

IDinsight

SAMBODHI



Scaling up remedial education in India: Evidence from two RCTs

What Works Hub for Global Education Conference

September 25, 2024



1. Program context

Replication crisis in education?

Some programs fail to maintain impact at scale...

- ❌ Loss of implementation fidelity
- ❌ Lack of intensive monitoring
- ❌ Spillovers (negative)
- ❌ Political backlash

- Bold et al (2018) - Government
- Banerjee et al (2016) - BR/UK
- Araujo et al (2021)

...Others succeed

- ✅ Learning over time
- ✅ Investment in systems
- ✅ Spillovers (positive)
- ✅ Political buy-in, complementarities

- Bold et al (2018) - NGO
- Banerjee et al (2016) - HR/UP
- Angrist et al (2023)

Case study of scaling: The Educate Girls program

Gyan ka Pitara (GKP) Program

Program design principles

- Universal Design for Learning
- Structured pedagogy

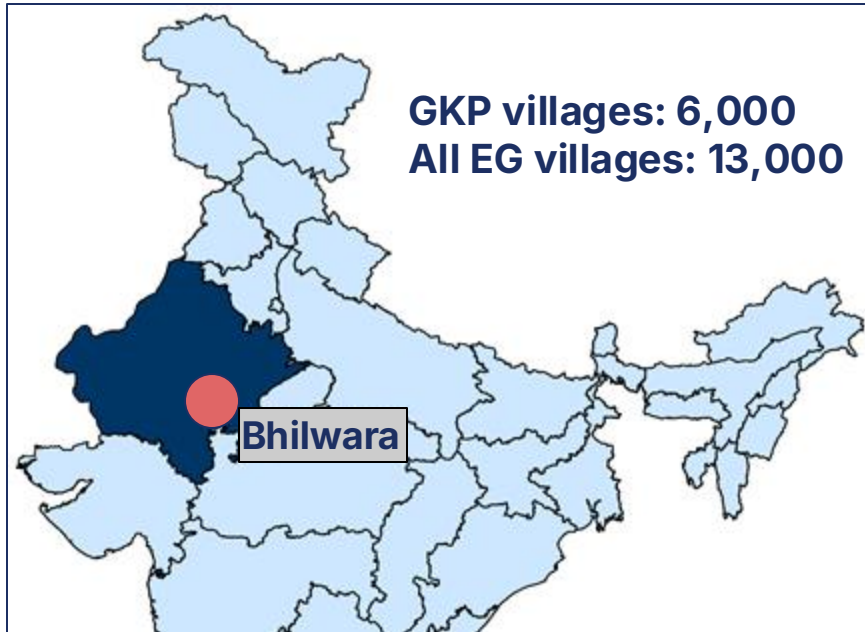
Program delivery

- In-school remedial instruction for Grades 3, 4, 5
- Hindi, Math, English
- Targeted, group-based instruction
- 2 hrs per day, 3 days per week
- Delivered by volunteers (Team Balika) and field staff

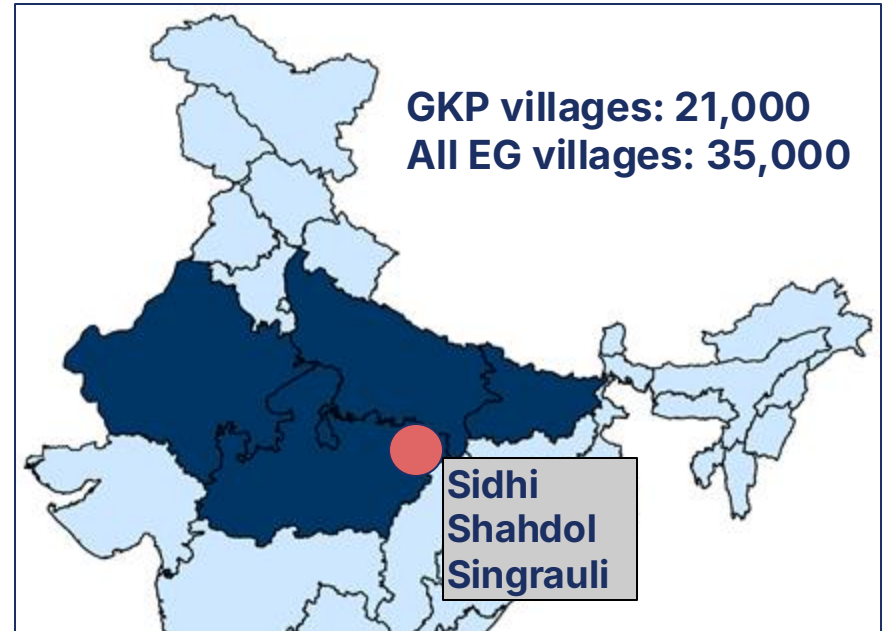


Educate Girls scale-up with RCT locations

By end of RCT #1 (2018)



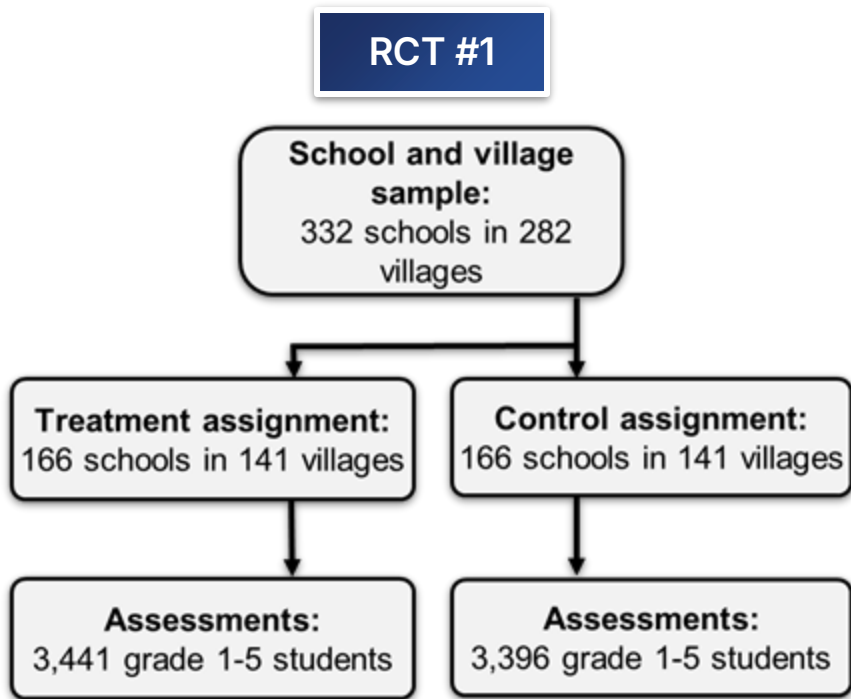
By end of RCT #2 (2024)





2. RCT designs

Sampling and randomization



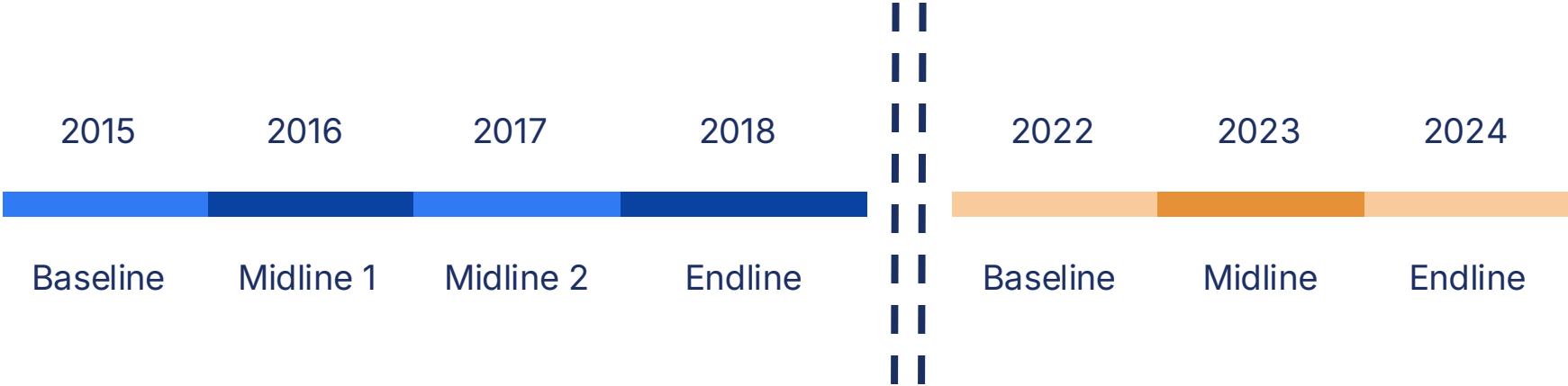
RCT #2

	Base	End 1	End 2
Cohort 1 schools			
T1	53	53	53
T2	53		53
C	53	53	53
Cohort 2 schools			
T1		54	54
C		54	54

Timelines and data collection rounds

RCT #1

RCT #2



Learning assessment: Modified ASER tool

Hindi

Levels	Points
Basic	1
Letters	2
Simple words*	2.5
Word recognition	3
Simple sentence*	3.5
Grade 1-level text	4
Grade 2-level text	5

Math

Levels	Points
Basic	1
Numbers 1-9	2
Number value*	2.5
Numbers 10-99	3
Addition (1)*	3.2
Subtraction (1)*	3.4
Place value*	3.6
Addition (2)*	3.8
Subtraction (2)	4
Multiplication*	4.5
Division	5

English

Levels	Points
Basic	1
Capital letters	2
Small letters	3
Consonant/vowel*	3.5
Simple words	4
Simple sentences	5

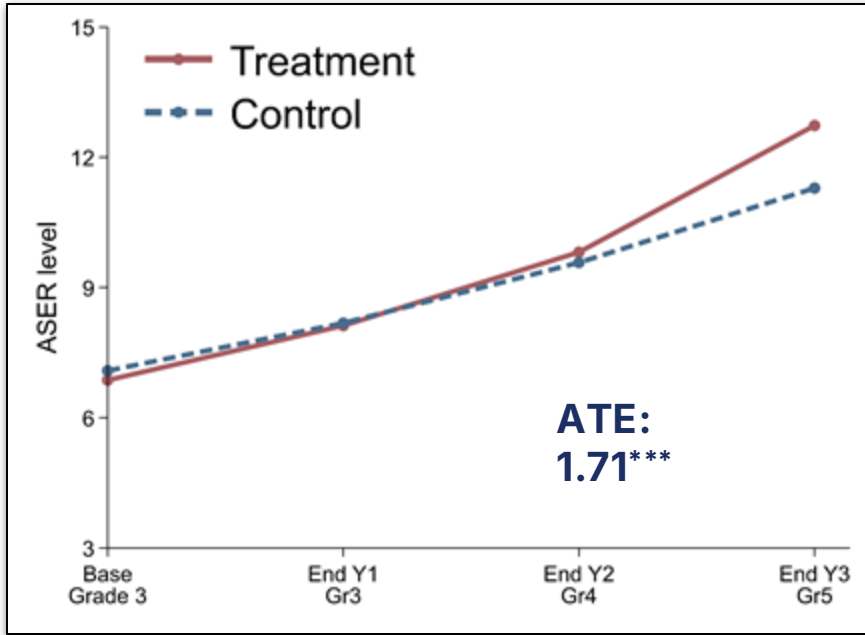
*** Added for RCT #2**



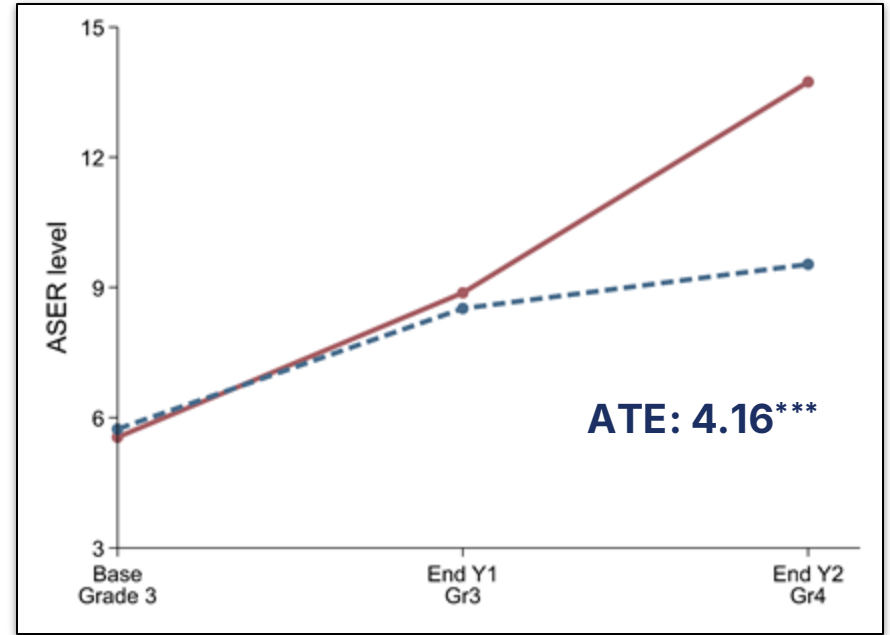
3. RCT results

Grade 3 assessment scores over time

RCT #1

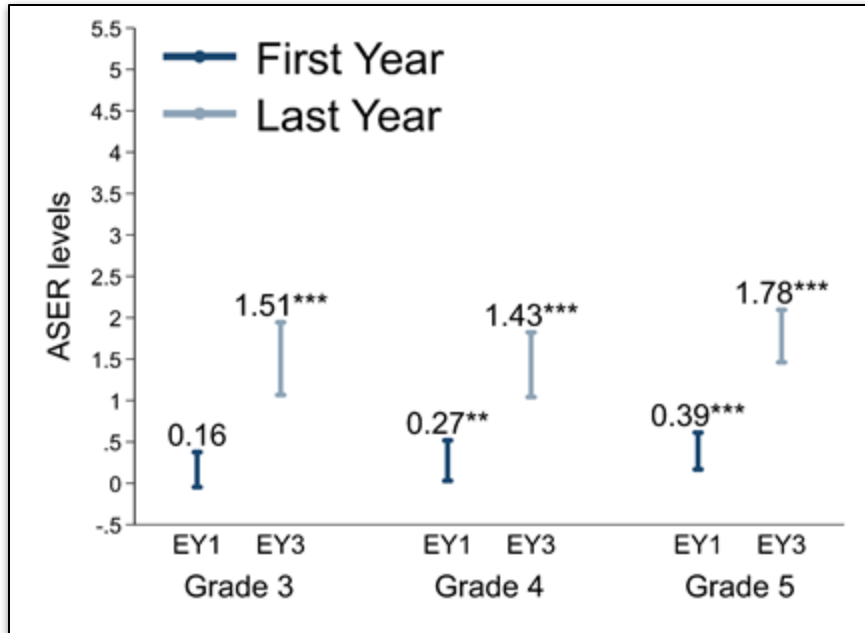


RCT #2

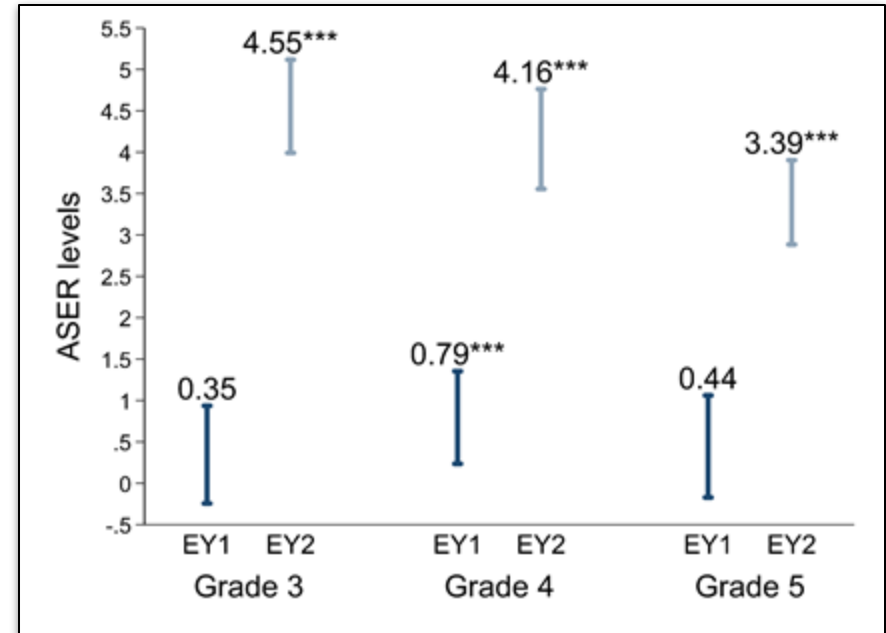


Effects by grade

RCT #1

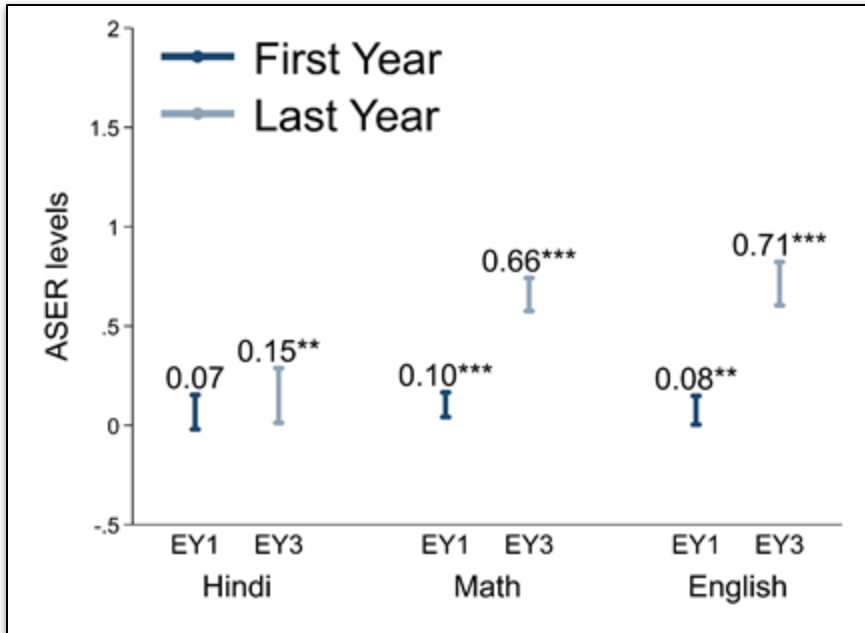


RCT #2

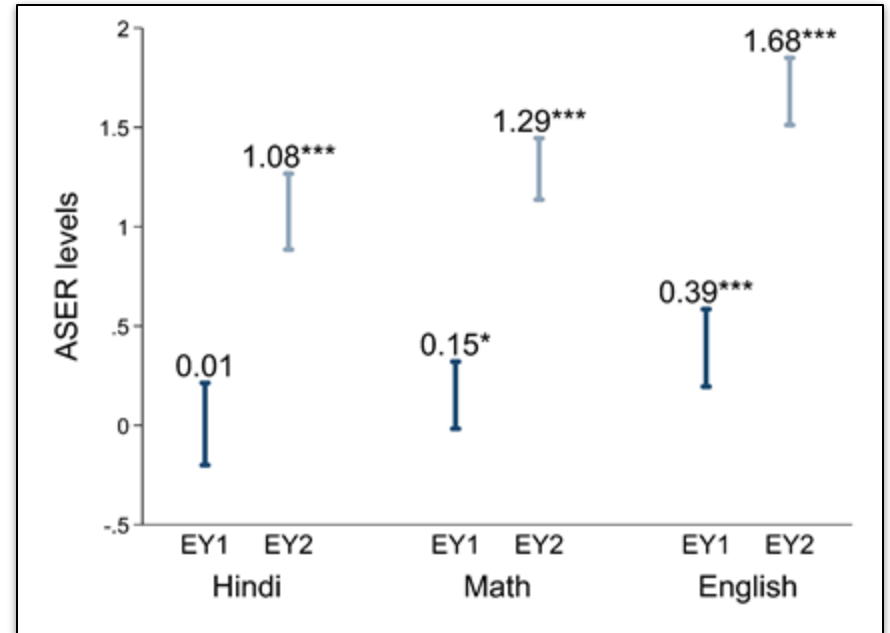


Effects by subject

RCT #1

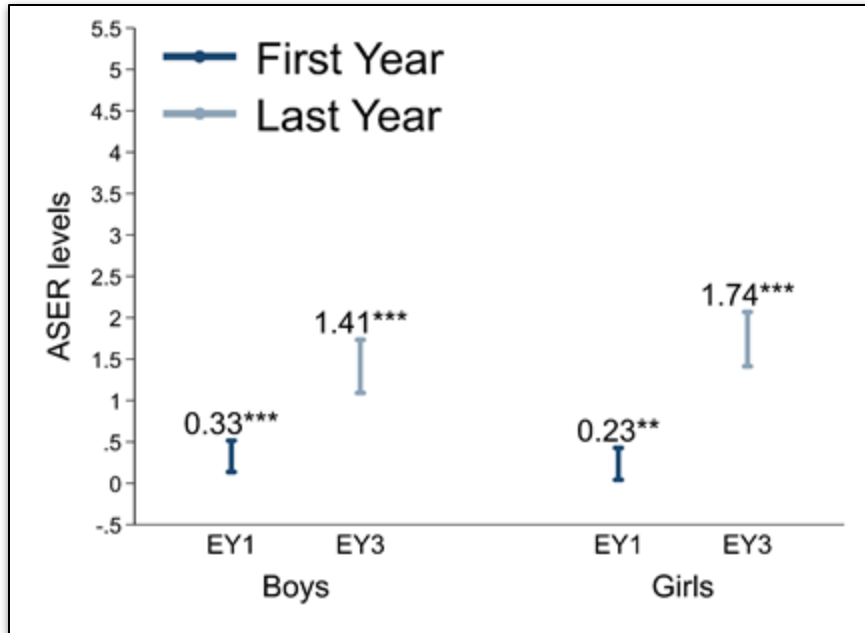


RCT #2

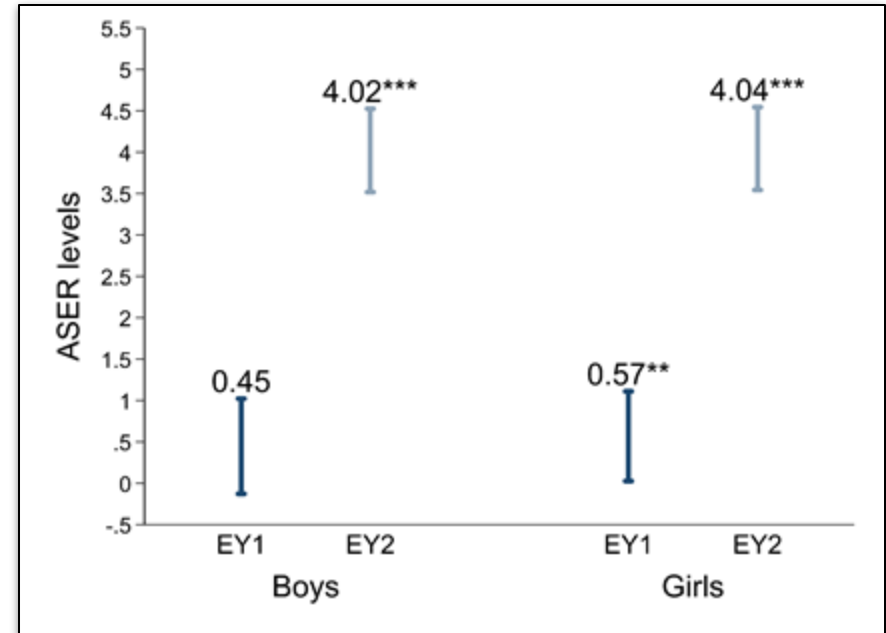


Effects by gender

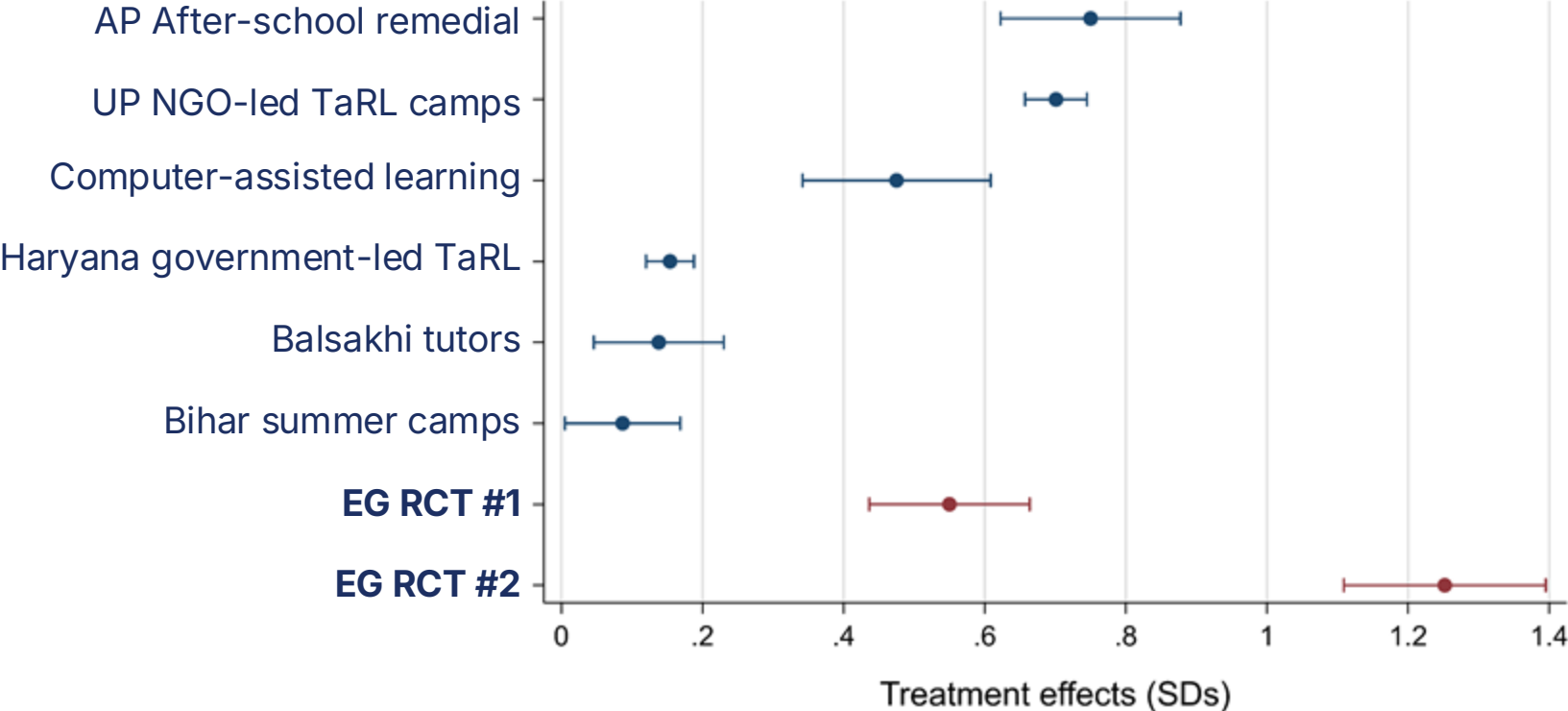
RCT #1



RCT #2



Comparing std effects with other programs in India



4. Insights



Effects grow over time...

...within experiments

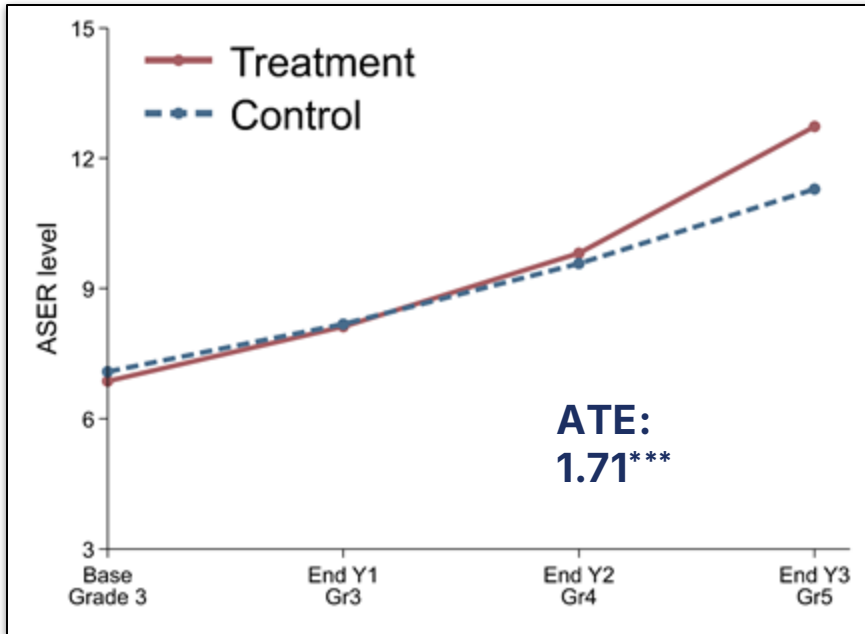
- First year devoted to groundwork
- Earlier program start after Y1
- Outcomes-focused funding
-> Experimentation with program design

...across experiments

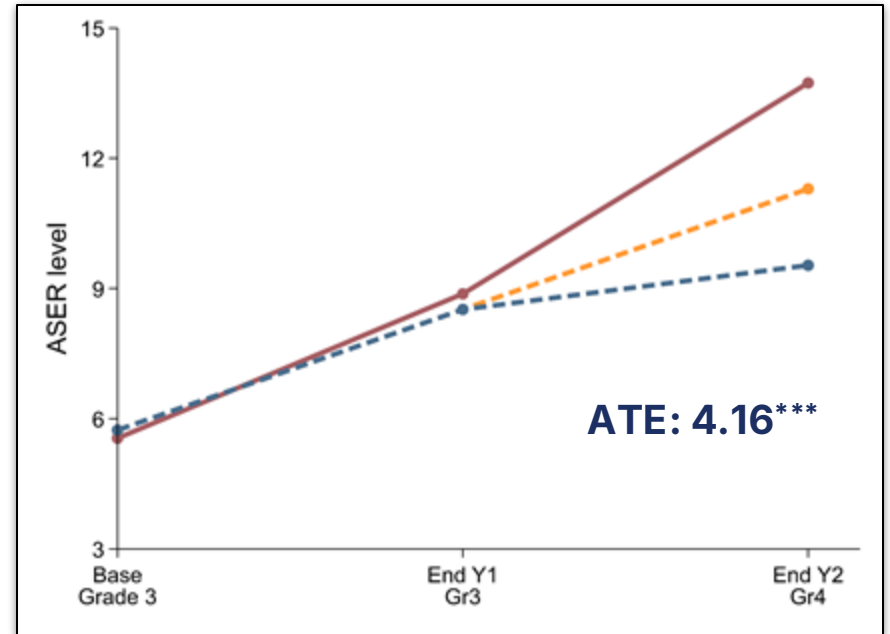
- Learning-by-doing
-> Stronger program design
- Investment in systems
- Population differences
- Complementarities with government delivery

Offsetting systemic shocks in Year 2

RCT #1



RCT #2



Increasing returns to scale

Increasing returns to scale are possible with learning loops and systems investments

At-scale, a program can complement government delivery, further raising impact

Different models of scale:

- NGO growth
- Government partnership: technical assistance (e.g. capacity building, training-of-trainers), supplementary programming
- Partnerships with local NGOs
- All of the above



Thank you



5. Appendix



Example assessment tasks

Hindi - Grade 2 text

अमन और विमला स्कूल में एक साथ पढ़ते थे। कक्षा में दोनों का क्रमांक आगे पीछे ही था। अमन को अंग्रेजी पढ़ना ज्यादा अच्छा लगता था और विमला को चित्र बनाना। सभी बच्चे स्कूल मैदान में साइकिल से चक्कर लगाया करते थे। विमला के पास साइकिल नहीं थी इसलिए अमन उसे साइकिल पर घर छोड़ दिया करता था।

Math - Addition (1)*

$4 + 2 \square \quad 3 + 3 \square$

$5 + 3 \square \quad 8 + 1 \square$

$7 + 2 \square \quad 0 + 6 \square$

English - CVC words

bug cob

mug can

big pet

Baseline balance tables

RCT #1

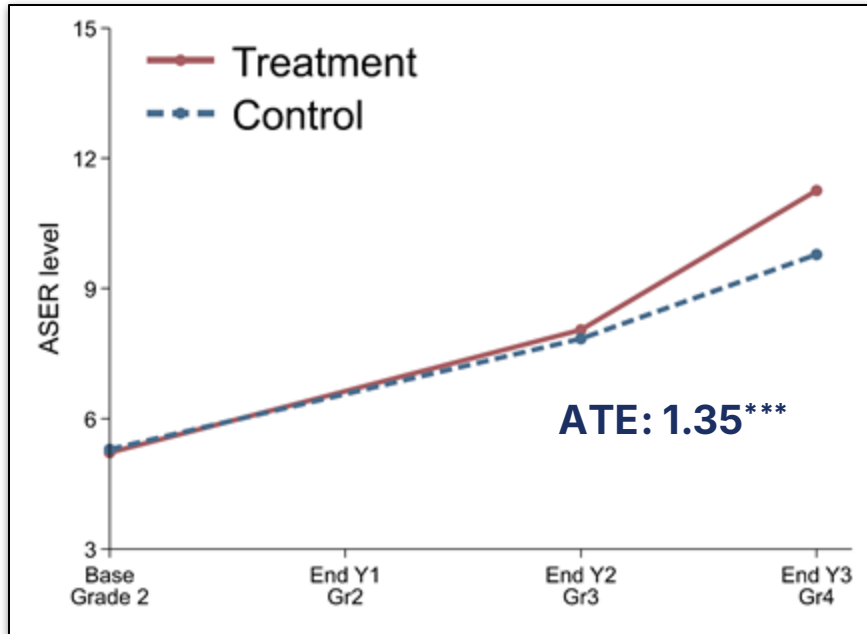
Variable at Baseline	Control Mean [Std Error]	Treatment Mean [Std Error]
Hindi Level (1-6)	2.647 [0.057]	2.593 [0.050]
Math Level (1-5)	2.387 [0.032]	2.326 [0.029]
English Level (1-5)	1.905 [0.038]	1.871 [0.035]
Total Level (3-16)	6.939 [0.118]	6.789 [0.104]
Child Grade	2.980 [0.028]	3.019 [0.026]
Age	8.100 [0.035]	8.102 [0.038]
Female	0.482 [0.010]	0.497 [0.010]
SC_ST	0.471 [0.030]	0.478 [0.029]
Observations in Sample	3,396	3,441

RCT #2

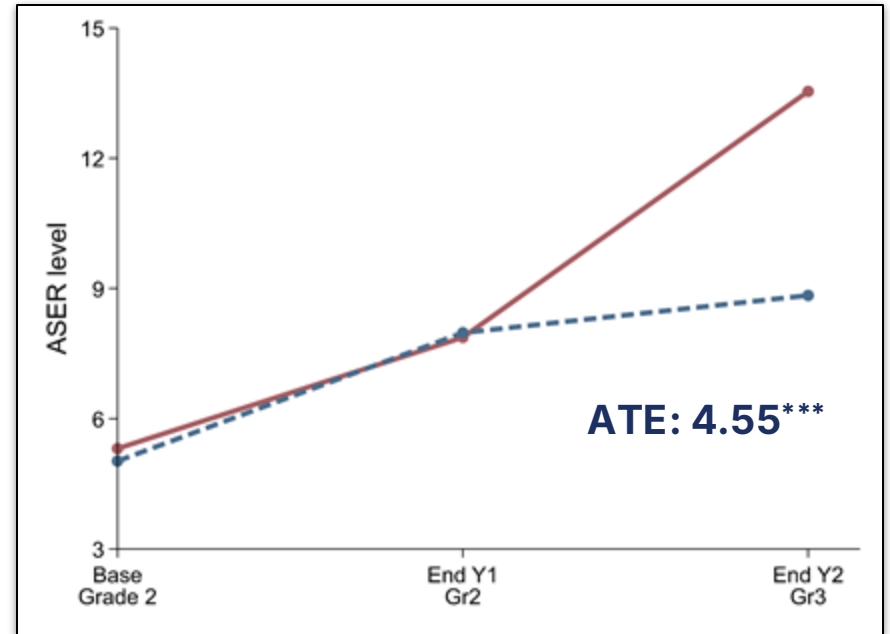
	Control mean	Treatment1 mean
Baseline scores		
Overall	5.89	6.09
Hindi	1.96	2.07
Math	2.22	2.27
English	1.70	1.76
Gender		
Boys	0.43	0.46
Girls	0.57	0.54
Grade (in 2023-24)		
3	0.32	0.29**
4	0.29	0.29
5	0.31	0.36***
Out-of-school girls	0.07	0.05
District		
<u>Shahdol</u>	0.36	0.34
<u>Sidhi</u>	0.21	0.26
<u>Singrauli</u>	0.43	0.41

Grade 2 assessment scores over time

RCT #1

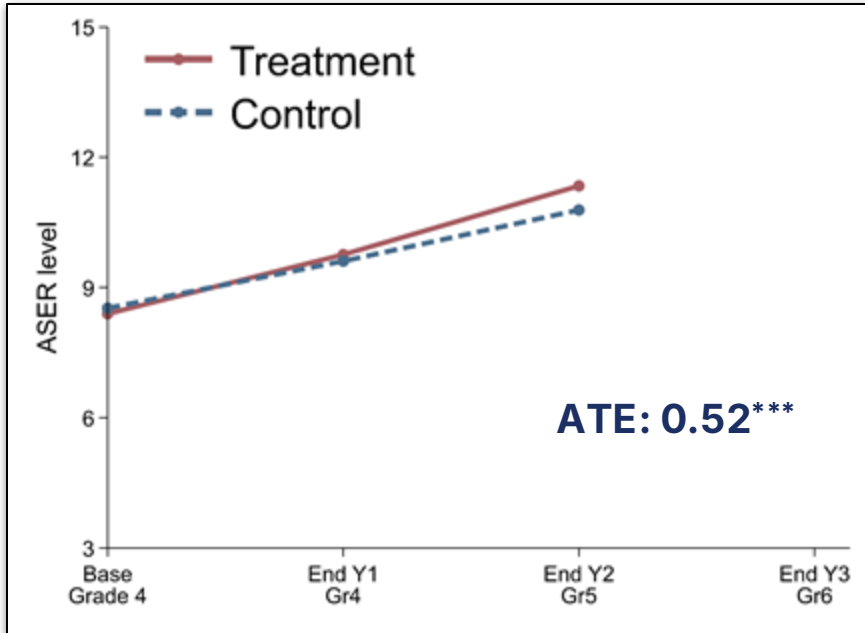


RCT #2

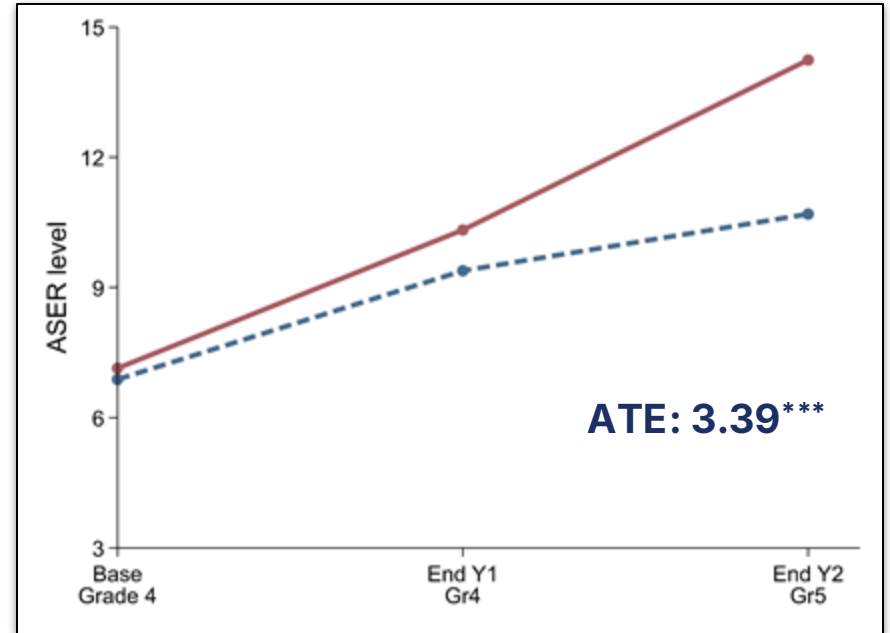


Grade 4 assessment scores over time

RCT #1



RCT #2



RCT #2: Two-year effects of GKP

	Control gains	Treat effect	Treat effect as % of control gains	Std Treat effect	Treat effect (Year 1)
Total	3.80	4.04***	106%	1.25	0.53**
<i>By subject</i>					
Hindi	1.54	1.08***	70%	0.74	0.01
Math	1.10	1.29***	117%	1.11	0.15*
English	1.16	1.68***	145%	1.44	0.39***
<i>By grade</i>					
3	3.82	4.55***	119%	1.41	0.35
4	3.80	4.16***	110%	1.29	0.79***
5	3.81	3.39***	89%	1.05	0.44
<i>By gender</i>					
Boys	3.78	4.02***	106%	1.25	0.45
Girls	3.81	4.04***	106%	1.25	0.57**
<i>By district</i>					
Shahdol	3.16	4.53***	143%	1.40	0.64*
Sidhi	4.98	2.65***	53%	0.82	0.80
Singrauli	3.74	4.42***	118%	1.37	0.28

RCT #2: One-year effects of GKP

	FC_2223 schools T1 vs C (2023 results)	FC_2223 schools T2 vs C (2024 results)	FC_2324 schools T1 vs C (2024 results)
Total scores	0.53**	4.30***	3.25***
<i>By subject</i>			
Hindi	0.01	1.15***	0.75***
Math	0.15*	1.35***	1.15***
English	0.39***	1.76***	1.34***
<i>By grade</i>			
3	0.35	4.95***	3.50***
4	0.79***	4.24***	3.59***
5	0.44	3.58***	2.77***
<i>By gender</i>			
Boys	0.45	4.23***	3.16***
Girls	0.57**	4.35***	3.33***
<i>By district</i>			
<u>Shahdol</u>	0.64*	4.81***	3.48***
<u>Sidhi</u>	0.80	2.97***	3.31***
<u>Singrauli</u>	0.28	4.57***	3.01***

* p < 0.10, ** p < 0.05, *** p < 0.01

Attrition

RCT #1

Year	Attrition rate	
	Treatment	Control
1	1.6%	2.0%
2	4.9%	4.7%
3	12.8%	13.1%

RCT #2

	FC_2223	FC_2324
School Types		
Control	13%	15%
Treatment 1	16%	10%
Treatment 2	23%	N/A
Gender		
Boys	18%	12%
Girls	17%	13%
Grade (in 2023-24)		
3	22%	14%
4	15%	14%
5	15%	11%
District		
<u>Shahdol</u>	18%	17%
<u>Sidhi</u>	20%	8%
<u>Singrauli</u>	15%	13%