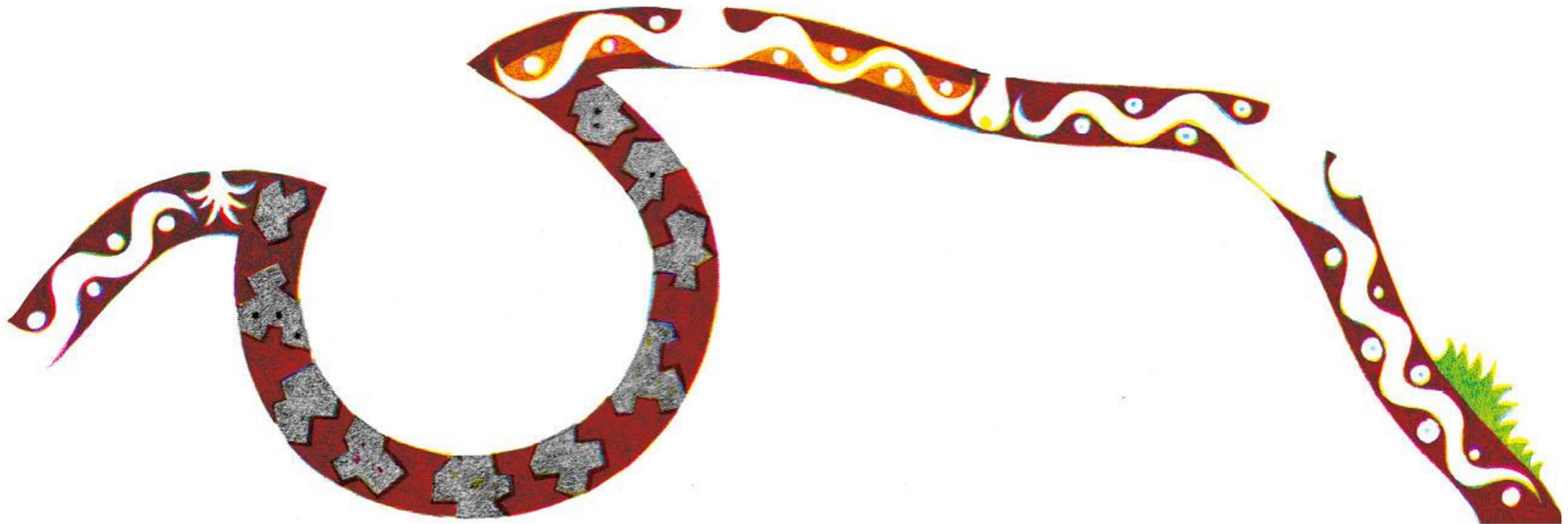
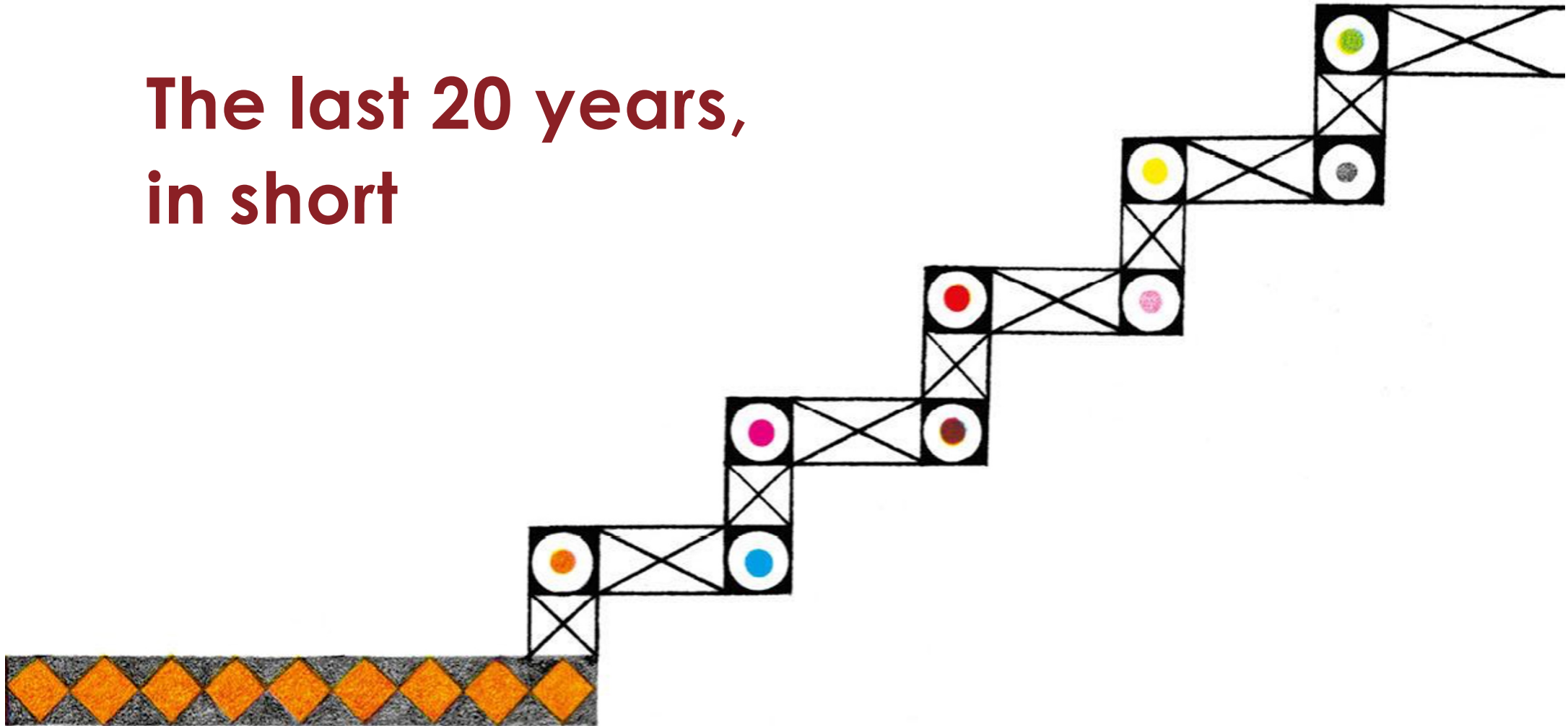


Education

Esther Duflo



**The last 20 years,
in short**



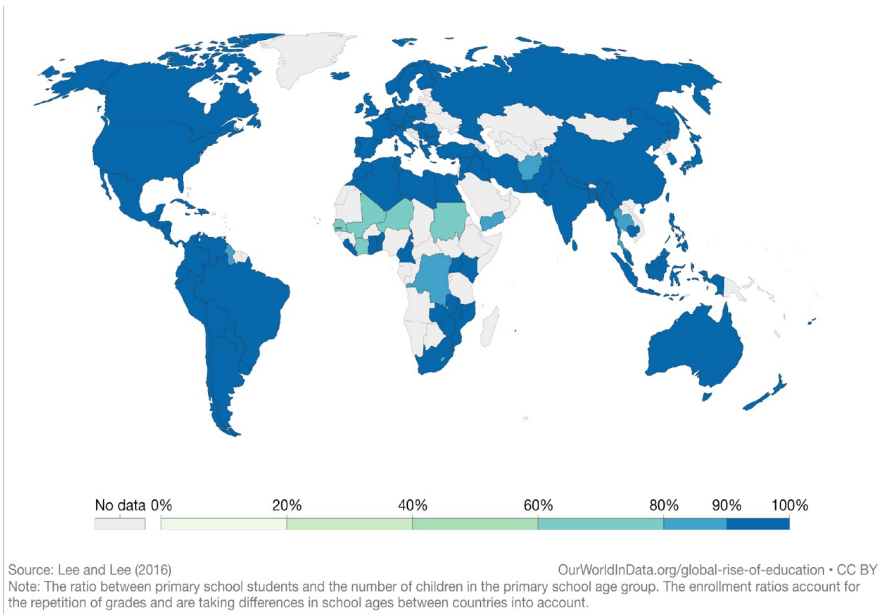


Mais sa mère ne lui laisse pas le choix : elle doit aller en classe.

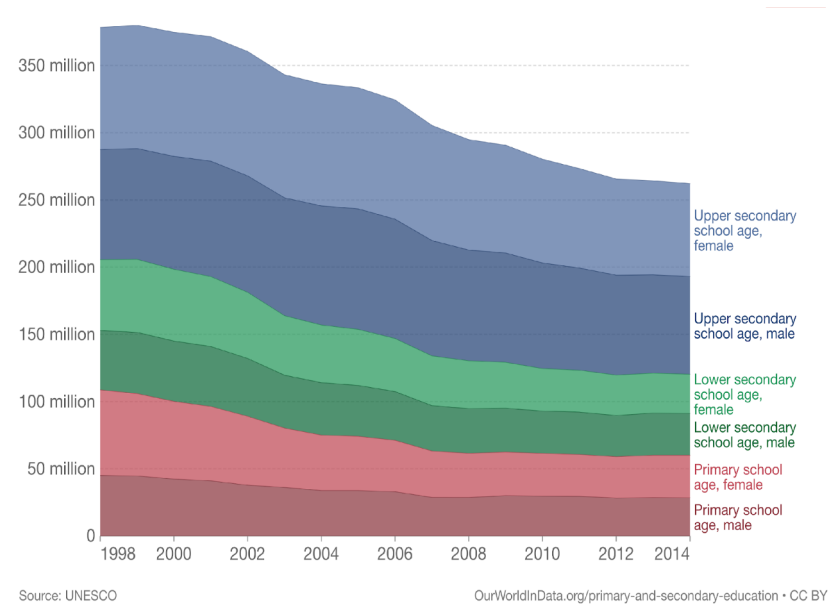


Nilou est en retard alors, même si l'école est proche, elle doit se dépêcher.

Proportion d'enfants en âge de fréquenter l'école primaire qui sont scolarisés, 2010



Nombre d'enfants non scolarisés, Monde, 1998 à 2014



La plupart des enfants dans le monde étaient scolarisés avant la pandémie de COVID-19.

Je m'appelle **A**mbra, **B**onjour à tous, **C**'est un plaisir pour moi **D**'être là avec vous .

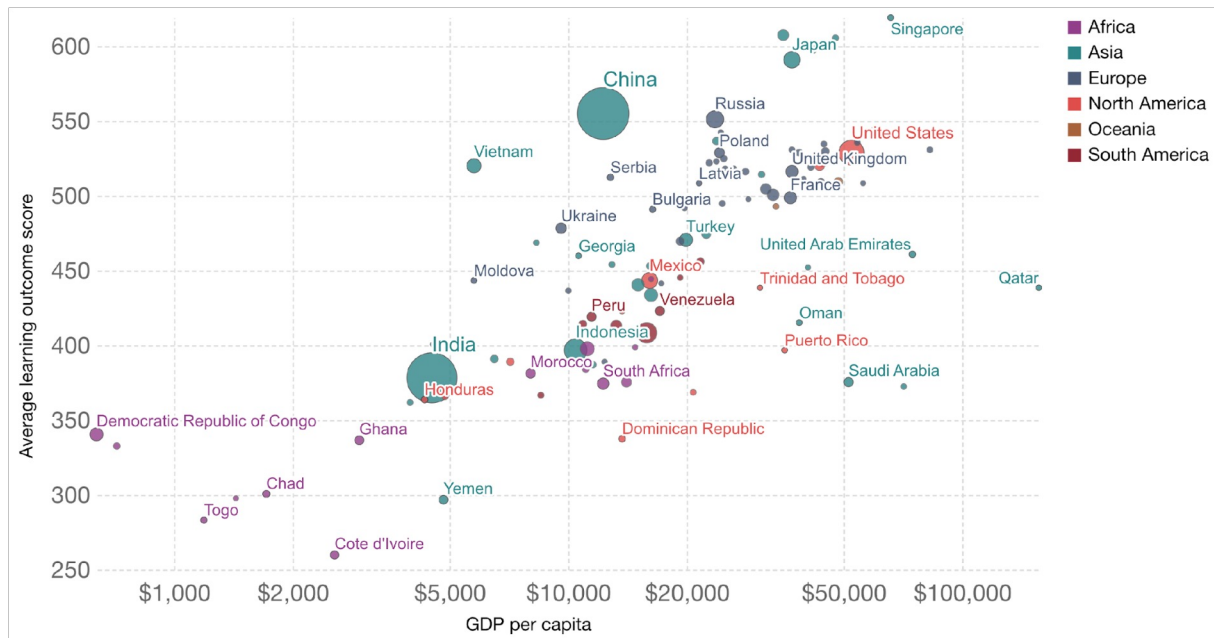


Venez sur la place avec vos parents, j'ai un petit test de lecture pour tous les enfants .

1,2,3, on y va .!



Nilou a peur que les autres s'aperçoivent qu'elle ne sait pas lire.



Source: Altinok, Angrist, and Patrinos (2018), Maddison Project Database 2020 (Bolt and van Zanden (2020))

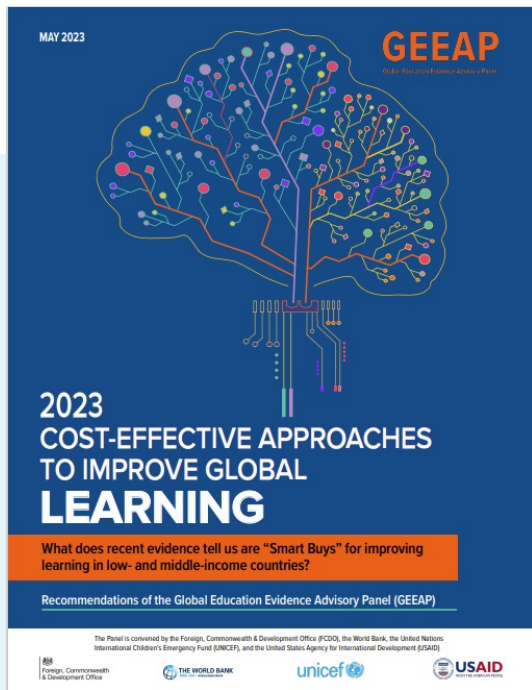
CC BY

Average learning outcomes vs GDP per capita, 2015

The vertical axis shows average scores across standardized, psychometrically-robust international and regional student achievement tests. To maximize coverage by country, tests have been harmonized and pooled across subjects (math, reading, science) and levels (primary and secondary education). The horizontal axis shows GDP per capita after adjusting for price differences between countries and across time.

Our World
in Data

**Poor children learning has been documented everywhere
(and has not much improved)**



- ‘What works’ in a **cost-effective way at scale in low- and middle-income countries.**
- Based on systematic search of over 13,000 studies, resulting in over 400 studies selected
- “simple” outcomes: “learning adjusted years of schooling” (Angrist et al.)

**Poor children learning has been documented everywhere
(and has not much improved)**

The GEEAP classifies interventions in different categories



Great Buys

- Supporting teachers with **structured pedagogy**
- **Targeting teaching instruction by learning level**, not grade [TARL]
- Providing **information on the benefits, costs, and quality** of education

Good Buys

- Providing **parent-directed early childhood stimulation** programs
- Providing **quality pre-primary** education
- **Reducing travel times** to schools
- Giving **merit-based scholarships** to disadvantaged children and youth
- Administering **school-based mass deworming**

2023 Geeap Smart Buys Report



What comes out of GEEAP

Promising but Limited Evidence

- Using **software that allows personalized learning** and adapts to the learning level of the child (where hardware is already in schools)
- Leveraging **mobile phones** to support learning
- ★ Augmenting teaching teams with **community-hired staff**
- **Involving communities** in school management
- Targeting **interventions towards girls**
- ★ **Safeguarding** students from **violence**
- ★ Teaching **socio-emotional and life skills**
- ★ Providing **mass treatment for common health conditions** including free eyeglasses, multi micronutrients, and preventative malaria treatment

★ New addition in the report

2023 Geeap Smart Buys Report

Intervention categories in GEEAP report (ctd)

Effective but Relatively Expensive

- **Transferring cash** (as a tool for improving learning)
- ★ **Feeding** in Primary Schools

Bad Buys

- Investing in hardware like laptops, tablets and computers **alone**
- Providing additional inputs alone, **when other issues are not addressed**, including: textbooks, additional teachers to reduce class size, school buildings, grants, salary, libraries

Intervention categories in GEEAP report (ctd)



Chacun apprend désormais à son rythme. C'est plus facile et ça devient même agréable.

Reasonable sense of congruence between studies, and a story that ties them together

« Tyranny of the curriculum » that are inadapted to heterogenous children present in school.

In principle we know what to do: go back to what kids need to learn. The issue is to get it done.

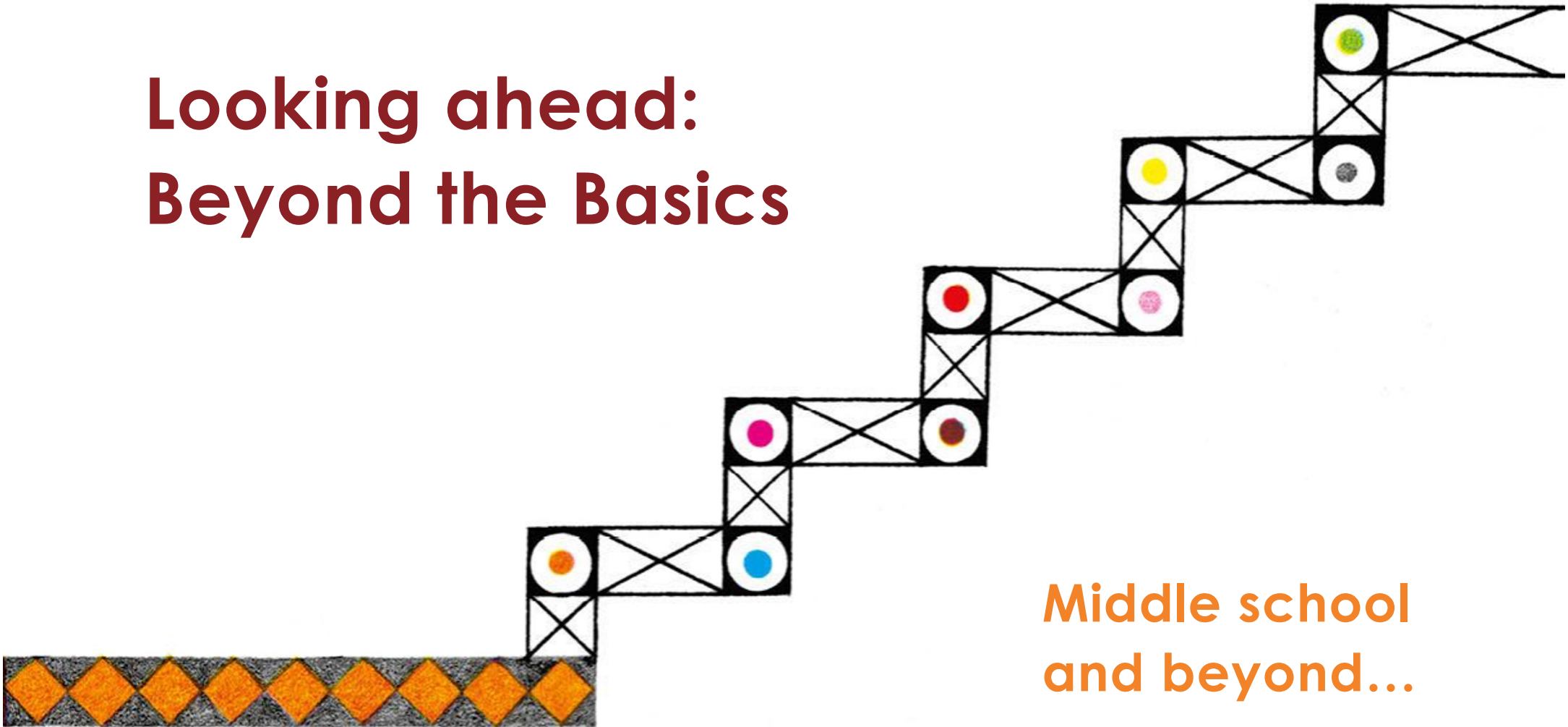
The solutions that work at the primary (fundamental skill levels) leave little autonomy to teachers:

- TaRL
- scripted lessons



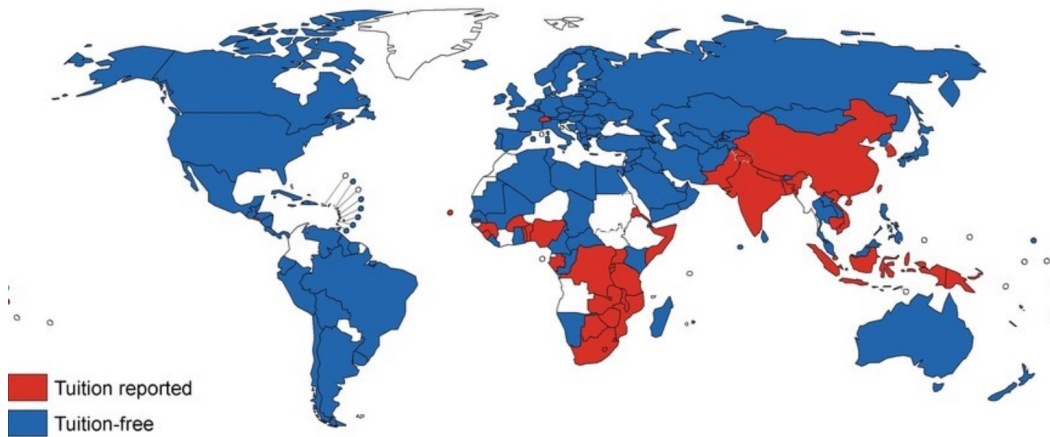
A common thread in primary school

Looking ahead: Beyond the Basics



Middle school
and beyond...

Is completing secondary education tuition-free?



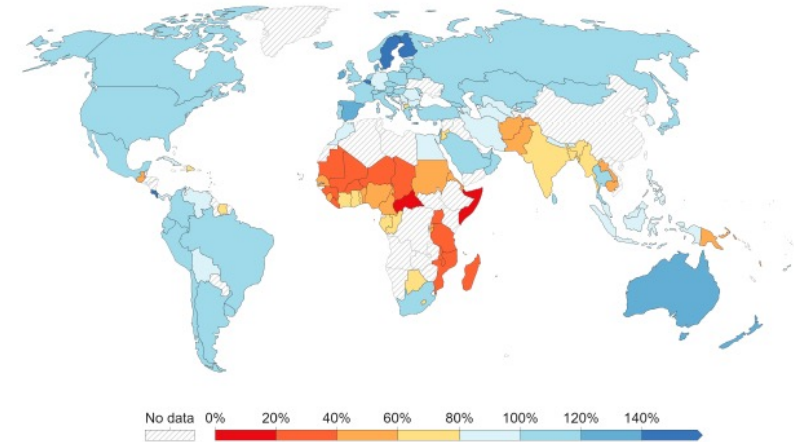
www.worldpolicyforum.org

 **WORLD Policy
Analysis Center**

Gross enrolment ratio in secondary education, 2022

Number of children of any age group who are enrolled in lower secondary¹ and upper secondary² education expressed as a percentage of the total population of the official secondary school age.

Our World
in Data



Source: UNESCO Institute for Statistics via World Bank (2023)

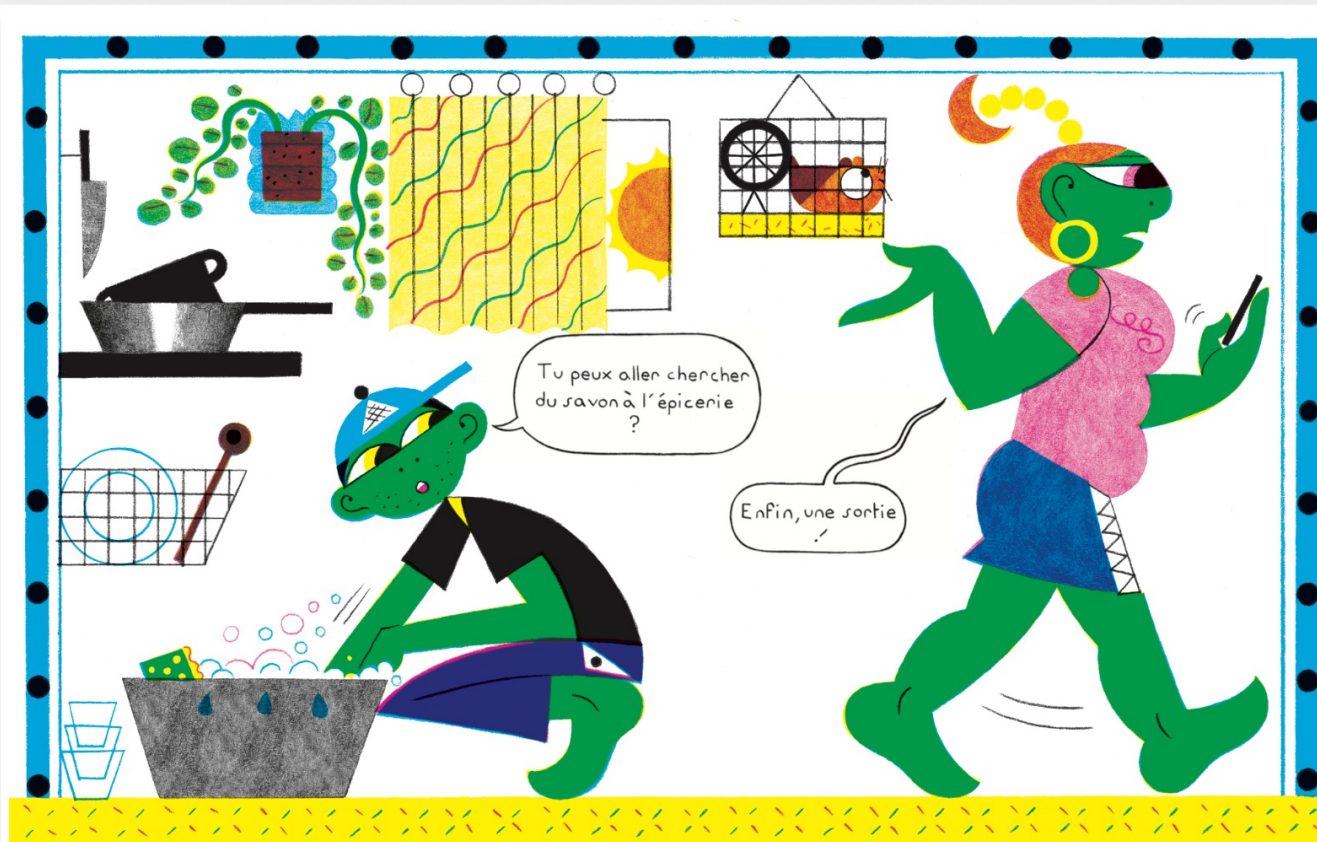
OurWorldInData.org/primary-and-secondary-education • CC BY

Note: Gross enrolment rate can surpass 100% when including students outside the official age due to early or late admissions and grade repetition.

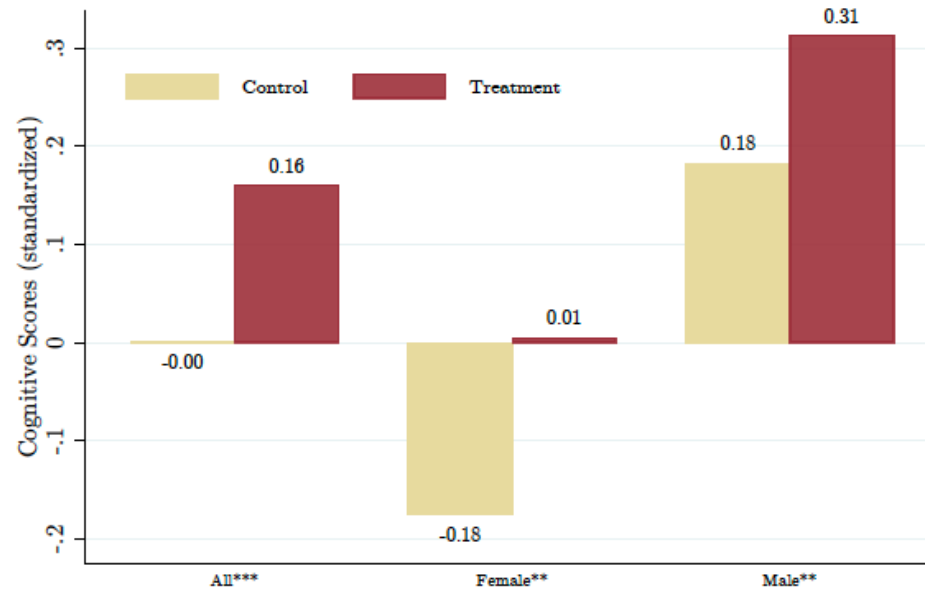
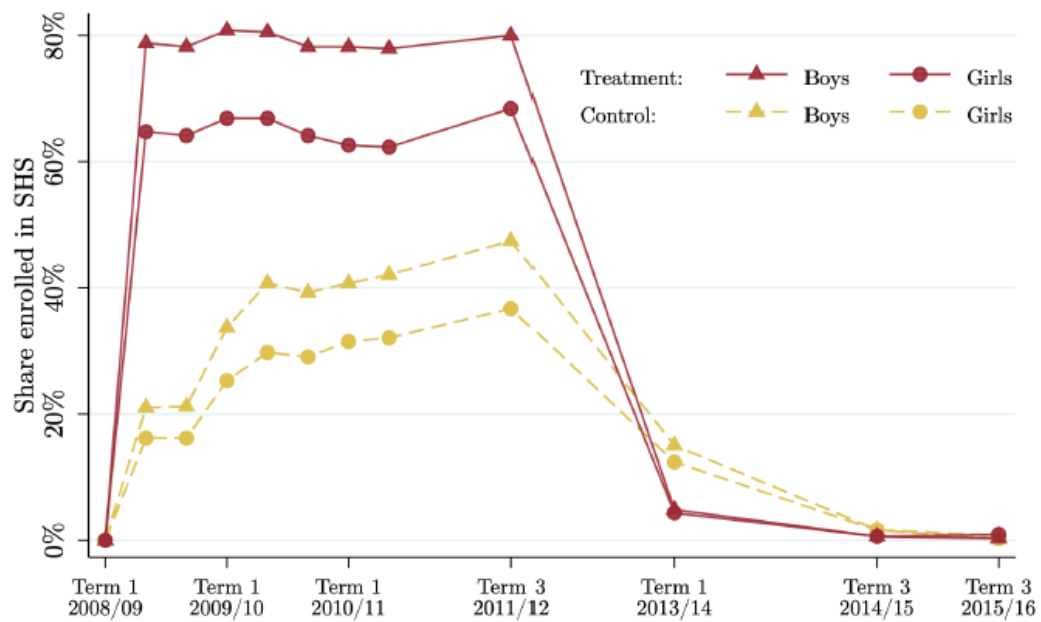
1. Lower secondary education: Lower secondary education (ISCED 2) lays the foundation for lifelong learning and broader educational opportunities through subject-specific theoretical instruction.



Secondary school is the next frontier (and debate)



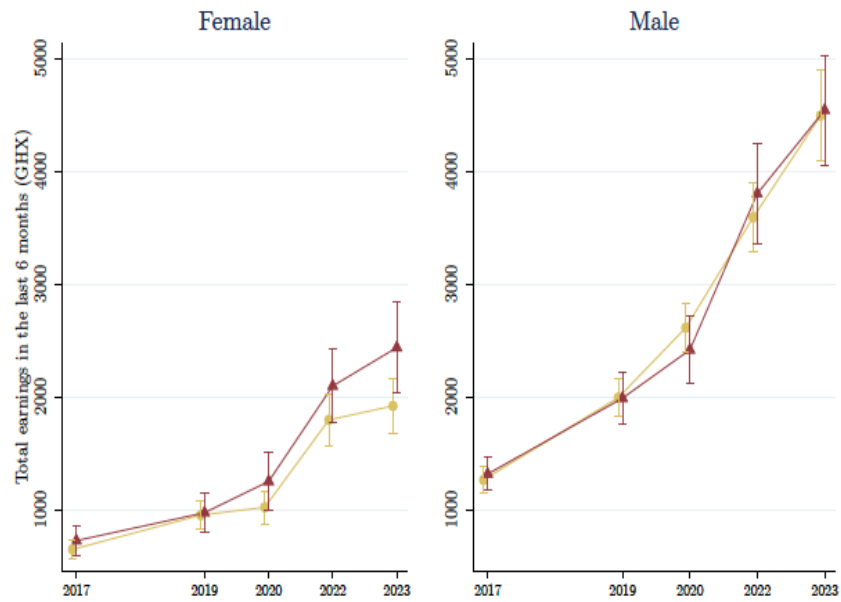
Elle n'a pas les moyens de continuer ses études alors elle reste à la maison toute la journée. Elle s'ennuie.



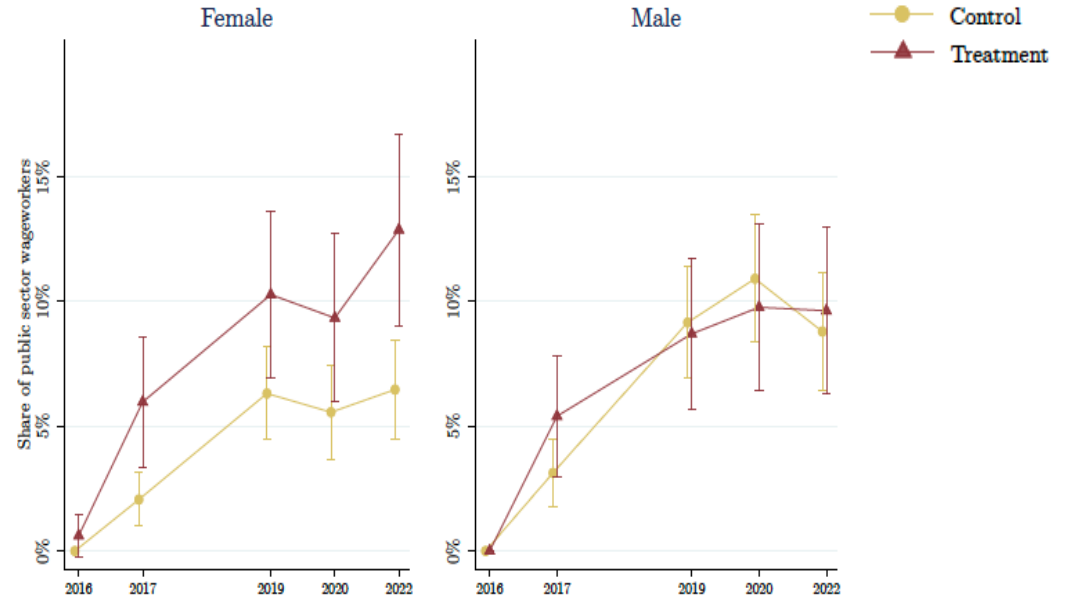
Duflo Dupas Kremer and (2023) | Duflo Dupas Spelke Walsh (2023)

Access and Learning

Wages



Public sector employment



Muted labor market effects

Child mortality declines

	(1)	(2)	(3)	(4)
	Survived to one yr (2023)	Survived to three yrs (2023)	Survived to one yr (2023)	Survived to three yrs (2023)
Panel A: Children of Female GYS participant				
Treatment	0.014*	0.009	0.013*	0.009
	(0.008)	(0.009)	(0.008)	(0.009)
P-value	0.073	0.292	0.085	0.279
Comparison mean	0.969	0.972	0.969	0.972
N	1693	1377	1693	1377
Panel B: Children of Male GYS participant				
Treatment	0.008	-0.003	0.009	-0.003
	(0.009)	(0.010)	(0.009)	(0.010)
P-value	0.364	0.755	0.324	0.782
Comparison mean	0.974	0.984	0.974	0.984
N	1002	759	1002	759
P-val male=fem	0.042	0.456	0.054	0.492
Linear Year of birth Control	✓	✓		
Year of birth Fixed Effects			✓	✓

Child cognition improves

	(1)	(2)	(3)	(4)	(5)
	1.5 years	2.5 years	3.5 years	5 years	7 years
Panel A: Children of Female GYS participant					
Treatment	-0.078	-0.027	0.038	0.247***	0.253**
	(0.095)	(0.128)	(0.079)	(0.084)	(0.118)
P-value	0.411	0.834	0.625	0.003	0.033
Comparison mean	0.007	0.032	-0.026	0.017	0.056
N	563	274	630	668	361
Panel B: Children of Male GYS participant					
Treatment	0.134	-0.218	-0.008	-0.215*	-0.112
	(0.118)	(0.153)	(0.095)	(0.124)	(0.187)
P-value	0.257	0.157	0.932	0.084	0.551
Comparison mean	-0.012	-0.037	0.049	-0.041	-0.118
N	342	208	345	300	174
P-val male=fem	0.306	0.280	0.728	0.003	0.089

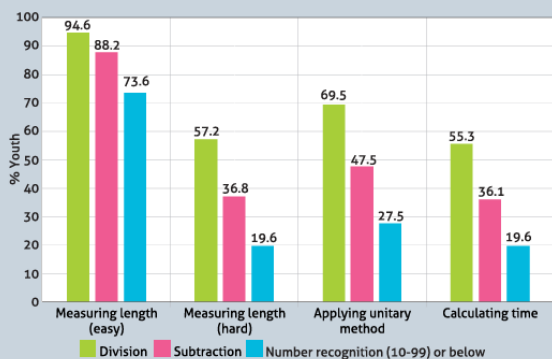
*** p<0.01, ** p<0.05, * p<0.1

Next generation: Positive effect on children of female recipients

Table 23: % Youth who can do common calculations, by gender

Task	All youth	Male	Female
Measuring length (easy)	85.9	89.2	83.1
Measuring length (hard)	39.7	47.9	32.5
Applying unitary method	50.2	58.7	42.7
Calculating time	38.6	43.6	34.3

Chart 9: % Youth who can do common calculations, by ASER arithmetic level



MEASURING LENGTH



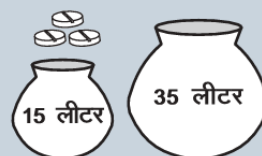
What is the length of the key? (easy)



What is the length of the pencil? (hard)

APPLYING UNITARY METHOD

If 3 chlorine tablets are needed to purify 15 litres of water, how many chlorine tablets are needed to purify 35 litres of water?



CALCULATING TIME



How many hours did this girl sleep?

ASER Beyond Basics (India)

Table 24: % Youth who can do common calculations, by current enrollment status

Task	Enrolled in Std XII or below	Enrolled in undergraduate or other	Not enrolled
Measuring length (easy)	88.7	94.1	66.0
Measuring length (hard)	41.7	60.1	19.0
Applying unitary method	52.7	66.4	28.1
Calculating time	40.5	54.4	20.6

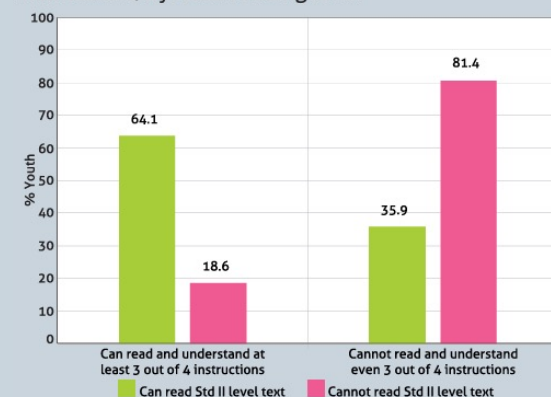
Table 26: % Youth who can read Std II level text on the ASER reading assessment, by gender

	All youth	Male	Female
Can read Std II level text	76.6	76.5	76.8
Cannot read Std II level text	23.4	23.6	23.2
Total	100	100	100

Table 27: % Youth who can read and understand written instructions, by gender

	All youth	Male	Female
Can read and understand at least 3 out of 4 instructions	53.5	57.5	49.9
Cannot read and understand even 3 out of 4 instructions	46.6	42.6	50.1
Total	100	100	100

Chart 10: % Youth who can read and understand written instructions, by ASER reading level



READING AND UNDERSTANDING WRITTEN INSTRUCTIONS

All youth were asked to read the instructions given on the O.R.S. packet shown below:



After reading, youth were asked the following 4 questions:

- How many packets of O.R.S. should be added to 2 litres of water?
- Within how many hours should the prepared solution of O.R.S. be consumed?
- How many litres of O.R.S. can be given to a 21-year old within a span of 24 hours?
- Based on the information given, can this packet of O.R.S. be consumed in December 2018?

ASER Beyond Basics (India)

Table 28: % Youth who can read and understand written instructions, by current enrollment status

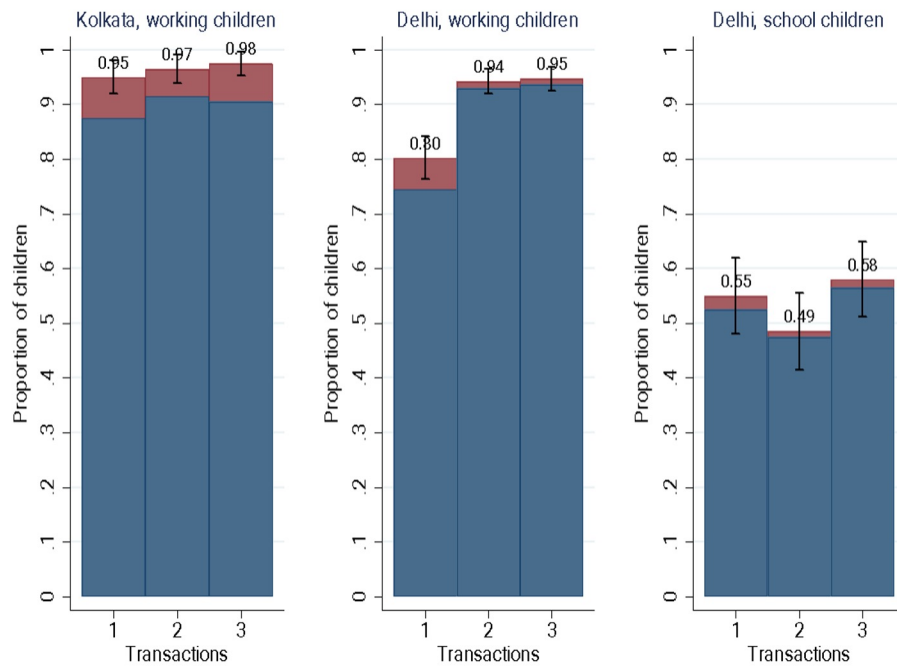
	Enrolled in Std XII or below	Enrolled in undergraduate or other	Not enrolled
Can read and understand at least 3 out of 4 instructions	56.8	77.8	22.4
Cannot read and understand even 3 out of 4 instructions	43.2	22.2	77.6
Total	100	100	100

X-TRA

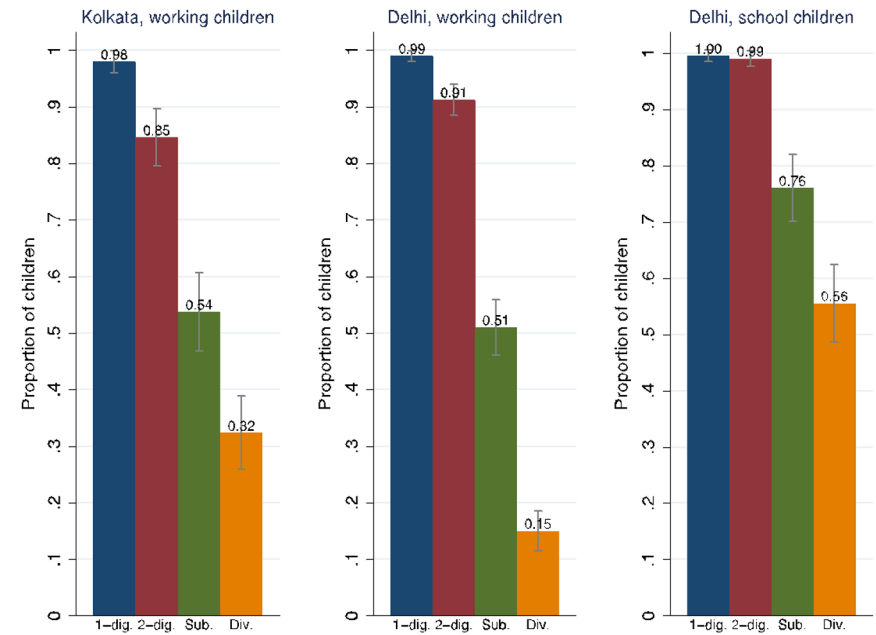
MARKET



Performance in markets (real or simulated)



ASER test results

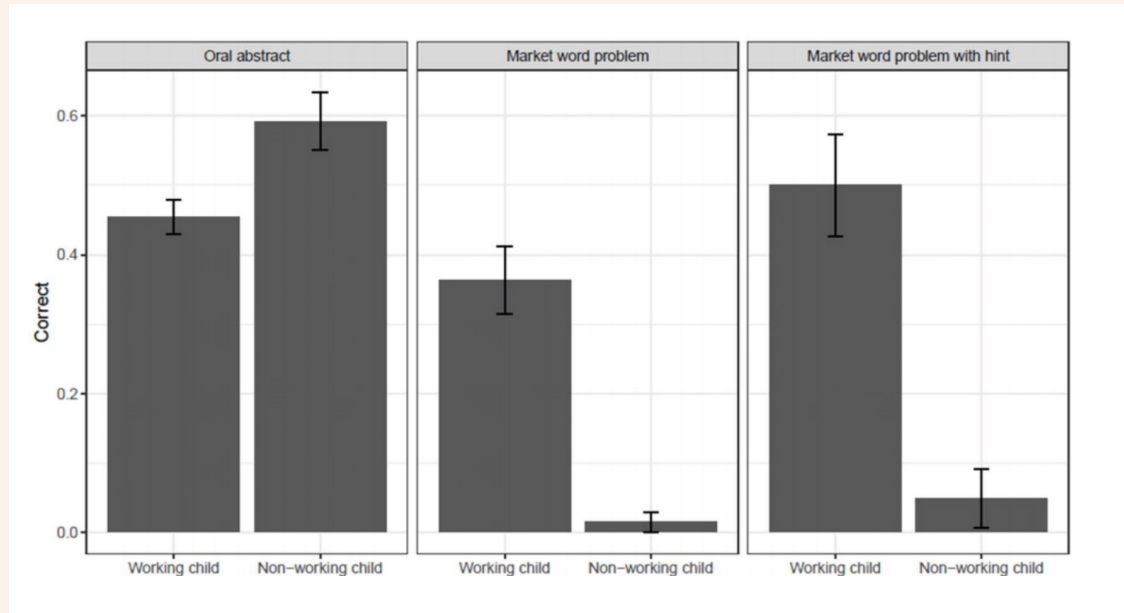


Making kids (and teachers) realize they know things appear to be important...

Market word problem

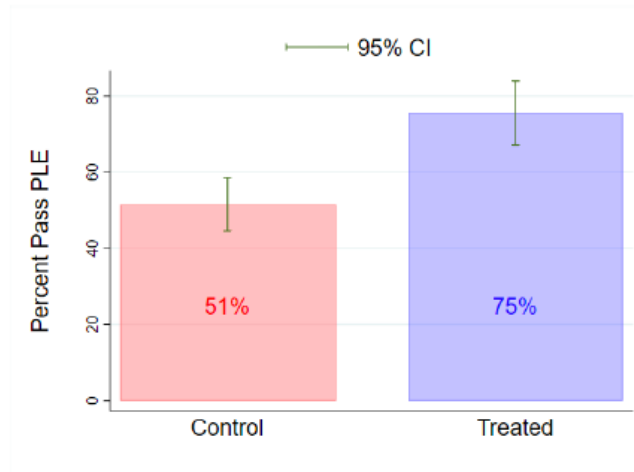
Vishal went to the market with 200 Rupees. He bought 450 grams of peas at 100 rupees a kilogram, and 200 grams of tomatoes at 90 rupees a kilogram. How much money does he have left?"

Timed (few minutes)

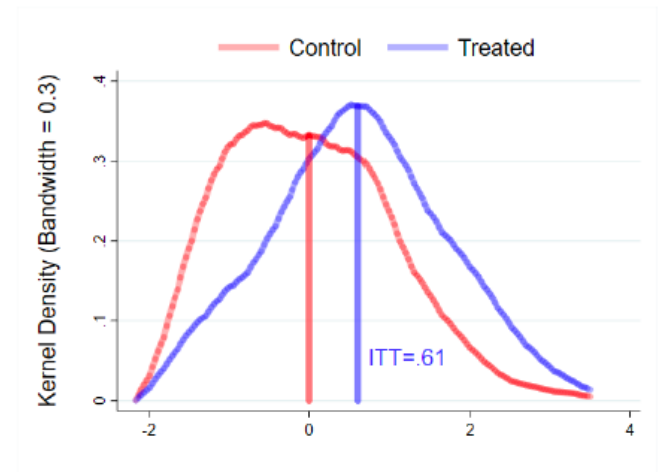


Schools do not seem to recognize or teach practical skills

- Ashraf et al (2023)
- FUNDEAC critical thinking program
- Train teachers to teach by getting students to ask questions.



(A) Primary Leaving Exam (PLE) Pass Rate



(B) Distribution of Standardized PLE Score

Large gains are possible: Critical thinking

Turkey

France

Table 9: Treatment Effect on Standardized Test Scores (Sample B)

	Math Test Score	Turkish Test Score
Treatment	0.276*** (0.09)	0.134** (0.05)
Gender (Male=1)	0.037 (0.05)	-0.124** (0.04)
Raven Score	0.368*** (0.04)	0.230*** (0.04)
Risk Tolerance	-0.039* (0.02)	-0.014 (0.01)
Turkish score (pre)	0.207*** (0.04)	0.249*** (0.02)
Math score (pre)	0.193*** (0.04)	0.263*** (0.03)
Class size	-0.009* (0.00)	-0.006 (0.00)
Control Mean	-0.04	0.01
N	1203	1206

Table 2: EJ Impacts on Summary Indices

	Grade 6		Grade 7		Grade 8		Grade 9	
	Obs.	Impact	Obs.	Impact	Obs.	Impact	Obs.	Impact
Return to effort	.	.	6,027	0.047*** (0.008)	5,496	0.048*** (0.007)	5,485	0.040*** (0.007)
Student-rep. dilig.	5,506	-0.001 (0.008)	6,458	-0.015** (0.006)	5,706	-0.003 (0.009)	5,497	-0.001 (0.007)
Teacher-rep. char.	4,494	0.028 (0.022)	4,826	0.052*** (0.020)	4,596	0.042* (0.023)	4,503	0.019 (0.023)
School-rep. behav.	22,074	-0.039*** (0.012)	22,449	0.008 (0.011)	22,445	0.007 (0.013)	22,305	0.040*** (0.013)
GPA	20,783	0.025* (0.015)	21,443	0.036*** (0.013)	19,713	0.032** (0.015)	19,330	0.067*** (0.021)
Aspiration	5,497	0.035* (0.021)
Observations	22,662		22,905		23,266		22,688	
Clusters	188		194		190		186	

The table presents the standardized impacts of the treatment from Grade 6 to Grade 9 on our summary indices. Indices are presented in rows. Columns *Obs* gives the number of observations, columns *Impact* the coefficients from the regressions of the outcomes on the treatment variable. Regressions are controlled for school and cohort fixed effects and standard errors, given below in parenthesis, are robust to heteroscedasticity and clustered at the school*cohort level. The sample is composed of students with non-missing gender and financial aid status.

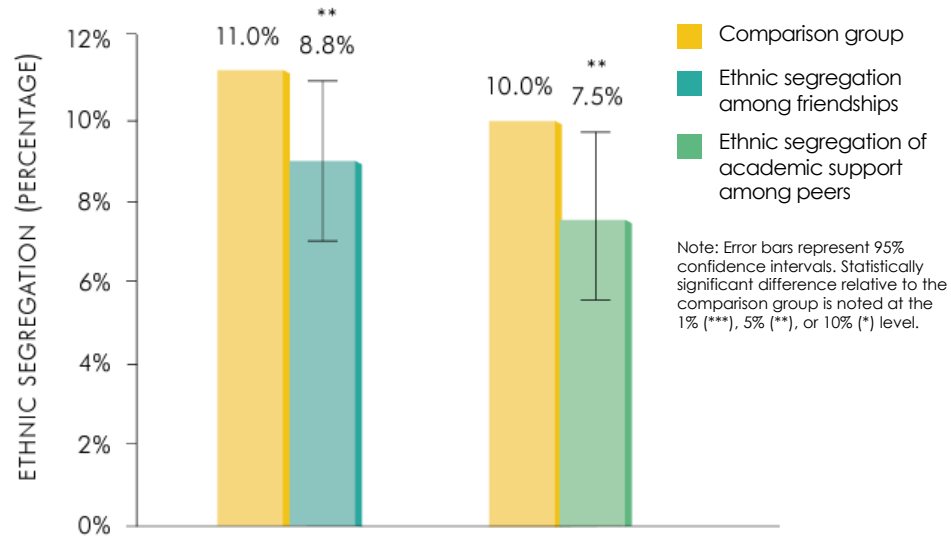
*10%, **5%, ***1% significance level

Alan et al

Algan et al

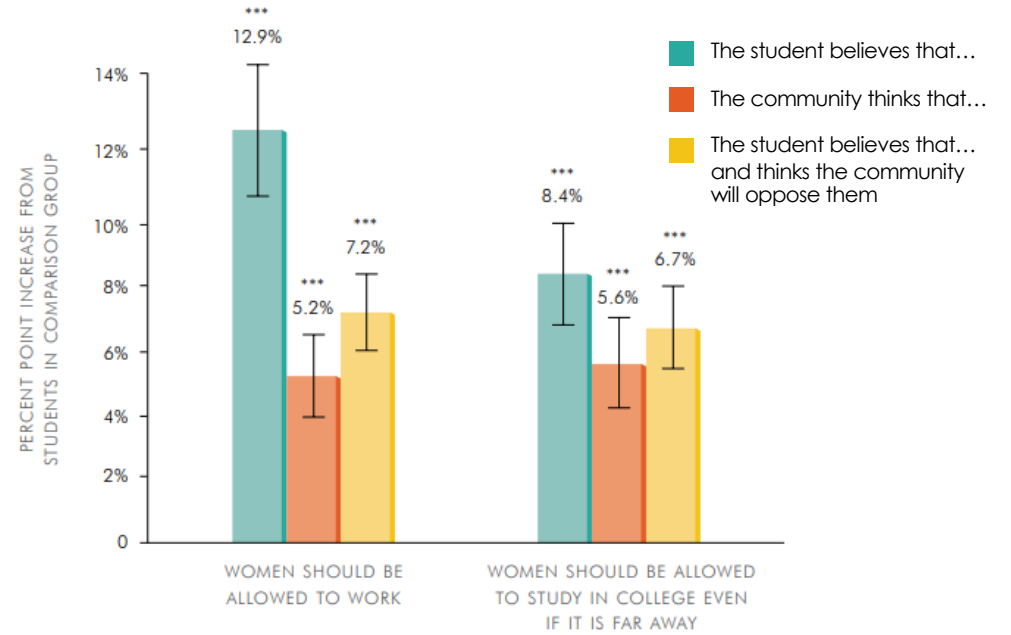
Grit: Results still mixed...

Perspective taking to reduce conflict



Alan et al

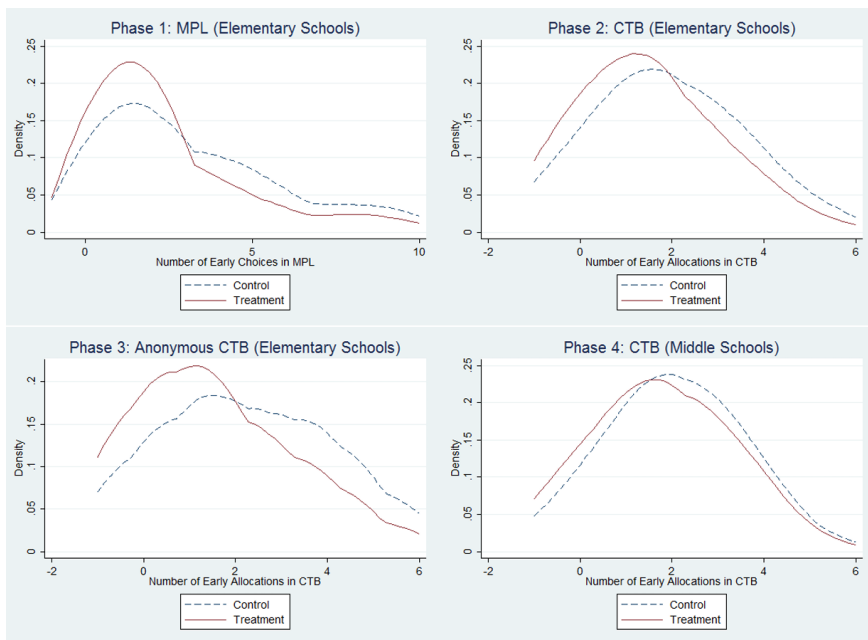
Gender social norms



Dhar et al

Teaching social behavior

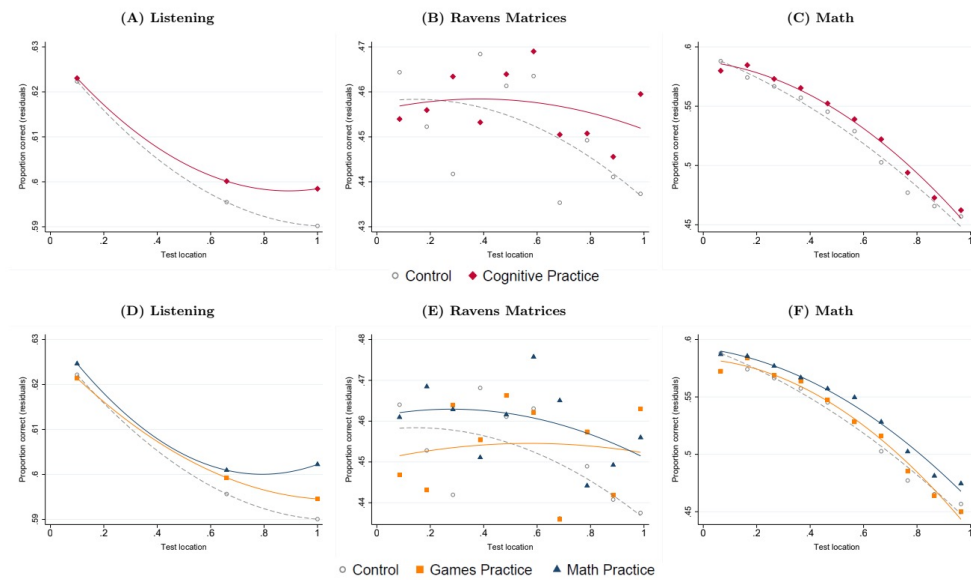
Patience



Alan et al

Cognitive endurance

FIGURE II: Performance Declines on Experimental Tests by Treatment Group



Brown et al

Teaching patience and resilience



La vie devient plus légère.