

Teaching at the Right Level

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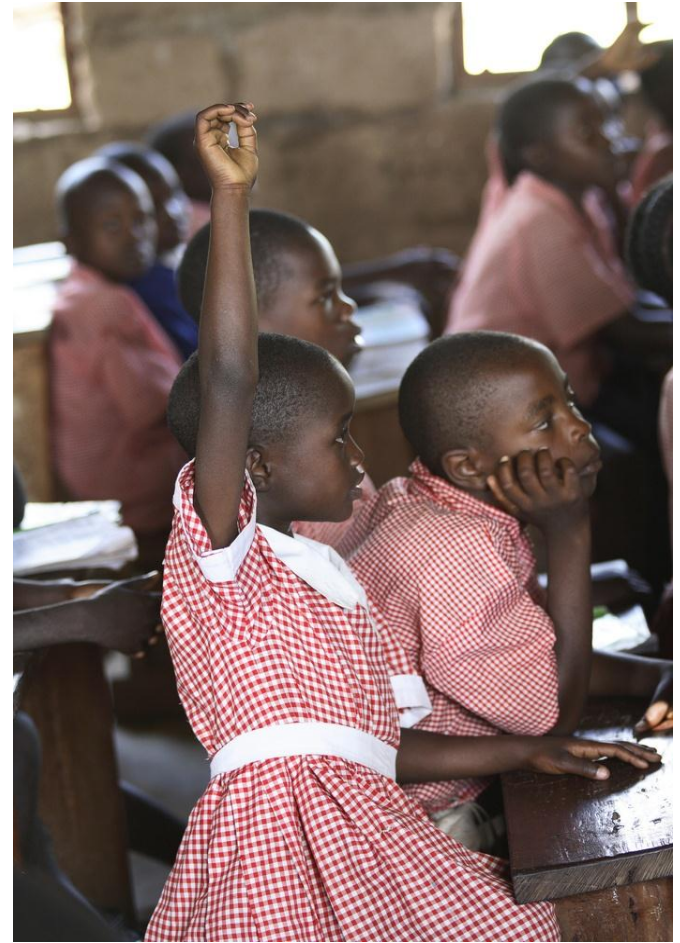
Evidence-Based Programming in Early Grade Reading

Background

- Across the developing world, dramatic increases in access to primary schooling
- Yet being in school does not seem to imply that children are learning
 - According to ASER, 59% of 4th graders and 44% of 5th graders in India read below the 2nd grade level
 - 25% of children in 3rd grade could not recognize a letter
 - Similar results in Pakistan (LEAPs report), Kenya, Ghana

What Could be the Problem?

- Lack of inputs (textbooks, etc.)
- Shortage of teachers
- Teaching/pedagogy
- Lack of demand
- Distorted beliefs



Evidence on Inputs

- Multiple studies by Kremer et al. in Kenya
- Essentially none found any impact
- Limited exception: textbooks matter for the best performing children
- On the other hand, access to school definitely matters (e.g. Linden on village-based schools in Afghanistan)

Reading Materials (Plus Training)

- 4th grade classes in Philippines provided with a set of 60 age-appropriate storybooks (Abeberese, Kumler, and Linden 2011)
 - Two day training for teachers to conduct engaging activities to motivate children
 - Hour long daily reading activities for one month
 - 0.13 sd increase in reading test scores. Some residual effect 3 months after program ended (0.06 sd)

Evidence on Student-Teacher Ratio

- Very little evidence of a positive effect
- Early RCT in Udaipur (Banerjee, Kremer, Jacob)
 - 20 randomly selected schools received extra teacher
 - School attendance went up, test scores unchanged
- Balsakhi Programme in Mumbai and Vadodara (Banerjee et al. 2007)
 - Pull-out programme to focus on basic skills with low-performing children
 - No improvement in those left in the classroom
- Similar results in Kenya (Duflo, Dupas, Kremer)

Pedagogy: Remedial Education

- Balsakhi Programme in Mumbai and Vadodara (Banerjee et al. 2007)
 - High school-educated local tutors, paid 1000 Rs/month
 - Large effects on test scores of lowest performing children: 0.6 s.d. after two years



Pedagogy: Remedial Education

- Learning to Read (Banerjee et al. 2010)
 - Pratham trained local volunteers for a week in reading pedagogy and encouraged them to run after-school reading program
 - Increased literacy among 3-4 graders by 7.9 percent
 - Child who could read a letter at baseline were 26 percentage points more likely to read and understand a story compared to control

Pedagogy: Remedial Education

- Pratham's Read India Program (Banerjee et al. 2012)
 - Schools in Bihar and Uttarakhand received combination of:
 - Training and academic support to government school teachers
 - Specially designed learning materials for schools and villages, which target children with both basic and advanced skills
 - Use of village volunteers to supplement normal instruction and support children who need extra help during school or outside school hours
 - Only schools that received materials and training, and had volunteers outside of school hours saw large improvements in test scores (0.11 sd)
 - Results similar to program in Liberia (Piper and Korda 2011)

Pedagogy: Summer Camps

- In Summer 2008, government organized a one-month summer camp, which targeted low-performing children in standards 3-5
- After only one month, for children who actually attended the camp, reading scores increased by 0.24 sd



Pedagogy: Shishuvachan

- Literacy skills development program in Mumbai (He, Linden, and MacLeod 2009)
 - Implemented in public schools, a stand-alone reading class, and pre-schools
 - Yielded avg gains of 0.12-0.70 sd on basic literacy assessment
 - More effective as supplement to existing instruction rather than as a primary means of instruction
 - Programs based in existing institutions (public and pre-schools) provided more robust gains in student performance than the stand alone classes

Pedagogy: Remedial Education

- Mixed success of these programs suggest three main conclusions:
 - Pratham's basic pedagogy can work, not only with volunteers, but also with existing teachers when it is their exclusive task – as seen in the summer camp results.
 - Difficult to integrate Pratham's pedagogy into government school system without substantial shift in teacher priorities. Emphasis on covering syllabus may crowd out teacher ability to implement Pratham's focus on teaching child according to his/her ability.
 - But not impossible with enough focus as Shishuvachan shows.

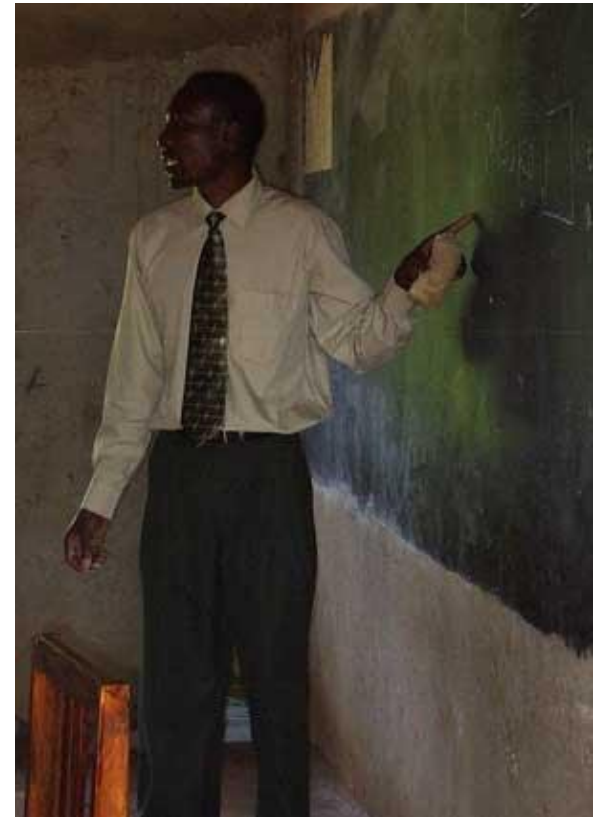
Computer-Assisted Learning

- Somewhat mixed results
- But technology can allow students to progress at their own speed, rather than at a rate dictated by teachers



Tracking

- Schools in Kenya: huge class sizes
- Extra local teachers hired
 - Some randomly chosen classes split based on past student performance
 - Others divided randomly
 - Children in both tracked classes did better at all points in the distribution (0.2 s.d.)



Demand

- Some evidence of low parent/child motivation
- Child attendance rates in ASER around 70 percent on days when school is open. As low as 30% in Bihar.
- If you are totally lost in class, hard to be motivated
- Only 8 percent of children attended after-school classes with volunteers
- No evidence that “school report cards” make any difference

Direct Evidence on Demand Effects

- Girls Scholarships in Kenya (Kremer, Miguel, and Thornton)
 - \$20 scholarship for girls in the top 15 percent of test scores
 - Effect of 0.2 s.d. on girls
 - Increase in teacher effort
 - Effect of 0.1 s.d. on boys and girls unlikely to win prize
- Prizes for early graders (Berry)
 - Tiny prizes based on literacy goals raised learning outcomes



Just Telling Parents Helps

- Jensen found that in Haryana telling parents about jobs in call centers (in an experiment) increased girls schooling and performance
- Jensen (in Dominican Republic) and Nguyen (in Madagascar) implemented experiments where parents were told about returns to schooling for people from their backgrounds
- A lot of parents are too pessimistic and the information makes them invest more in their children's schooling
 - 0.4 sd gains in Madagascar

Is It All Demand?

- One way to look at this is children who go to private schools (demand-driven)
- Controlling for family fixed effects, private school children still do better (Desai et al):
 - +0.31 s.d. for reading
 - +0.22 s.d. for arithmetic
- Probably some self-selection in that since parents discriminate
- No clear gains from private school vouchers in India

On the Other Hand...

- Much bigger effects from pedagogical interventions
 - In other words, private school teaching is much less effective, at least in improving the performance of the weakest children, than these often brief interventions by motivated but poorly trained teachers
- Suggests that demand is not the only problem
- What could be going on?

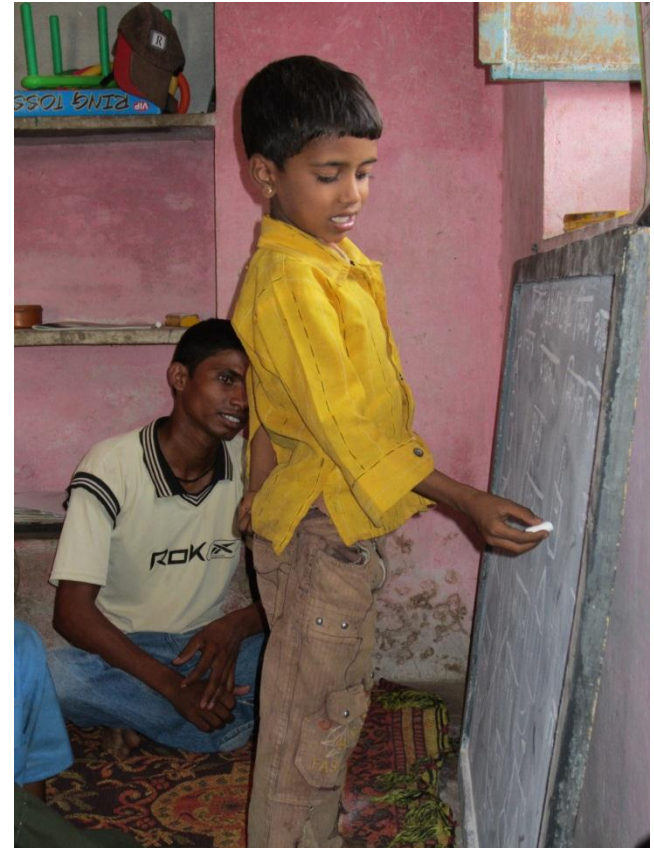
What Could Be Going On: Hypotheses

- The universally shared (public/private) pedagogy is grossly inappropriate
- Based on covering material rather than learning



What Could Be Going On: Hypotheses

- Results consistent with a theory that parents (incorrectly) see schooling as a lottery with long odds
- Parents and teachers take ability mostly as a given, focus on top students only
- Self-fulfilling prophecy: kids who miss something early on never catch up. Everyone decides they are stupid, gives up.



What Could Be Going On: Hypotheses

- This helps explain:
 - Why being in school generates learning but decreasing student-teacher ratios does not
 - Why textbooks only work for the best children
 - Why remedial education is so effective
 - Why tracking works
 - Why government teachers perform so differently in summer schools

Policy Lessons and Recommendations

- A focus on basic skills (as against content) in early grades, including a designated time each day devoted to reading activities
 - Teaching at the right level programmes can be implemented in-school or after school hours
- Testing children to determine their current level and adapting lesson plans to fit this level
 - Additional materials (textbooks, reading books, interactive charts, computers (?) etc.) are beneficial if targeted at the right level and supplemented with adequate teacher training on how to use them effectively

Policy Lessons and Recommendations

- Tracking or grouping students by initial learning level, rather than age or grade level, or pulling out the lowest performing children for more focused instruction
 - Volunteers can be effective in allowing this to happen, even with very little training, at least in early grades.
 - Breaking up the age cohorts by learning levels in that subject
 - De-stigmatize repeating subjects
- A strategy for integrating lesson plans focusing on basic skills into the current, standard curriculum
 - Learning camps can provide opportunity to focus on developing basic skills for weaker performing students outside of standard curriculum.

Policy Lessons and Recommendations

- Getting parents to believe in their children
 - Every child can learn
 - Small frequent prizes can help focus on the immediate learning goals rather than the school leaving exam
- Getting the education system to focus on basic learning goals
 - Testing of where the children are is essential
 - But test results need not be used punitively

Areas for Innovation

- Incorporating a focus on basic skills into the current government curriculum
- Best delivery model for basic skills training
- Degree of freedom teachers should they be given to determine the teaching plans
- Design of learning camps and other supplementary activities.
- Use of interactive technology tailored to children's individual learning level
- Use of more enjoyable (but perhaps less “educational”) reading materials

Thank you



Teacher Community Assistant Initiative (TCAI)

Stephen Adu, *Ghana Education Service*

Maame Nketsiah, *TCAI*

26 July 2012

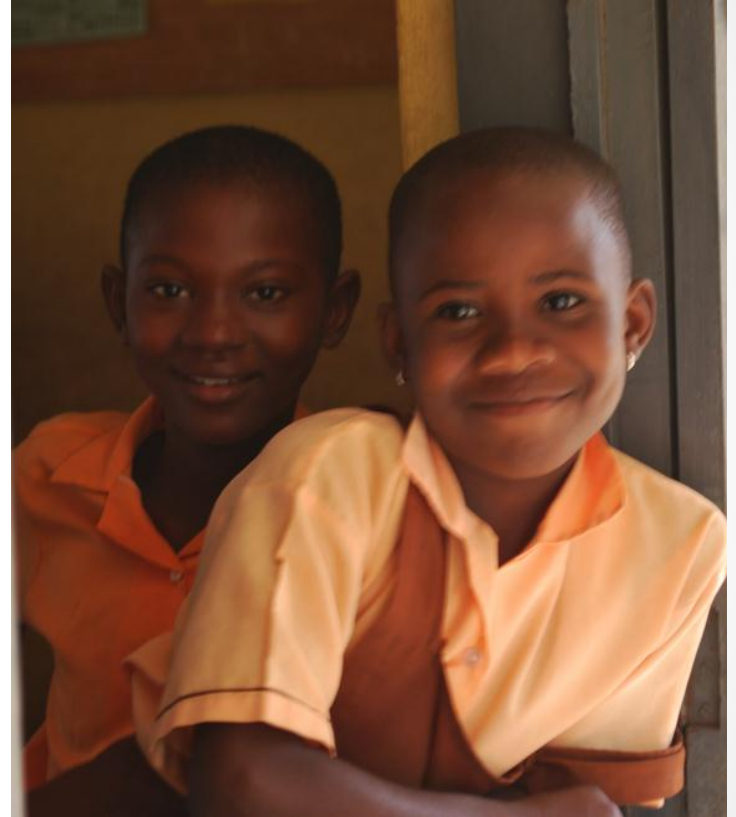
Motivating Questions

- **Despite significant education spending, many students in Ghana's primary schools never achieve basic literacy and numeracy**
 - ➔ What programs can provide high value for money in improving student achievement?
- **Evidence suggests that assistants teaching targeted lessons to lowest achievers can improve early-grade reading and math skills**
 - ➔ Can this effect be replicated under the school conditions in Ghana?
 - ➔ Are targeted lessons most effective when complementary or supplementary to normal class lessons?
 - ➔ Is effect caused by the smaller class sizes from the addition of an assistant?
 - ➔ Could we achieve same effect from providing in-service teacher training on targeting lessons?

What is TCAI?

Combines successful components of different programs

- Simple assessment of pupils by teachers/assistants (based on ASER tests)
- Children taught by ability level
- Focused time on literacy and numeracy
- Child centered pedagogy/learning materials
- Use of community assistants who are given minimal training and some ongoing support



Adapting to Local Context

- Wide support
 - Working within existing system (GES structure, NYEP)
 - TCAs hired through NYEP, all from local community
 - Partnership with the Teachers Union
 - Involves local partners such as School for Life (training and materials)
- Financially sustainable
 - NYEP: already a system to pay for the assistants
 - Relatively low-cost program: Small proportion of education budget

Impact Evaluation Design

Nationally representative sample
of 500 schools across 42 Districts.

*Allocated **randomly** into
one of five groups:*

Intervention 1

TCAs teach
remedial
curriculum
during school

Intervention 2

TCAs teach
remedial
curriculum
after school

Intervention 3

TCAs randomly
split class with
teacher, and
review lessons

Intervention 4

Train teachers
only in testing
and targeting
lessons

Control

(No new
program
introduced)

Summary of Preliminary Results

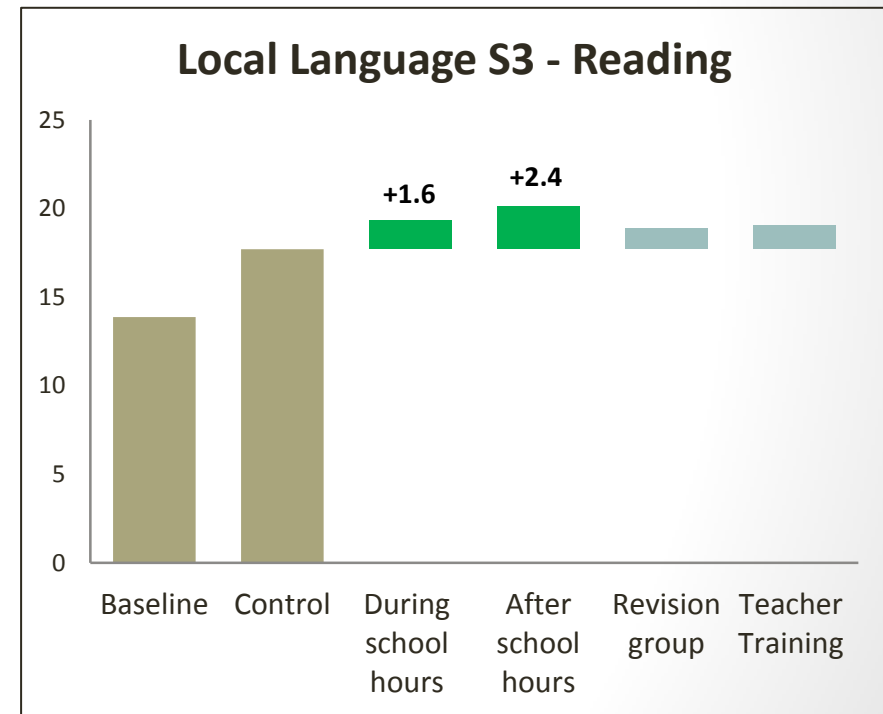
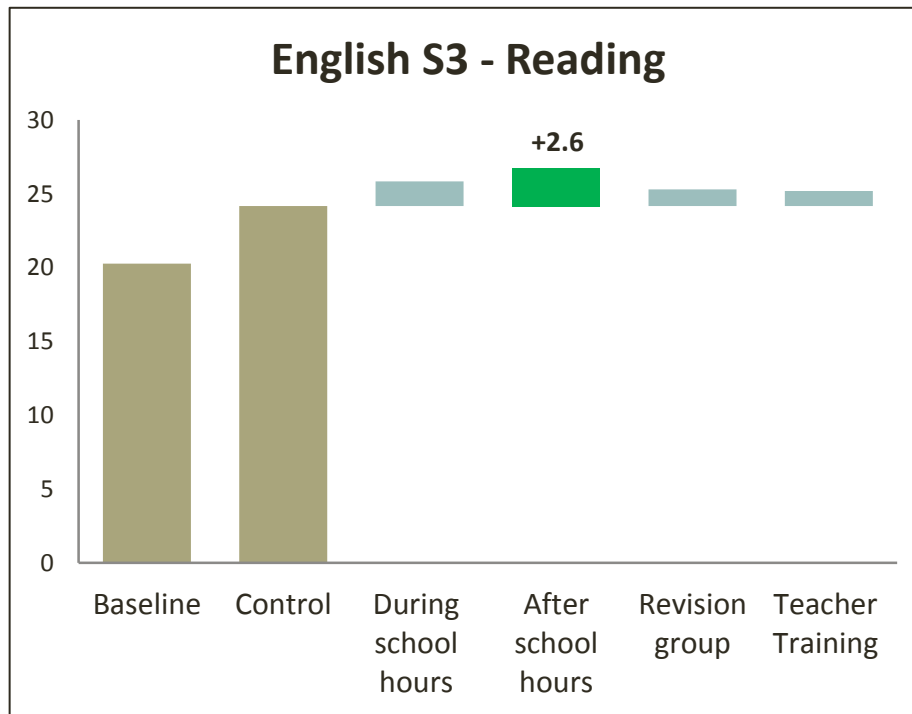
- 1 **In-school and after-school remedial program caused the largest increases in student test scores**
 - The test score impacts were primarily driven by improvements in basic literacy and numeracy skills
- 2 **After-school remedial program was slightly more effective than the during-school one, particularly in deprived districts**
 - Lack of infrastructure in deprived schools may have prevented assistants from finding necessary space
 - After school program allowed for more focused learning time
- 3 **Simply training teachers to target their lessons, or reducing class size by adding an assistant, had minimal impact on test scores**
 - Suggests the impact of remedial program was driven by the combination of intensive, basic-skills instruction with low-performing pupils

What Was Tested?

- **Oral English and local language tests, including sections on:**
 - 1) Listening, reciting, and conversation
 - 2) Grammar and vocabulary
 - 3) Reading and pre-reading
- **All tests included sections on most basic skills, which were the focus of the remedial pedagogy**
- **Literacy Basic Skills –**
 - **Level 1 – Reading & sound recognition of Alphabets**
 - **Level 2 – Reading two and three letter words**
 - **Level 3 – Reading more complex sounds and longer words**

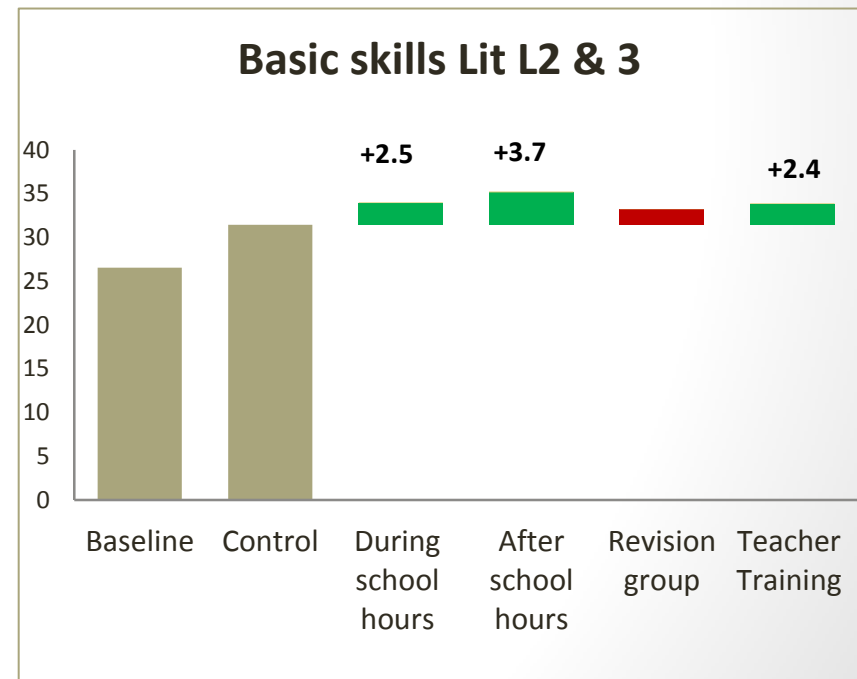
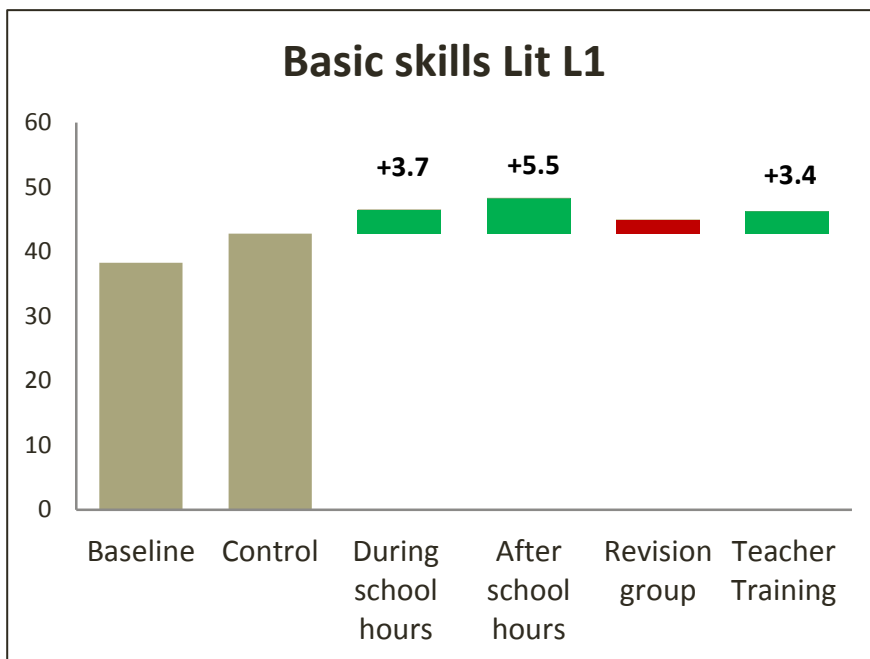
Literacy: Reading and Pre-Reading

- Remedial program during and after school affected reading and pre-reading, the areas the pedagogy targeted



Basic Skills: Literacy

- Remedial education after schools hours, during school hours and teacher training all had a positive effect on basic literacy skills.
- The highest effect was for remedial education after school hours: scores increased by 12.6 percent.



Summary of Results

- 1 Intensive remedial classes deliver improved learning outcomes
 - Improvements are highest in basic skills
 - Highest impact in after school program, then during school program
 - Teacher training also had positive effect, but only on basic literacy in upper half of the class
 - Results are comparable to other successful educational interventions after one year
- 2 Improved learning outcomes achieved despite short time of teaching (~10 weeks) before survey and other implementation challenges
 - Results stronger for during school TCA intervention where school conditions were good
- 3 Much larger potential exists that can be achieved by optimizing program.
 - Increasing quality of teaching of assistants to the standard of better performing ones
 - Increase time on task is increased
 - Improve monitoring
 - Increase assignment rate to the remedial class from current rate of 34% to 50%

What has been learned?

- It is important to generate *evidence for decision making*:
 - the most effective intervention is not always intuitively so;
 - context matters
- Simple *assessment* systems can provide feedback on a child's competency on a continuum towards grade level proficiency
- Targeting learning levels is important: focused *time on basic skills* for low level learners can lead to rapid skill acquisition
- A *moderately trained community member*, with support, a script, materials and follow-up can help children become literate and numerate

Next Steps...

- **Lessons from the programme could be incorporated into Ghana's education programming in several ways**
 - Re-orient the existing “community education teaching assistants” program, to focus on providing remedial lessons for lowest achievers
 - Engage with communities to find alternatives to recruiting and deploying assistants
 - Consider how to deploy resources in deprived vs. non-deprived districts, to have the greatest impact
- **Several next steps are planned to encourage scale-up**
 - Improve program functioning, consider long-term institutionalization
 - Test new questions related to early grade reading
 - Second year of evaluation, to generate better estimates of impact
 - Cost-effectiveness analysis, enabling comparison with other effective programs to determine which provides greatest value for money