **by** govt. school system
- **Teachers** do teaching-learning activities with children. They are supported by **officials** (who are above school level). Officials who train, mentor, monitor & support teachers have conducted their own “**practice classes**”.
- **Daily** activity through the school year for at least a period of **60-80 days**.

HOW MUCH DOES LEARNING IMPROVE? IN LEARNING CAMPS

Model 1: Pratham working directly in govt schools



Learning Camps for Grades 3-5: 2016-17

- Pratham worked directly in 5973 units in govt primary schools across India impacting close to ~ 200,000 students in Grades 3-5.
- Aggregate data shows that at baseline 52% children (21%+31%) could not even read simple words.
- 30-40 days later, at endline 81% children (59%+22%) can read simple text fluently.

HOW MUCH DOES LEARNING IMPROVE? IN PARTNERSHIPS

Example: 4500 schools: 3 districts in Karnataka state in 2016-17. Pratham-Govt partnership

Highlights

- State government ensured that 400 officials at sub-district level conducted their own daily “practice classes” for 20 days. (Pratham trained & monitored.)
- These officials then trained teachers and then provided continuous on-site support, mentoring and monitoring to schools through the entire duration.
- Data from baseline and mid line was put on a dashboard (Pratham assisted). Data based periodic monitoring & review took place.
- Based on performance in 3 districts, scale up to 13 districts planned for this year

Results

Dec 2016-March 2017: about 60 days in all ~73,000 children from Grade 4-5

% Children:	Baseline	Mid line	End line
Reading at Grade 2 level	39.4	57.1	75.4
Doing subtraction with borrowing (2 digit)	72.6	86.8	95.2
Doing division problems (3 digit by 1)	38.3	53.7	75.6

WHAT “WORKS” TO IMPROVE CHILDREN’S LEARNING? TWO DECADES OF “BUILDING FOUNDATIONS” ON SCALE

LEARNINGS from the PRATHAM experience

Children “left behind” are invisible. The assumption is schooling = learning is not correct. Clear focus on learning is urgently needed. “Business as usual” or “more of the same” will not lead to significant learning gains. Clear goals and new strategy is needed.

Foundational skills – reading with understanding, expression, number knowledge, problem solving with operations need to be in place so that children can move well beyond basics. Currently, teaching at grade level leaves the majority behind. Hence teaching-at-right-level is needed to bring about significant and substantial change.

Appropriate easy-to-do assessment can lead easily to do-able appropriate action.

Children who are age 8+ can learn quickly. Accelerated learning is possible. Simple and low cost methods and materials are scalable & effective. These methods have been successfully used by teachers & community volunteers with substantial & long lasting effects on learning.

CAN ALL CHILDREN IN YOUR VILLAGE READ AND SOLVE BASIC ARITHMETIC PROBLEMS?



State		District		Block		Total number of children tested
Village				Date		
Point person for this village						

Sample of a Std 2 story

Rani is a little girl. Her mother gave her a book. It had lots of stories. It also had many pictures. Rani read it every morning on her way to school. She learned many new words. That made her teacher very happy.



out of children in Std 3-5 cannot read this story.

out of children in Std 6-8 cannot read this story.

out of out of school children in the age group of 7-14 years cannot read this story.

Sample of Std 2 subtraction problems

$$\begin{array}{r} 41 \\ - 23 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 65 \\ - 27 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 98 \\ - 69 \\ \hline \\ \hline \end{array}$$



out of children in Std 3-5 cannot solve these subtraction problems.

out of children in Std 6-8 cannot solve these subtraction problems.

out of out of school children in the age group of 7-14 years cannot solve these subtraction problems.

Come let us help the children in our village to read and do basic math.

Not being able to read fluently, write or express one's thoughts or do basic arithmetic is holding back progress for millions of children.

This is a big problem in countries like India but there are effective, tried and tested solutions like Pratham's approach - teaching-at-the-right-level to solve the problem.

Why not use this approach to help children begin the journey for learning well?

For more info:
www.pratham.org
www.asecentre.org



Every child in school and learning well

VIDEOS



In the 2016-17 school year:

- Pratham's direct work – Learning Camps impacted 200,000 children.
- Pratham's work in partnership with governments indirectly impacted close to 4.5 million children in India.

1. Key activities of Teaching-at-the-Right Level. See a short video:

<https://www.youtube.com/watch?v=jqZZ5zz7KDM>

2. Partnership between Government & Pratham: See a short video from Jehanabad district in Bihar

<https://www.youtube.com/watch?v=J-laQ7FOdeY>

3. Follow one child – Nancy – as she goes through the Learning Camps and then beyond

https://www.youtube.com/watch?v=m_G7p7_eZA4

Teaching at the Right Level



Annie Duflo
Executive Director
Innovations for Poverty Action
August 30, 2017



From India to Ghana

- The **key concept** that made earlier programs successful: **targeted instruction (TaRL)**
- **Context:** What is similar; what is different? How will that affect implementation?
- Political and financial **sustainability**



Program Design and Support

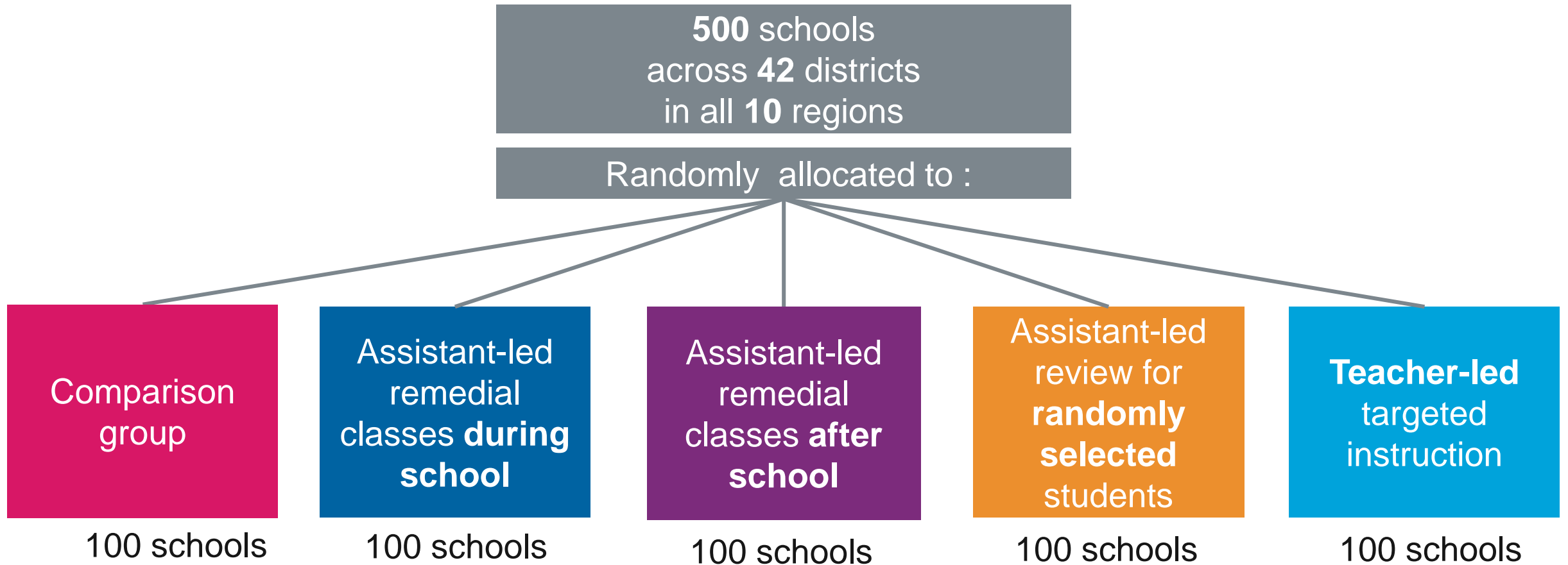
Addressing Policymakers' Questions



- Should remedial classes be during school hours? After school?
- If classes are after school, will that hurt attendance?
- What if we just add an assistant, without targeted instruction?
- Do we really need assistants? Can we instead train teachers to do this?

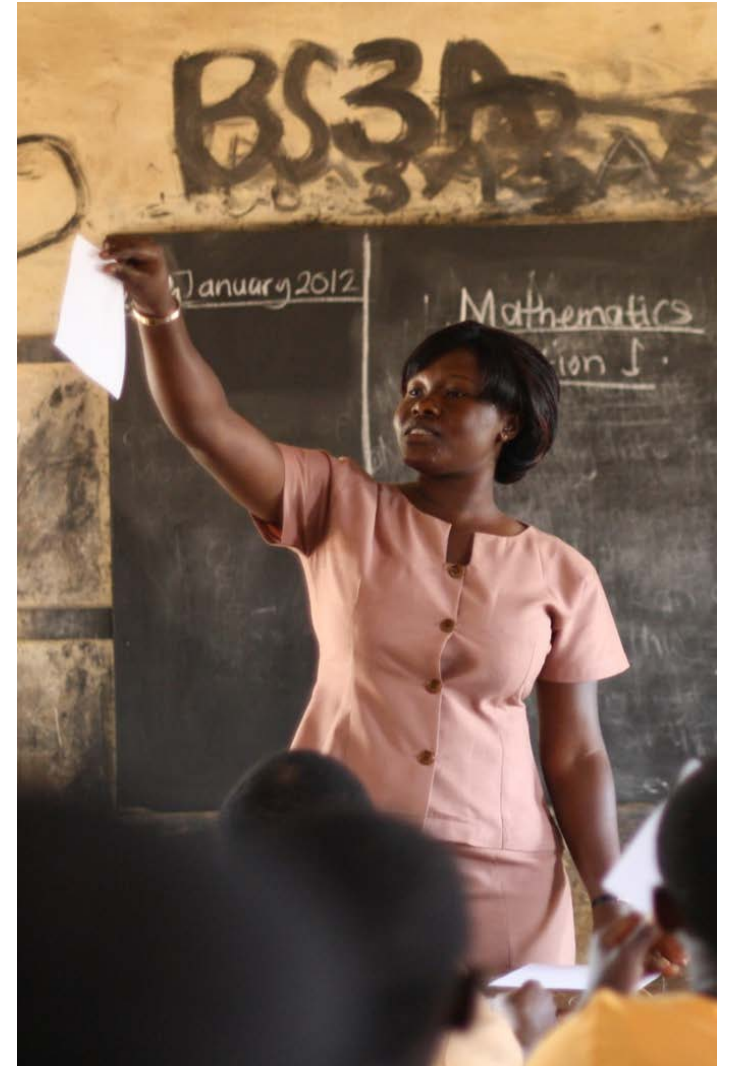


Evaluation Design



Zooming in on the “Teacher-led” intervention

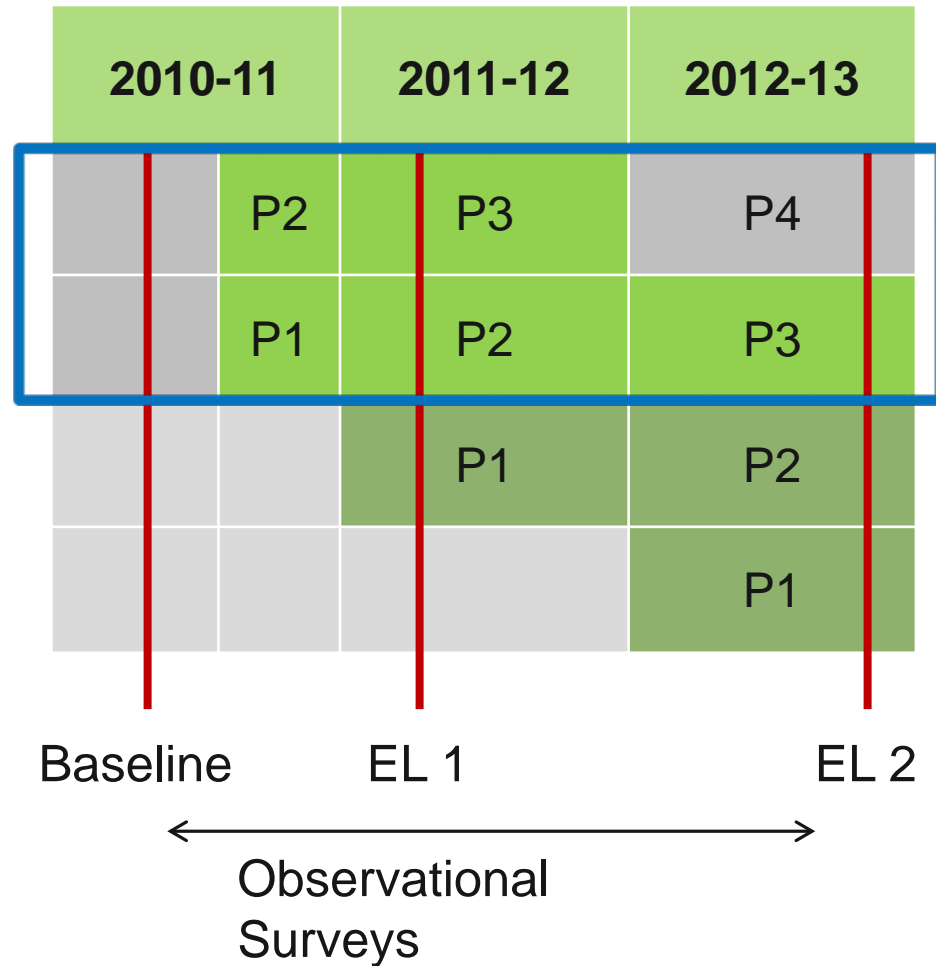
- No additional staff, only training and materials
- First version:
 - Teacher to provide small-group instruction, targeted at pupils’ actual learning levels—for all literacy and math sessions
- Second version (after a few months)
 - Teachers from P1-P2-P3 supposed to split their students by ability levels, rather than grades - for one hour daily





Results

Data Collection and Cohorts



Overview

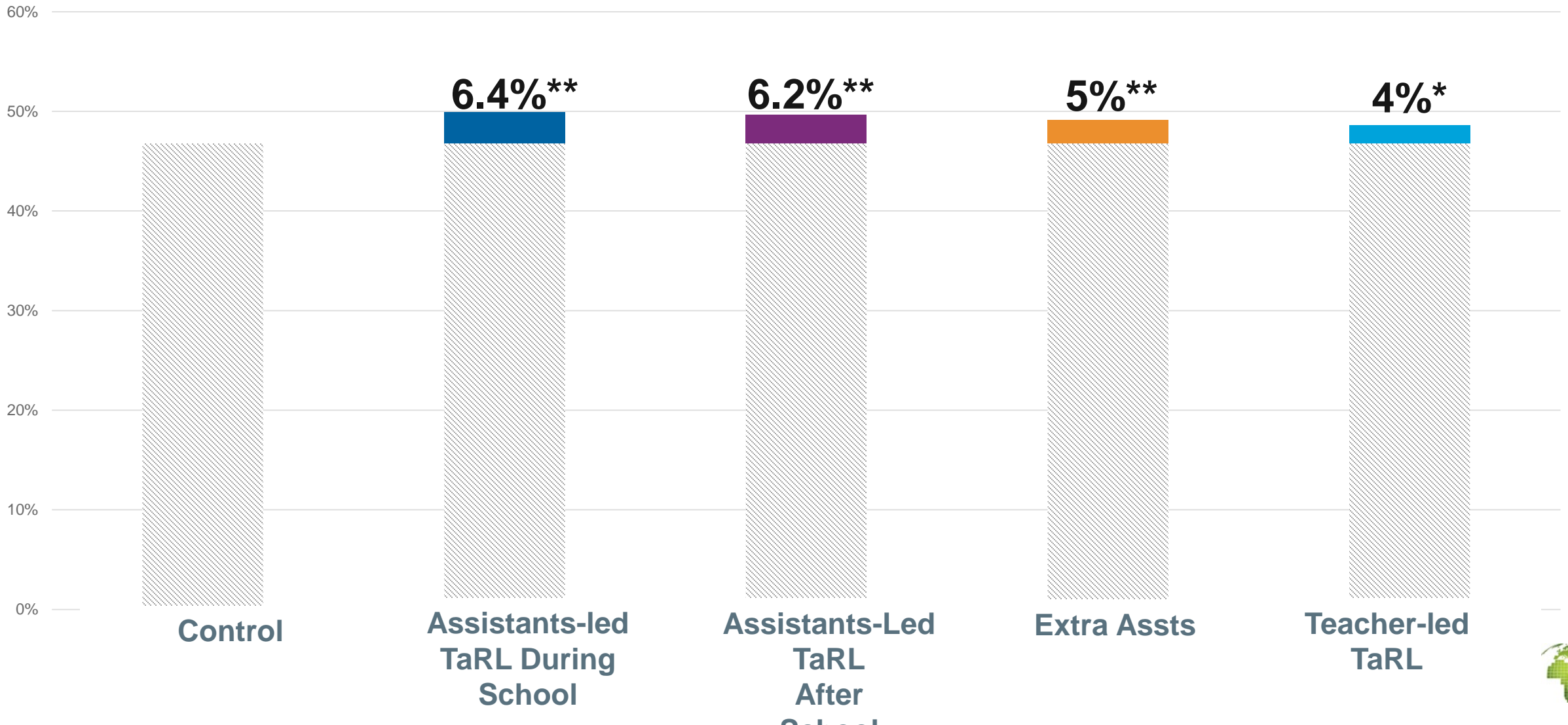
Targeted instruction also works in Ghana

- Positive effects of assistants-led TaRL before & during school for P3-P4 students (in program since end of P1-P2)
- Effects persist 1 year after program implementation for P4 students
- Effects for during or after schools depend on school context
- There are positive but lower effects for teacher-led TaRL
 - ✓ Teachers implemented TaRL less often than assistants
- Implementation challenges led to low exposure to the program
 - ✓ Appropriate Mentoring and Monitoring are critical



Positive and Lasting Impacts (P3-P4)

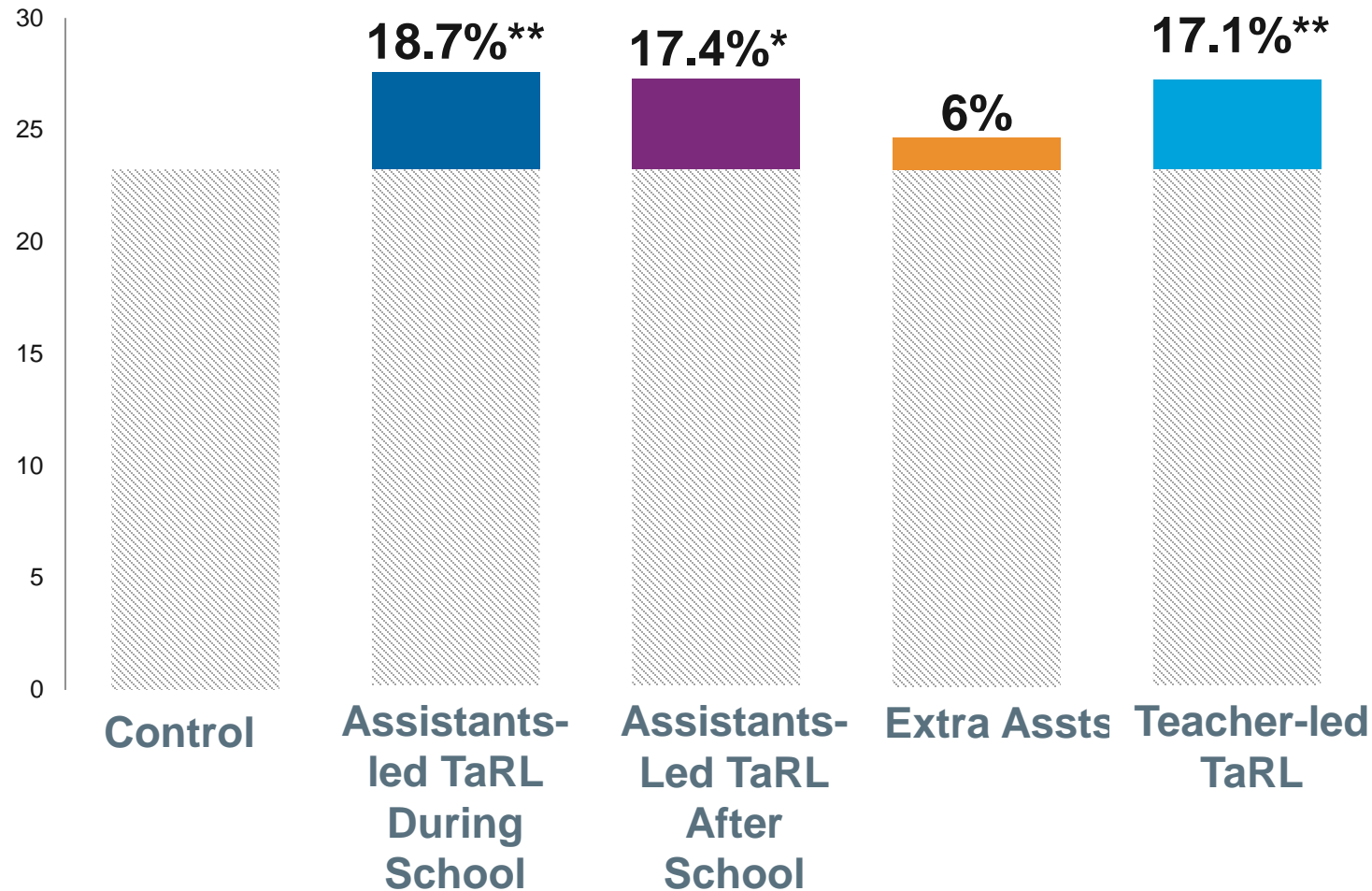
Overall Test Scores (SD)



Higher Impacts on Targeted Skills, esp. Reading

For Assistants or Teacher-led TaRL interventions

Local Lang Reading Skills P3&P4 (SD)



Targeted Sections:

- 0.12 to 0.18 SD for Assistants-led TaRL
- 0.08 to 0.17 SD for Teacher-Led TaRL



Teacher-or Assistant-Led Targeted Instruction?

Results:

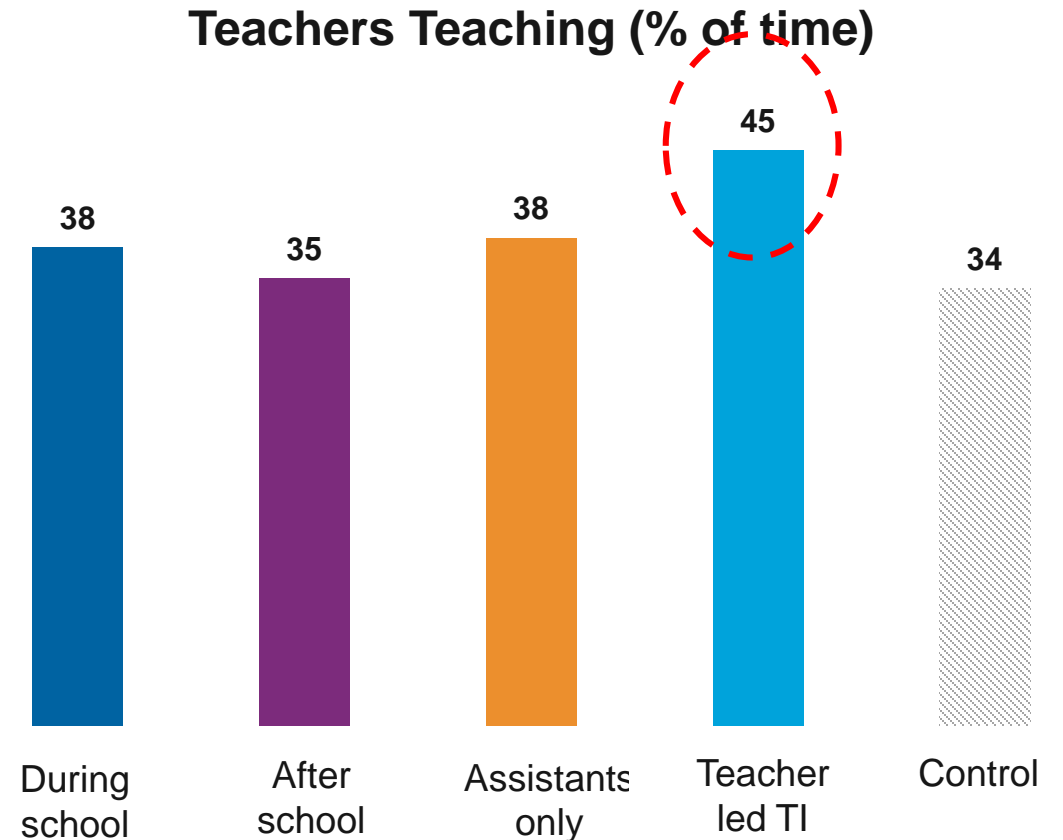
- Teachers teach more often
- Positive but smaller Effects of Teacher-led TaRL
- Enforced TaRL 15% of the time (vs. 30% for Assistants)

Key Consideration:

- Is there an existing mechanism to recruit assistants?

Key Takeaways for Teacher-led TaRL

- Need to give teachers the mandate and the “space” to do TaRL—dedicated hour, or camp
- Mentoring and Monitoring— Role of School Supervisors?



During or After School?

Schools with multigrade teaching

	All	English	Loc Lang	Math
During school	0.30*	0.26*	0.43*	0.34*
After School	0.21*	0.17*	0.26*	0.17*

- Assistants absent more often after school but TaRL Time on Task higher

- Seems to depend on the school environment
 - Multigrade
 - Likelihood of class taking place?

Schools with no unused classroom at baseline

	All	English	Loc Lang	Math
During school	0.12**	0.13**	0.11	0.1+
After School	0.14**	0.16**	0.14+	0.1*



Takeaways

- **Targeted instruction works in Ghana.** This can be done in different ways.
- It could have higher impacts with greater **exposure to the intervention**
- **Key is the intensity of the program** – what will make it most likely for TaRL to be implemented most often, in a sustainable manner?
- **Youth employment programs/national service schemes** could be used as mechanisms to recruit assistants.
- **Systematic changes in teacher mandates/classroom structure** are necessary to make teacher-led remedial education most effective.



The Way Forward

Improving Teacher-led Targeted Instruction

- How to motivate teachers to target instruction?
- Circuit supervisor role?
- Intrinsic motivation?
- STARS study: Adrienne Lucas

Exploring a new Assistant Model: National Service Scheme Initiative

- National Service Personnel → Teaching Assistants
- Teaching Assistants implement targeted instruction





J-PAL

ABDUL LATIF JAMEEL POVERTY ACTION LAB

Teaching at the Right Level: Evidence on Implementation Models

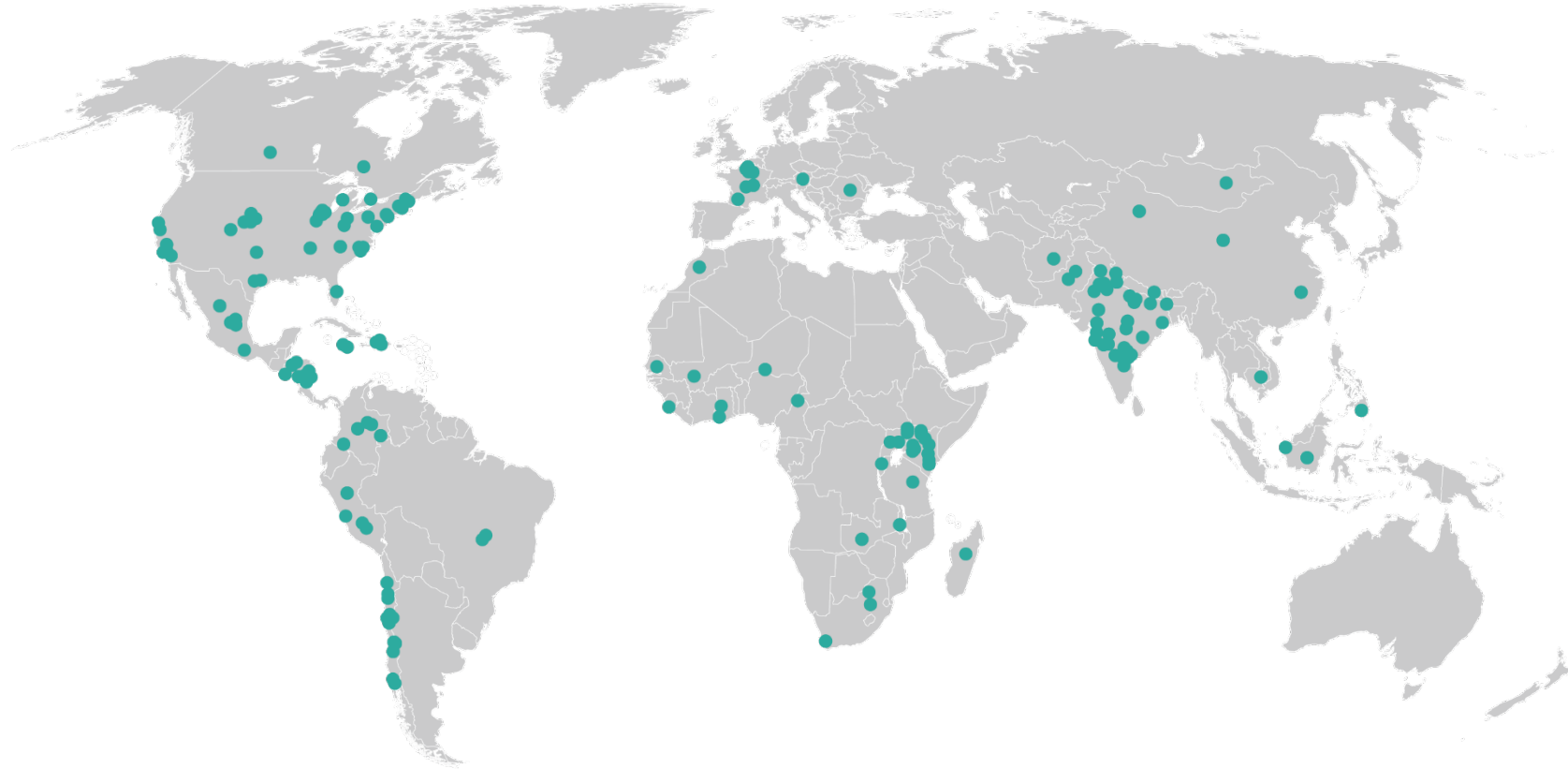
John Floretta

Associate Director of Policy



J-PAL's Work in Education

- 203 completed and ongoing evaluations in 43 countries



In many developing countries, despite enrollment gains, learning levels are low

- 2016 ASER survey: only 48 percent of 5th graders in rural India can read a 2nd grade text
- Similar results from ASER Pakistan and Uwezo in East Africa
- Very poor results on international exams such as TIMSS, PISA

The image displays two sample assessment tools. The top section is the 'BASIC ASER READING TOOL: ENGLISH', which includes a 2nd level text about a tree and a bird, a 1st level text about a monkey, and a list of letters and words for identification. The bottom section is the 'BASIC ASER MATH TOOL', which includes a grid of number recognition tasks (1-9 and 11-99), subtraction problems (2-digit and 3-digit), and division problems (3-digit by 1-digit).

BASIC ASER READING TOOL: ENGLISH

2nd. level text

A big tree stood in a garden. It was alone and lonely. One day a bird came and sat on it. The bird held a seed in its beak. It dropped the seed near the tree. A small plant grew there. Soon there were many more trees. The big tree was happy.

1st. level text

This is a big monkey. He lives on a tree. He likes to jump. He also likes bananas.

Letters

m t z
f k
o a r
v p

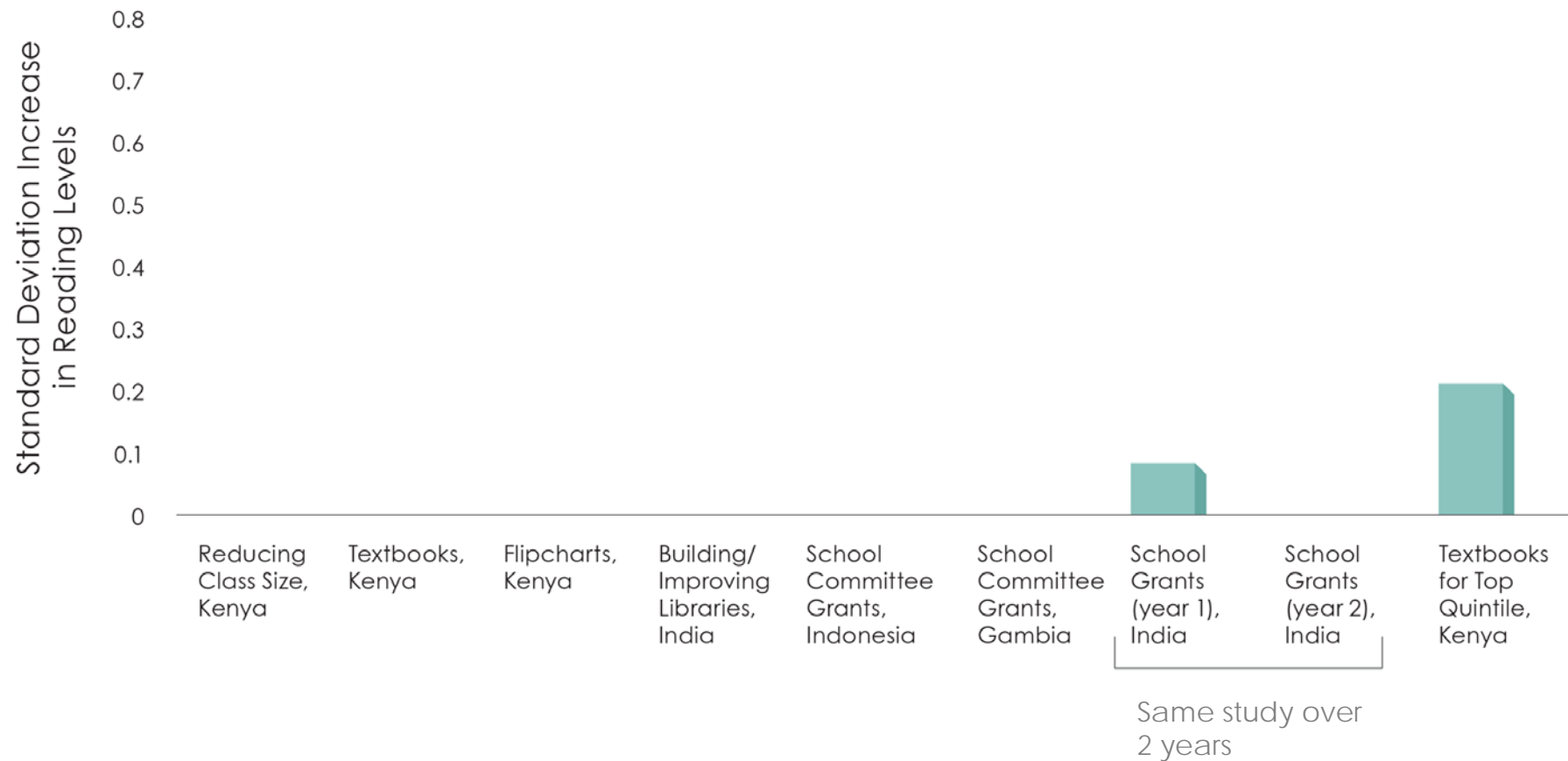
Common simple words

both step
cup
out rope
dog
hat key

BASIC ASER MATH TOOL

Number Recognition 1-9	Number Recognition 11-99	Subtraction (2 digit with carry over)	Division (3 digit by 1 digit)
3 7	65 38	51 67 - 35 - 48	7) 919(
1 4	92 23	84 73 - 49 - 36	6) 769(
8 9	47 72	56 31 - 37 - 13	8) 983(
5 2	56 87	45 43 - 18 - 24	4) 513(

Adding “business as usual” school-level inputs has not increased learning



What are implications of the failure of additional inputs to improve learning?

- Vast majority of education spending is on inputs such as teacher salaries, textbooks, teacher training
- However, adding inputs is not sufficient to improve learning
- Suggests there are other challenges in the classroom that need to be addressed:
 - Huge variation of learning levels in each grade, most students not at grade level
 - Overambitious, rigid curriculum
 - Teachers incentivized to complete curriculum, target instruction to highest performers

Teaching at the Right Level model

As developed by Pratham:

1. Children **assessed with simple tool** for language and math
2. For instruction, children **grouped by learning level** rather than age
3. Available teachers/volunteers assigned to groups. **Teaching according to learning levels using appropriate, interactive materials**
4. Ongoing **monitoring, assessment, and regrouping** based on learning levels. Tracking of progress and frequent reviews

Moving from:



To level-based learning:



Similar supplementary remedial models effective across contexts

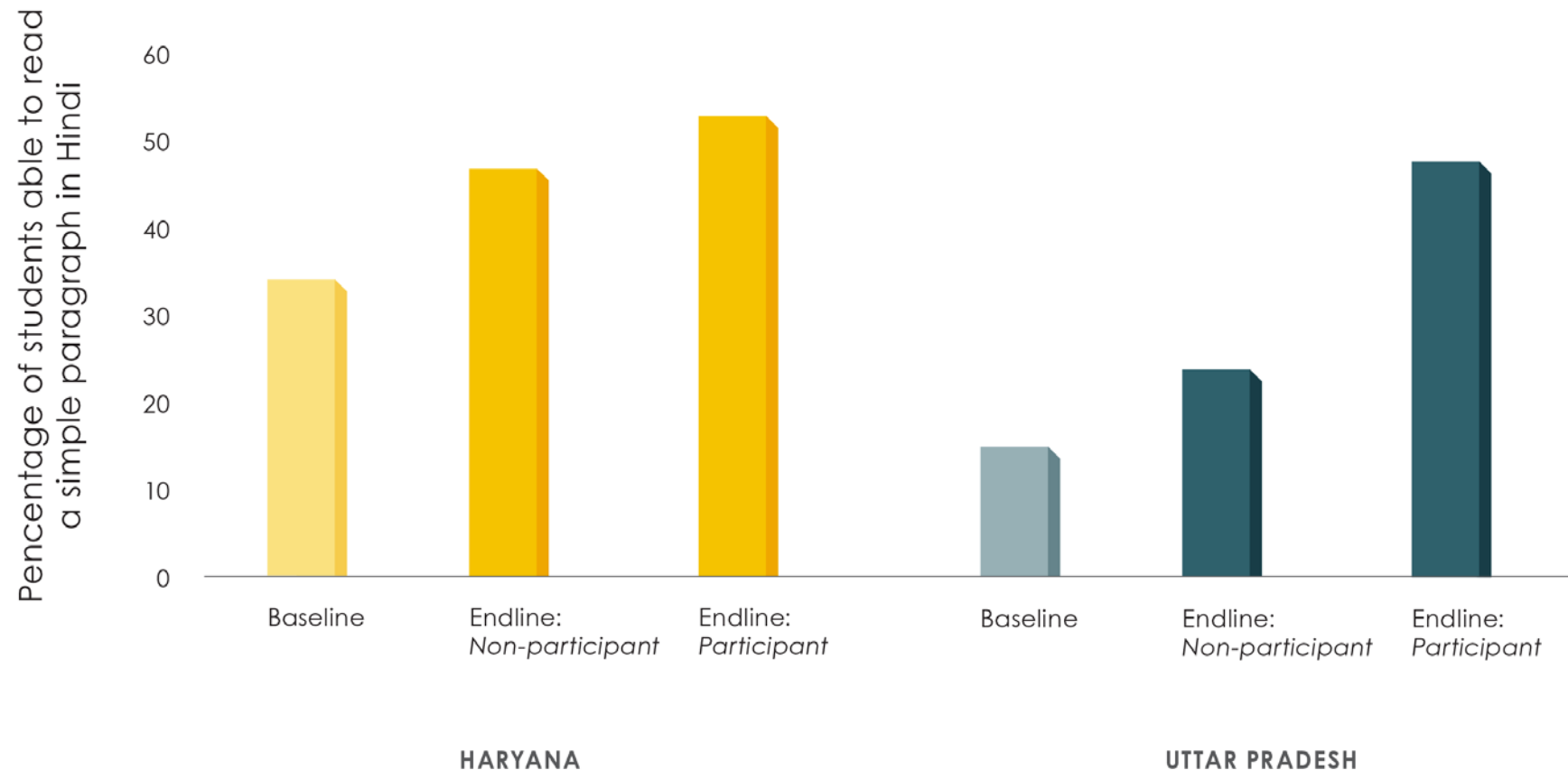
- Naandi Foundation “STRIPES” program, India
 - After-school sessions with community volunteers
- Tracking by initial test scores, Kenya
- Small group tutoring, Chile
 - Weekly 90-min tutoring for 4th graders
- “Match tutoring”, U.S.
 - 55 minutes of 2:1 math tutoring for high school boys
- “Mindspark” ed-tech, India
 - Personalized learning technology

References: NBER working paper: Banerjee et al, “From Proof of Concept to Scalable Policies: Challenges and Solutions, with an Application” (December 2016)

Developing an effective model for scale: 6 randomized evaluations in India

- **Phase 1: Proof of concept: (2001-2006)**
 - Local tutors and volunteers in 3 states successful at delivering the model
 - Challenges with “take up” running the model out of school
 - Potential challenge of in-school model throughout the year with volunteers
- **Phase 2: Developing a model for scale (2008-2010)**
 - Camp model:
 - Government teachers successfully deliver model in summer camps
 - Short-burst camps can be effective at improving learning
 - Teachers did not implement the model during school day
- **Phase 3: Developing a model for scale - take 2! (2012-2014)**
 - Optimize camp model for 50 days
 - Teacher-led model effective with:
 - Teacher mentor/monitors
 - Dedicated time for the model

Increasing # of students who can read a paragraph by 10% in Haryana and 2x in UP

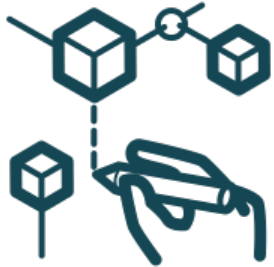


Delivery Method

VOLUNTEERS & PAID TUTORS



LESSON TaRL models delivered by tutors/volunteers have been shown to be effective inside and outside of the school day. ^{3 4}



DELIVERY MODEL

- Children who are falling behind are pulled out for the period of the day ⁷
- After school ^{4 3}
- Bursts through-out the school day ⁴



BENEFITS

- TaRL approach is easy to adopt
- Effective

CHALLENGES

- Retention
- Ongoing recruitment
- Working outside of the system
- Volunteers may become replacement teachers instead of TaRL instructors.

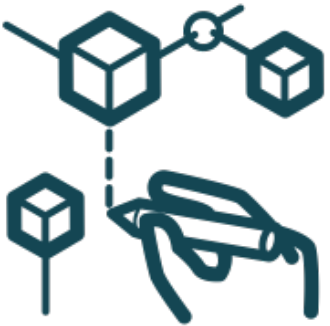
Delivery Method

TEACHERS



LESSON Teachers can effectively deliver TaRL programmes but they need a dedicated time for basic skills and a lot of mentoring and monitoring support. ⁴

- Material on its own does not work
- Material and training on their own don't work



DELIVERY MODEL

- Regroup children according to performance across grade levels for a period of the day
- Holiday camps



BENEFITS.

- Working within government systems – beneficial for scale and sustainability.

CHALLENGES

- It is easier for teachers to default into past teacher behavior
- Government-led programmes are more susceptible to implementation break down.

Time of Instruction



AFTER SCHOOL (holiday camps, time after school) ^{4 3}

- Problems with attendance (23% attendance in summer camp in Bihar; 8% attended class in UP information campaign)
- Additional hours
- Need to think about incentives/additional pay



DURING SCHOOL (an hour a day, bursts of time throughout the school year)⁴

- All children
- Can be challenging to get government buy in



PULL OUT ⁵

- More individualized attention for students falling behind
- Reaches fewer children
- Requires an additional resource

The Big Lessons

15 years of research on TaRL



Information on learning outcomes alone unlikely to move people to act. ³



Targeting instruction to the level of the learner improves learning outcomes for reading and numeracy. ^{1 2 3 4 5}



TaRL can be effectively implemented by volunteers, paid tutors and teachers, but teachers require more support. ^{1 2 3 4 5}

J-PAL Support of Teaching at the Right Level



RESEARCH

J-PAL affiliated researchers have conducted a series of randomized evaluations of TaRL programs.



SHARE

Policy teams share lessons from TaRL research through our website and through on-the-ground meetings with policymakers



CATALYZE

Regional policy teams support policymakers in designing and implementing evidence-based TaRL programmes.

Thank you



Appendix



References

Teaching at the Right Level

1. Duflo, Esther; Dupas, Pascaline; and Kremer, Michael (2011): Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya. *American Economic Review*. 101(5): 1739-74.
2. "Evaluation of Government of Harayana's Comprehensive and Continuous Evaluation Scheme and Learning Enhancement Program" Preliminary Results, July 2013. Working Paper.
3. Banerjee, Abhijit; Banerji, Rukmini; Duflo, Esther; Glennerster, Rachel and Khemani, Stuti: (2010) "Pitfalls of Participatory Programs: Evidence from a Randomised Evaluation in Education in India." *American Economic Journal: Economic Policy*. 2(1): 1-30.
4. Abhijit Banerjee, Rukmini Banerji, James Berry, Esther Duflo, Harini Kannan, Shobhini Mukerji, Marc Shotland, and Michael Walton (2016): Mainstreaming an Effective Intervention Evidence from Randomized Evaluations of "Teaching at the Right Level" in India
5. Banerjee, Abhijit; Cole, Shawn; Duflo, Esther; and Linden, Leigh (2007): "Remedying Education: Evidence from two randomised experiments in India" *The Quarterly Journal of Economics*. 122(3): 1235-1264.
6. Duflo, Annie and Kiessel, Jessica (2013): "Research to Practice " Presentation. 8 February (Kenya)
7. Banerjee, Abhijit, Shawn Cole, Esther Duflo, and Leigh Lindon. 2007. "Remedying Education: Evidence From Randomized Experiments in India." *The Quarterly Journal of Economics* 122(3): 1235-1264.

What kind of support can J-PAL Offer?

Suggested phases for implementing TaRL

	Tasks	J-PAL Africa's offer of support
Determine need for TaRL	Analyze data on learning levels in Grades 3-5 Conduct scoping work in schools to determine class size, student heterogeneity, teacher challenges	Provide support in conducting scoping work and analyzing data
Decide on a model	Determine how to design the TaRL programmed given the context (for example, will the programmed be run by volunteers or teachers?)	Use a theory of change approach to map out pros and cons based on the global evidence and local context scoping
Design an intervention	Plans to be created: <ul style="list-style-type: none"> • TaRL Material • Training • Mentoring and monitoring 	Connect partners with implementers Provide curriculum from other countries Assist in mapping out lessons from the evidence into the local context
Pilot TaRL Programme	Work out details on implementation Conduct a process evaluation to learn about how to best design the programme at scale	Help design monitoring system for pilot Design and lead learning outcomes assessment
Scale up TaRL	Choose scale up plan through districts	Continue to provide technical assistance if necessary and helpful