

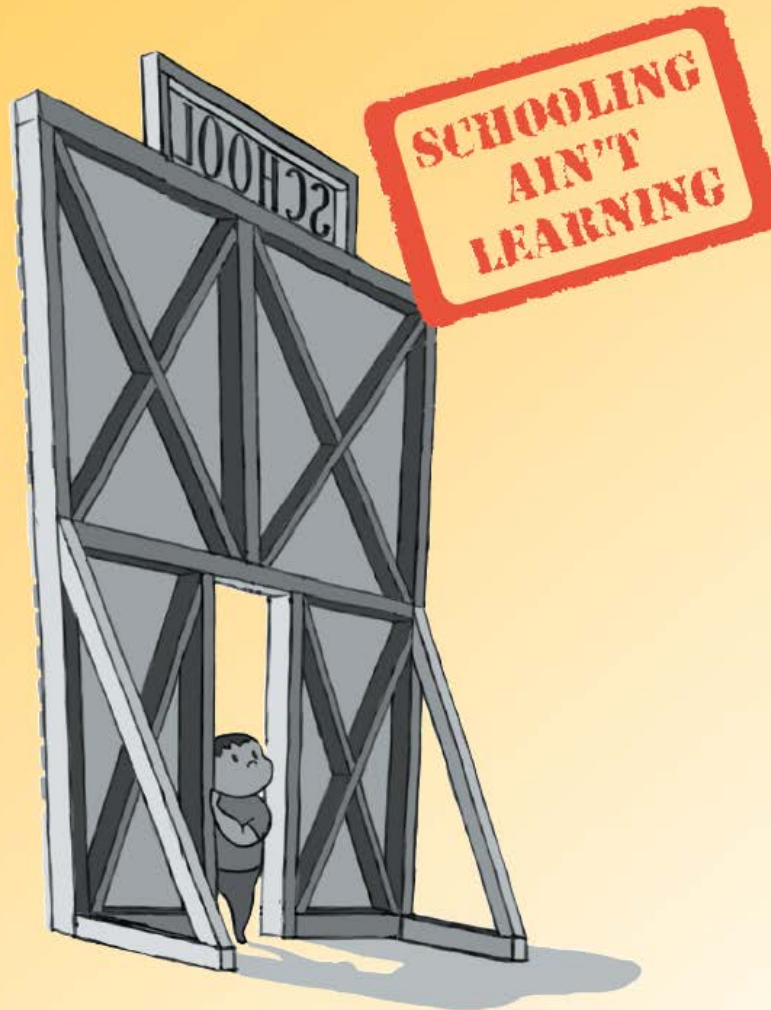
The Pivot to Learning: Education Systems for Accelerated Progress in Indonesia

Lant Pritchett

Harvard Kennedy School

November 21, 2015

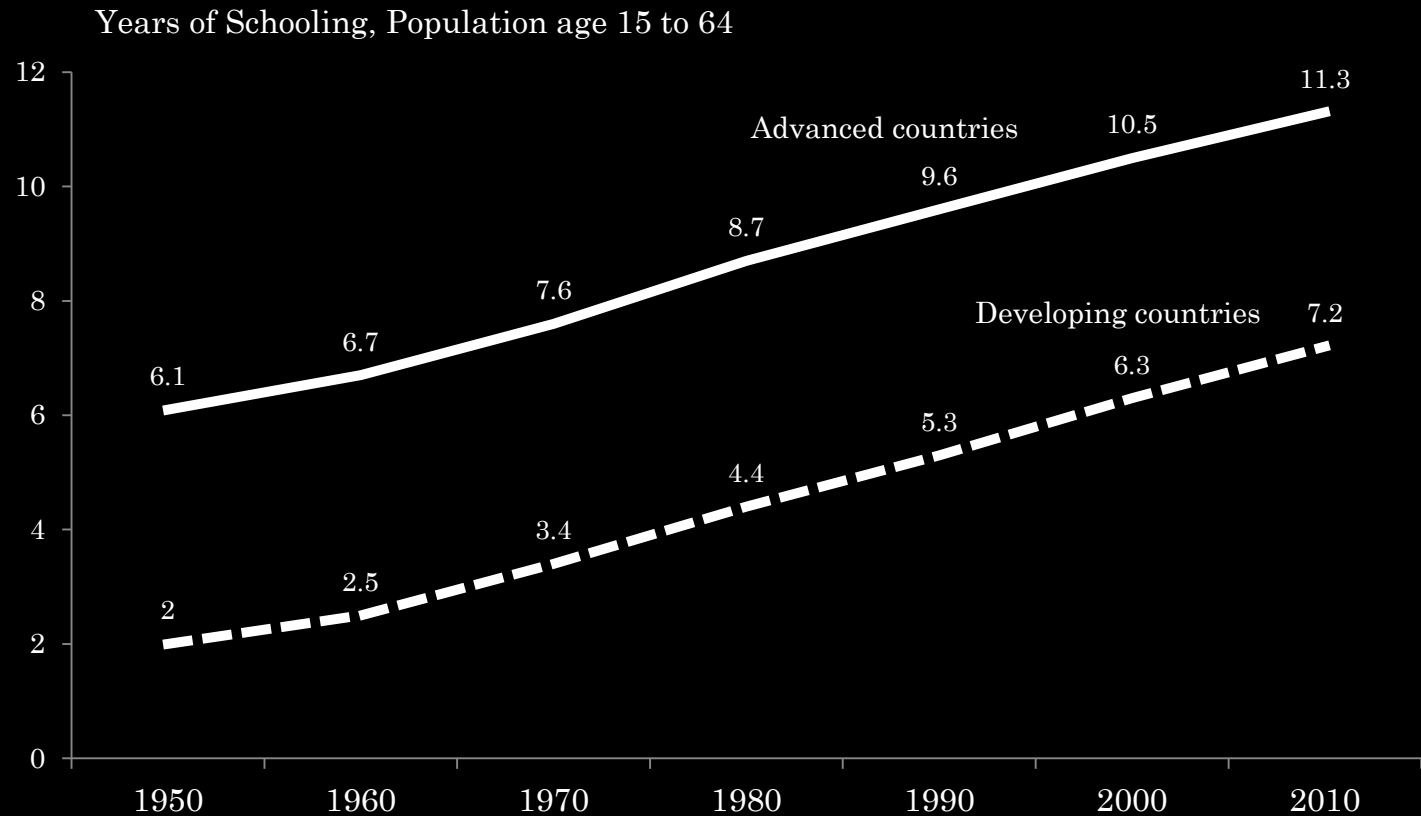
THE REBIRTH OF EDUCATION



LANT PRITCHETT
CENTER FOR GLOBAL DEVELOPMENT

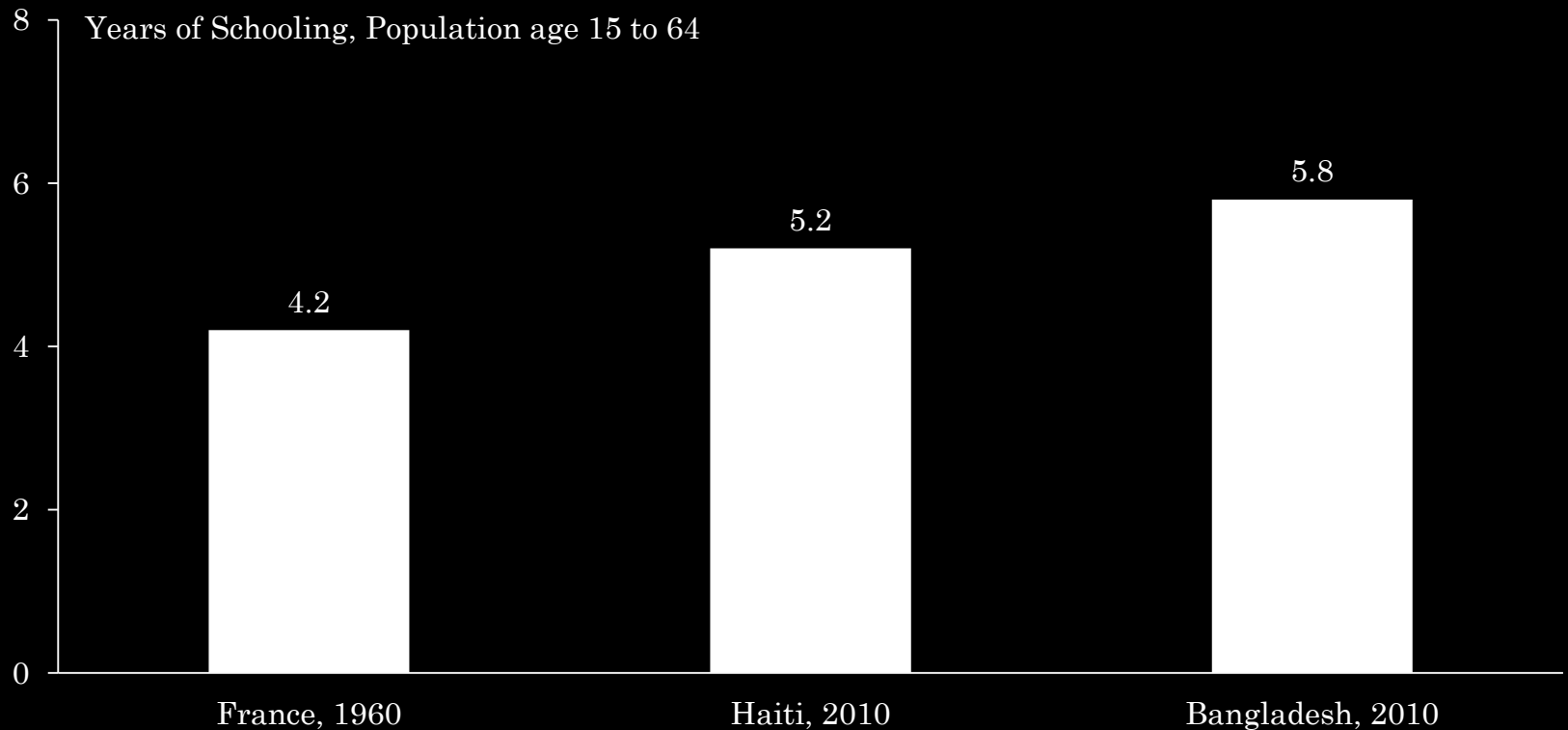
Schooling: The Success of the (last) Century

Schooling increased massively



Schooling: The Success of the (last) Century

Poor countries are now ahead of where rich countries were (when they were much, much richer)



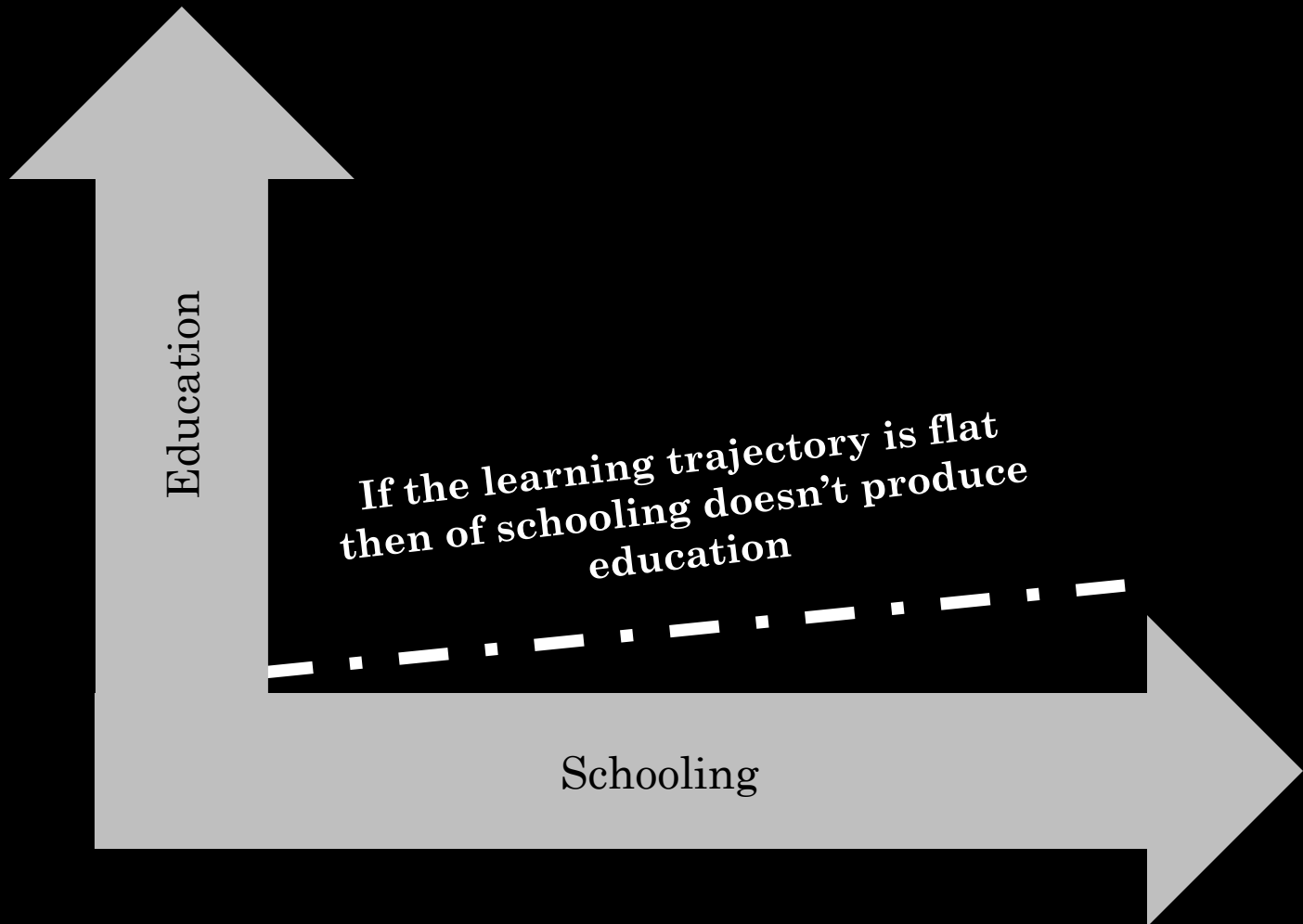
Time to Pivot from Schooling to Education



Nobody ever really had a schooling goal.
Schooling is an instrument to education



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Schooling is an instrument to education

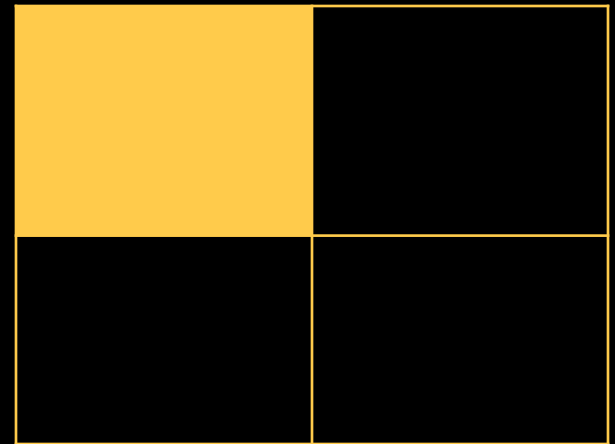


Questions for the Audience

What percent of 4th graders in Andhra Pradesh answer this question correctly?

✓ 30 percent

How much of this figure is shaded?



About
half

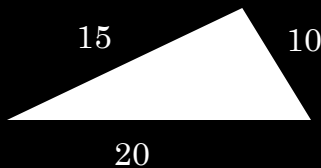
Mechanical Questions

Correct

Write the answer
 $713 \times 24 =$

48%

What is the Perimeter of this
shape?



48%

___cm

Less
than
guessing

Conceptual Questions

Correct

Is 24×18 more than 18×24 ?
How much more?

21%

A thin wire 20cm long is
formed into a rectangle. If the
width of the rectangle is 4cm
what is the length?

17%

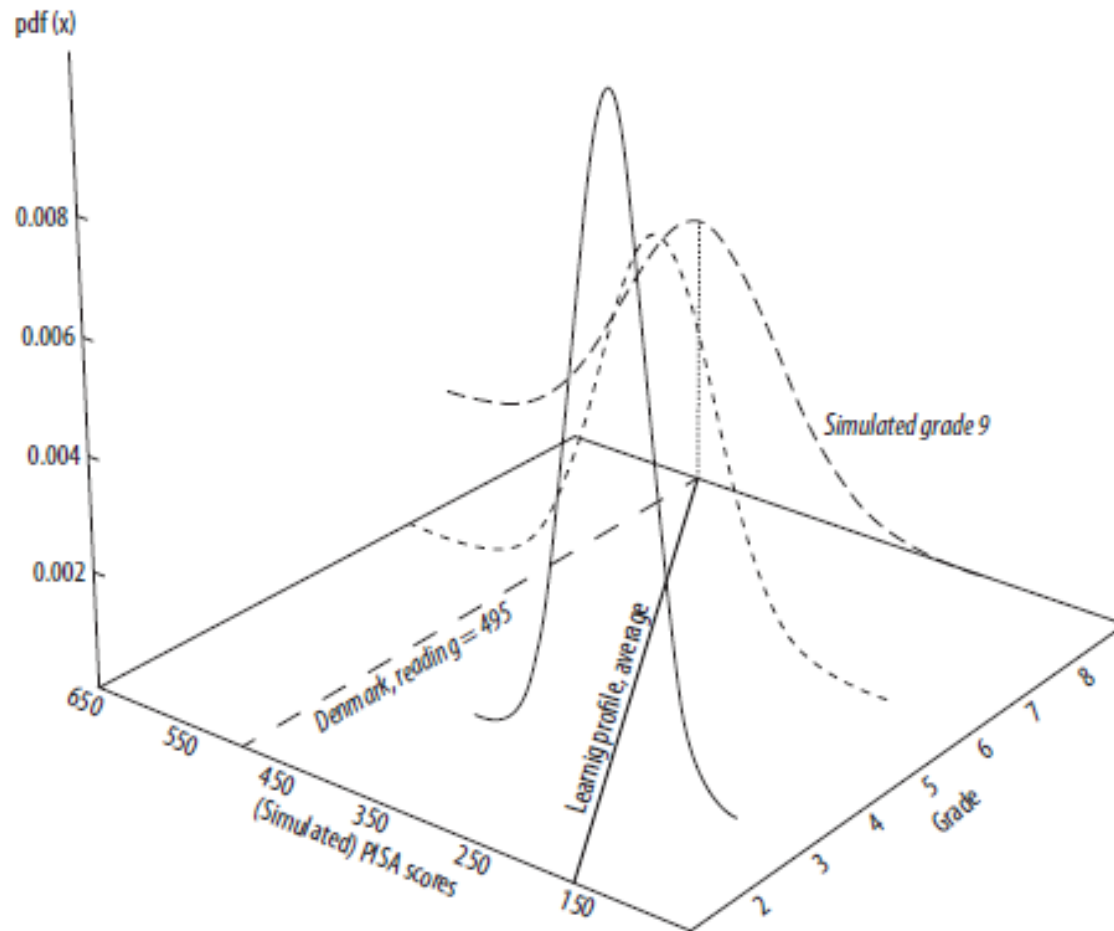
A burst of learning then long periods of little gain

Table 1-6. Actual cohort learning profiles from tracking the same students over time in Pakistan show the same slow pace of learning as grade profiles.

<i>Year tracked in the LEAPS study</i>	<i>Percent able to do two-digit addition, no carry: 36 + 61</i>	<i>Percent who learn in a year</i>	<i>Percent able to do three-digit addition, with carry: 678 + 923</i>	<i>Percent who learn in a year</i>	<i>Percent able to do multiplication: 32 × 4</i>	<i>Percent who learn in a year</i>	<i>Percent able to do division: 384/6</i>	<i>Percent who learn in a year</i>
1 (in grade 3)	85.5		56.1		52.2		19.3	
2 (mostly grade 4)	87.8	15.9	59.5	7.7	56.9	9.8	24.5	6.5
3 (mostly grade 5)	92.2	36.0	71.1	28.8	70.3	31.1	45.6	27.9
4 (mostly grade 6)	93.0	10.2	74.4	11.4	75.6	17.9	54.1	15.5
Average who learn per year		20.7		16.0		19.6		16.6

Source: Data from LEAPS 2007 study; calculations provided to author by LEAPS study authors.

The aggregation of individual learning trajectories determines the evolution of the distribution of attainment at a point in time



Source: Author's simulations using PISA data (OECD 2009).

Measuring Learning 1: Within Cohort Ability Evolution (Karthik AP results)

- Only 2.4% of students in grade 1 meet the grade 1 standard in Cohort 5
- 60% of students in grade 5 meet the grade 1 standard, but only 8.3% meet the grade 5 standard

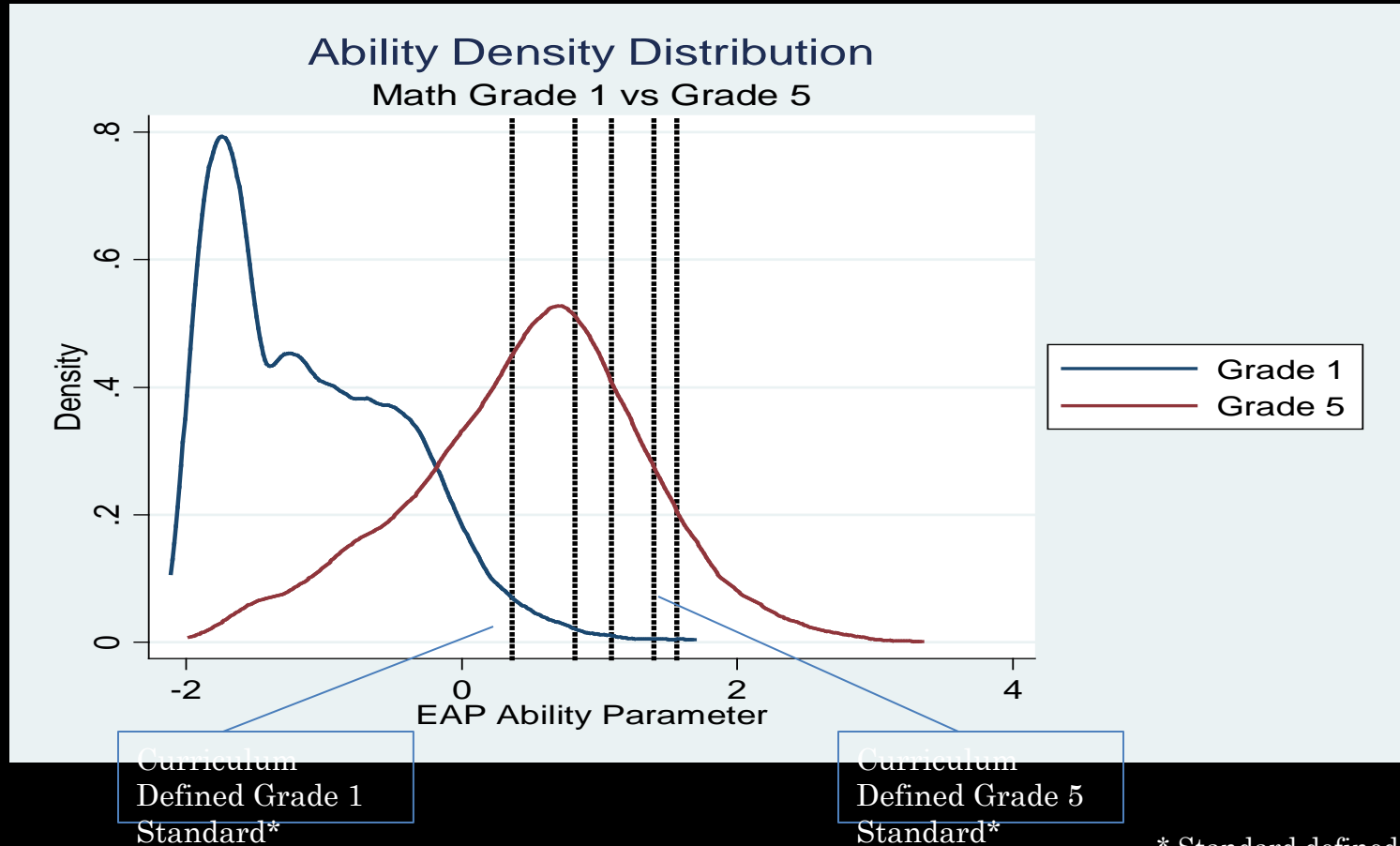


Figure 5. Distributions of Student Ability Parameters in Mathematics in Grade 1 and Grade 5, Cohort 5

* Standard defined as the lowest ability level required to receive an average score of 50% in the universe of grade specific questions

Learning Trajectories over 5-years for 1 Cohort (Karthik AP IRT results)

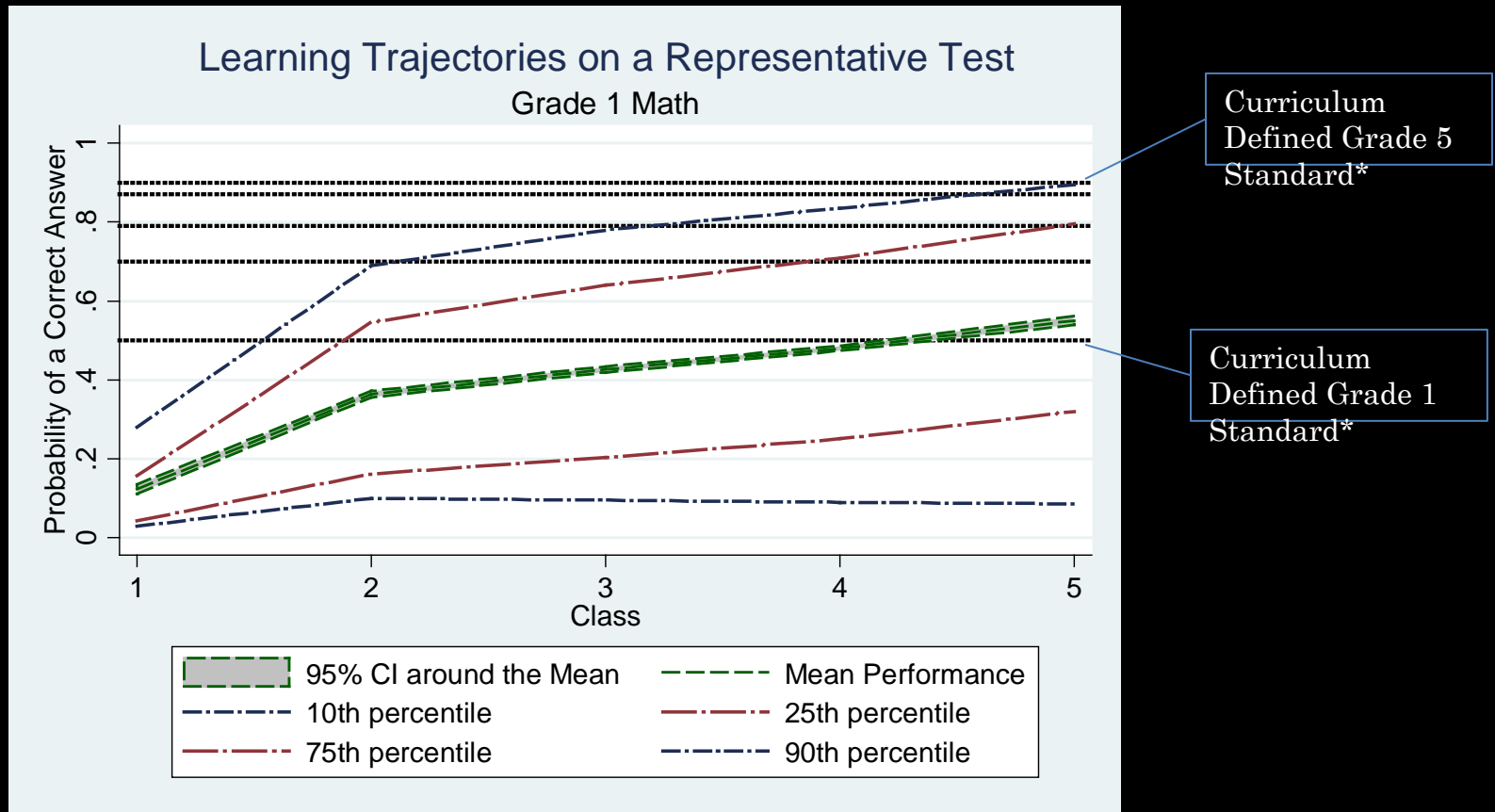
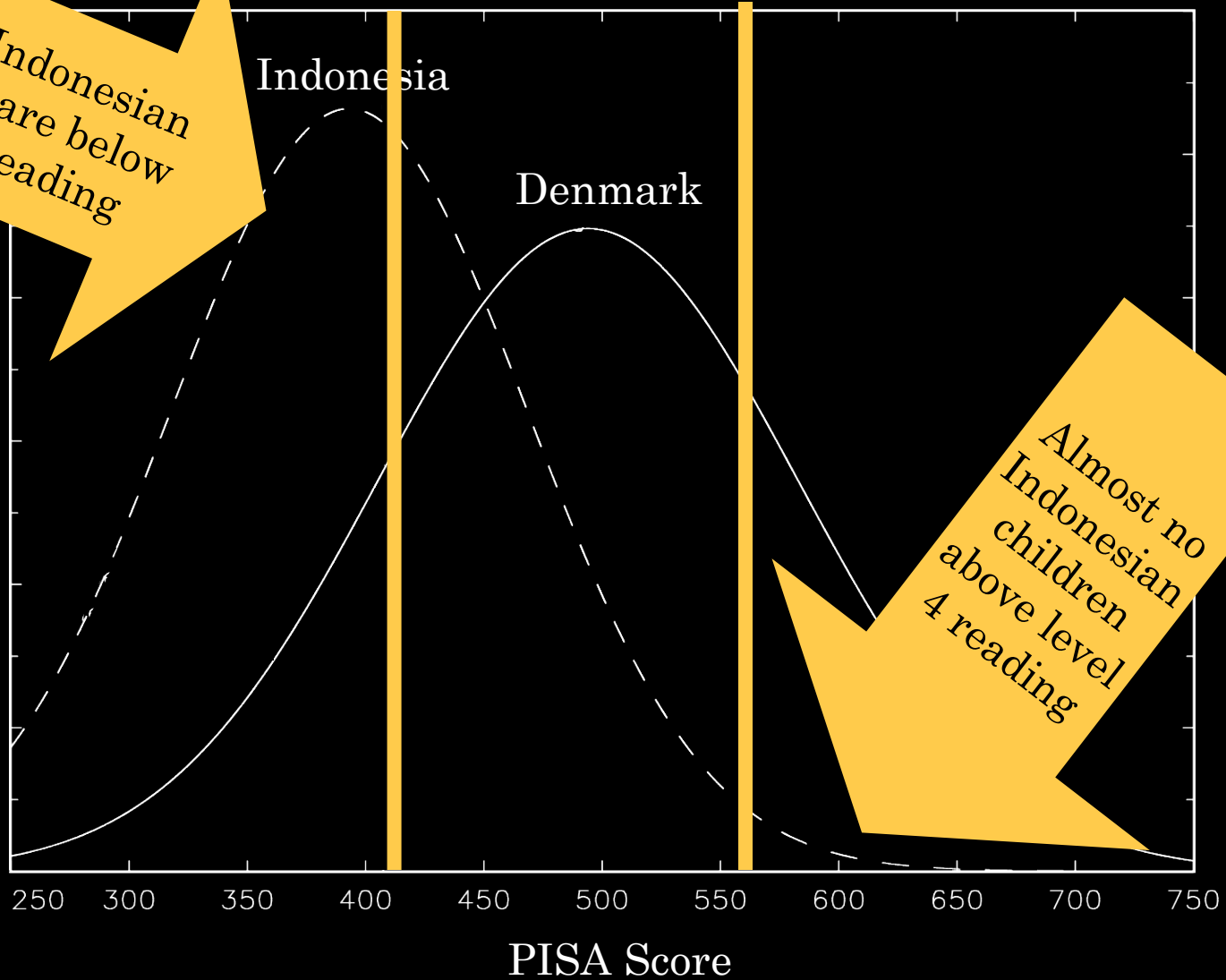


Figure 6. Learning Trajectories for Grade 1 Appropriate Material, Cohort 5 fractional polynomial fit

* Standard defined as the probability of a correct answer given the lowest ability level required to receive an average score of 50% in the universe of grade specific questions

- The “big prize” for doing the vertical IRT scaling in a representative sample is the ability to produce pictures like the one above

PISA Reading Test Distribution

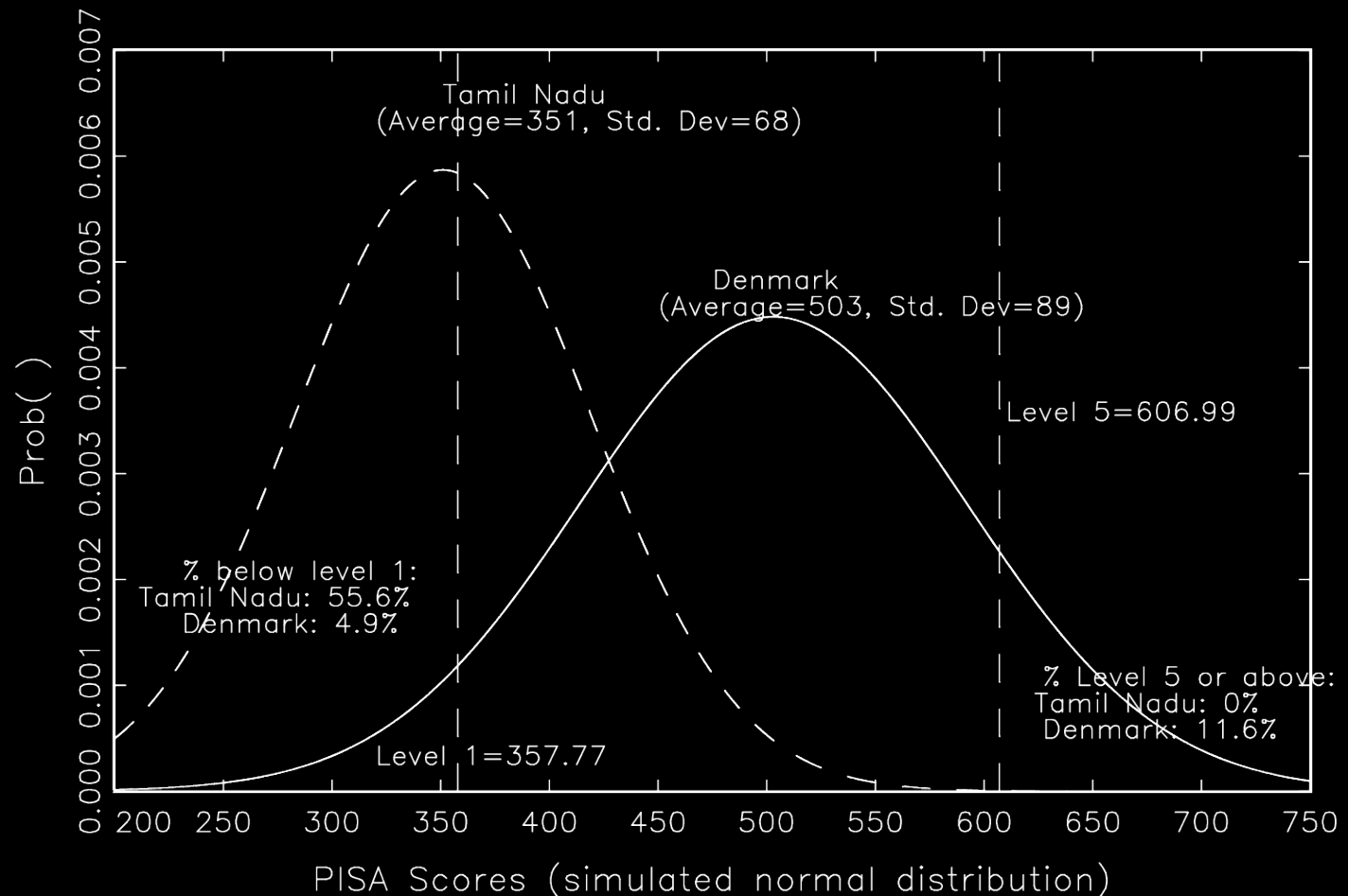


58% of Indonesian children are below level 1 reading

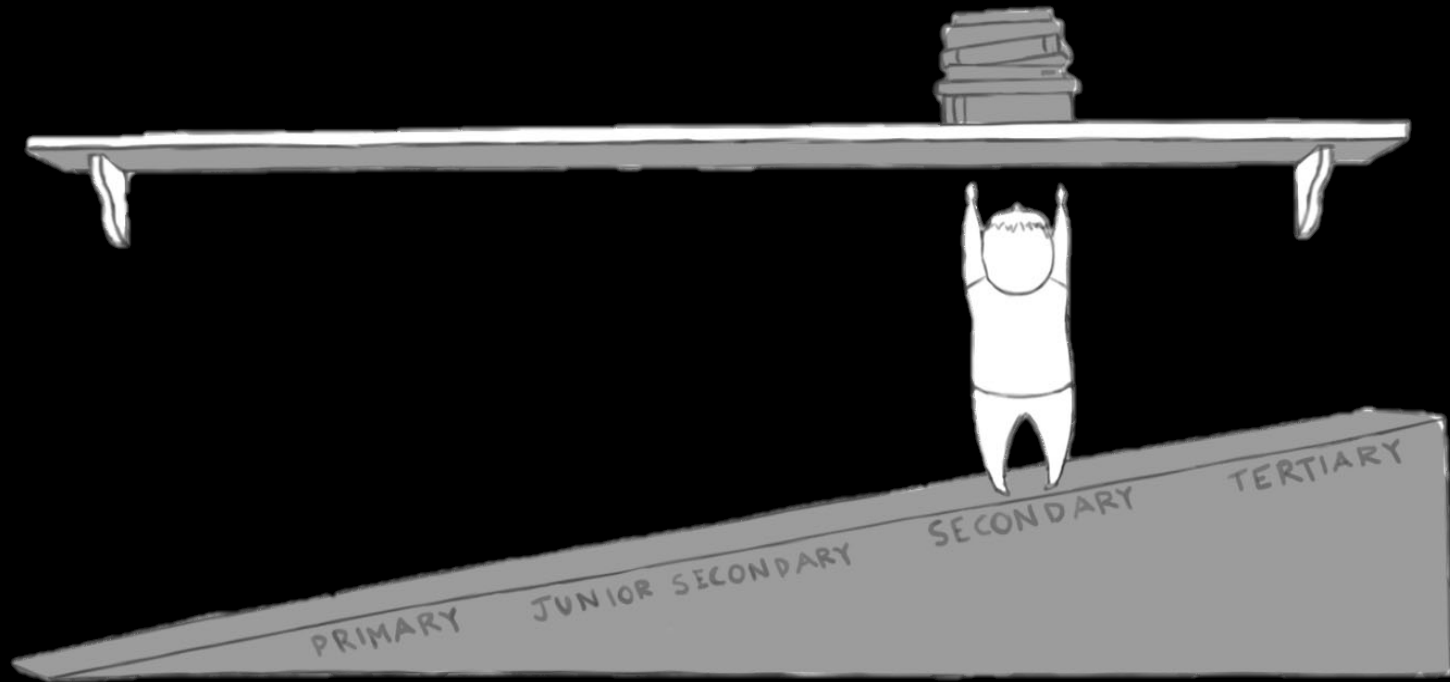
Almost no Indonesian children above level 4 reading

Even worse for Tamil Nadu

Figure 1.8: Denmark and Tamil Nadu, India Compared
(PISA 2009(+) Mathematics)



If not much is being learned per year then
more years alone are not enough



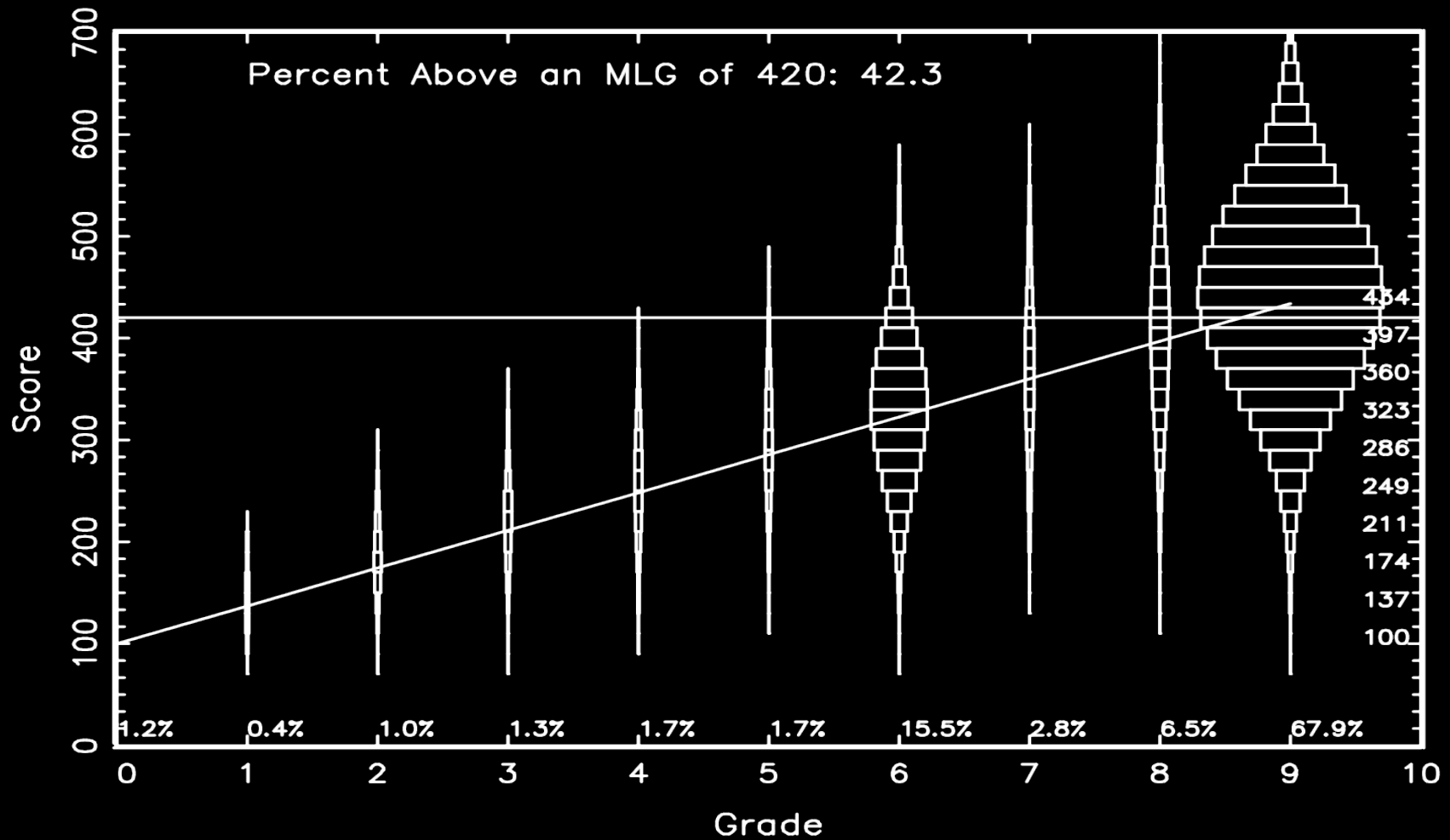
Even universal secondary schooling would not achieve universal proficiency in reading and math

	Yearly increase in percent correct	Years of schooling needed to reach goal	
		90 percent correct	100 percent correct
India: EI Language (median)	5	19	22
India: EI Math (median)	5	14	16
Tanzania: grade 2 proficiency across Kishwahili, English, and math grades 4-7	9	13	14

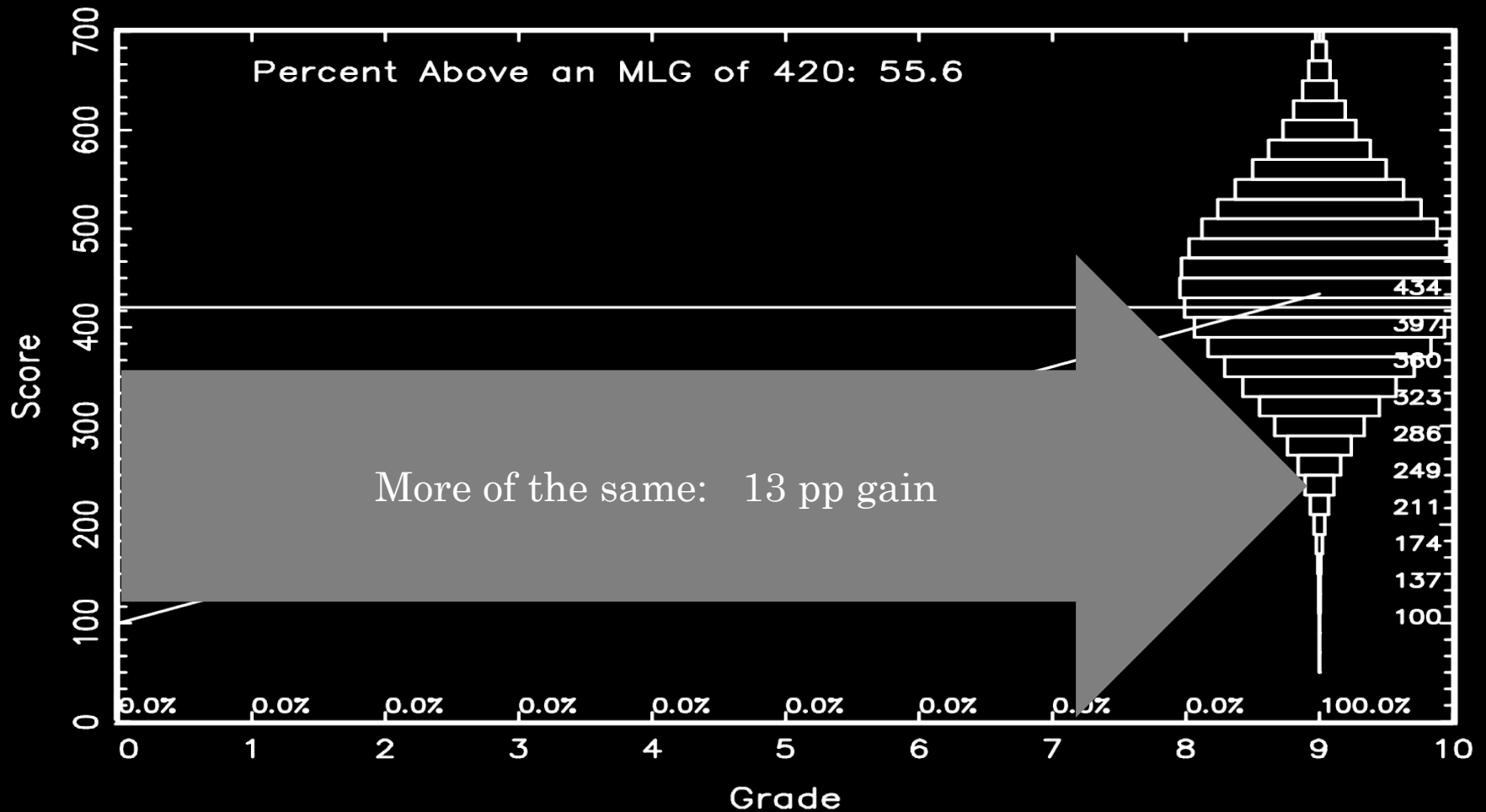
sources: For India, Educational Initiatives (2010). For Tanzania, Uwezo (2011).

note: author uses median for EI because in one set of language questions the increment is 1.4 per year, which substantially lowers them.

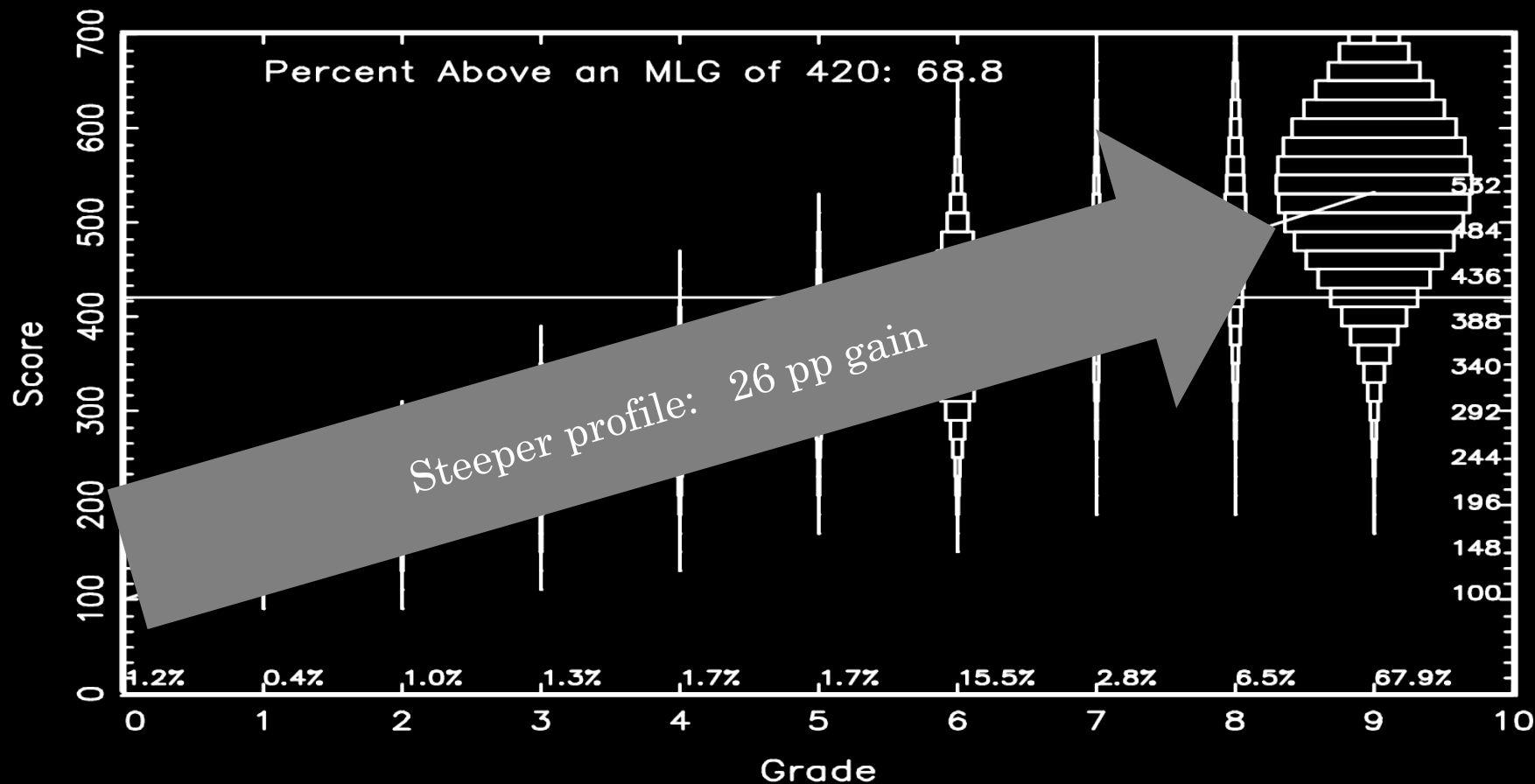
Indonesia simulated cohort learning achievement profile, 2007



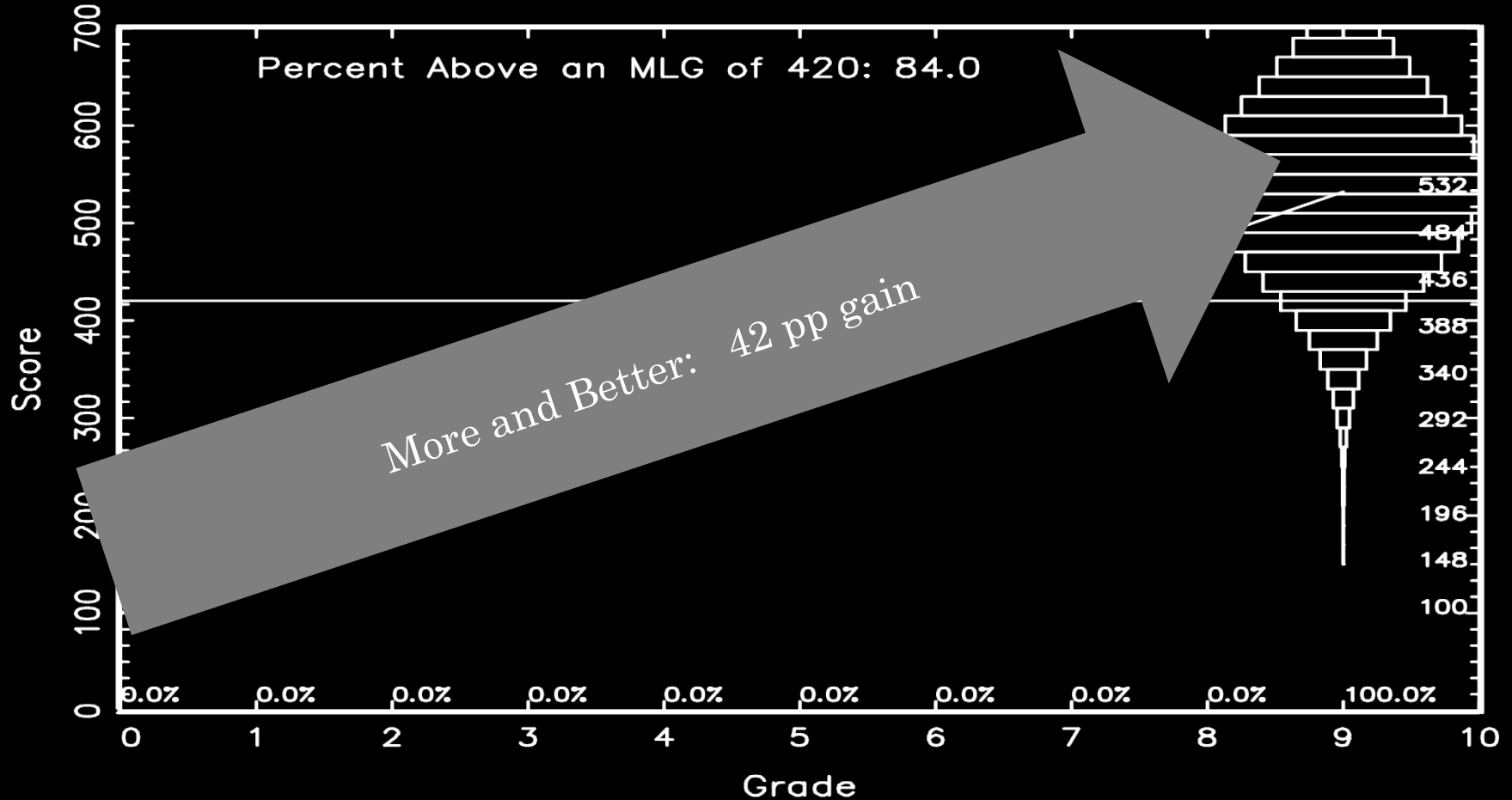
Indonesia hypothetical at universal grade completion



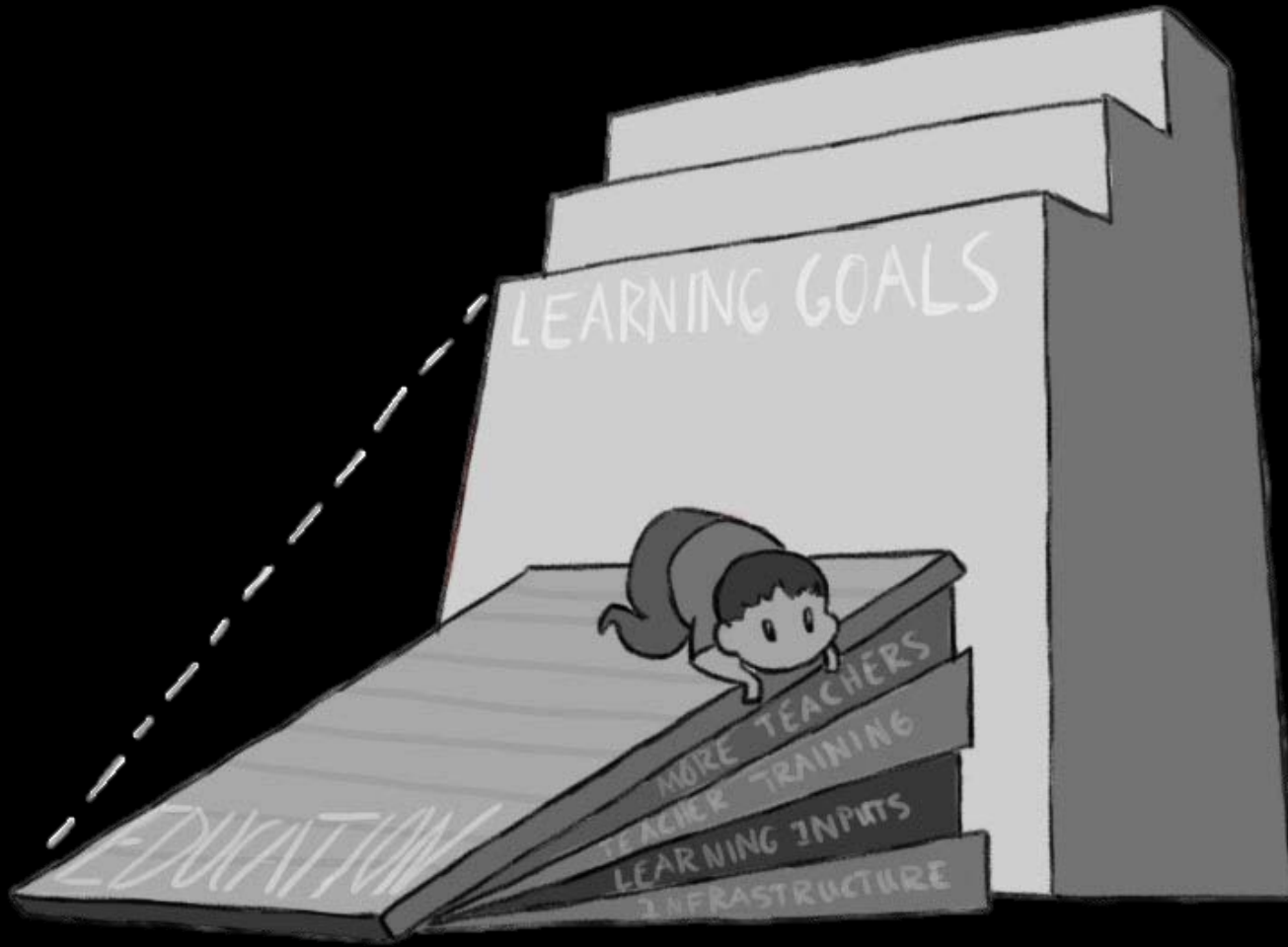
Indonesia hypothetical at 1 std dev steeper learning profile



Indonesia hypothetical universal completion and steeper learning profile

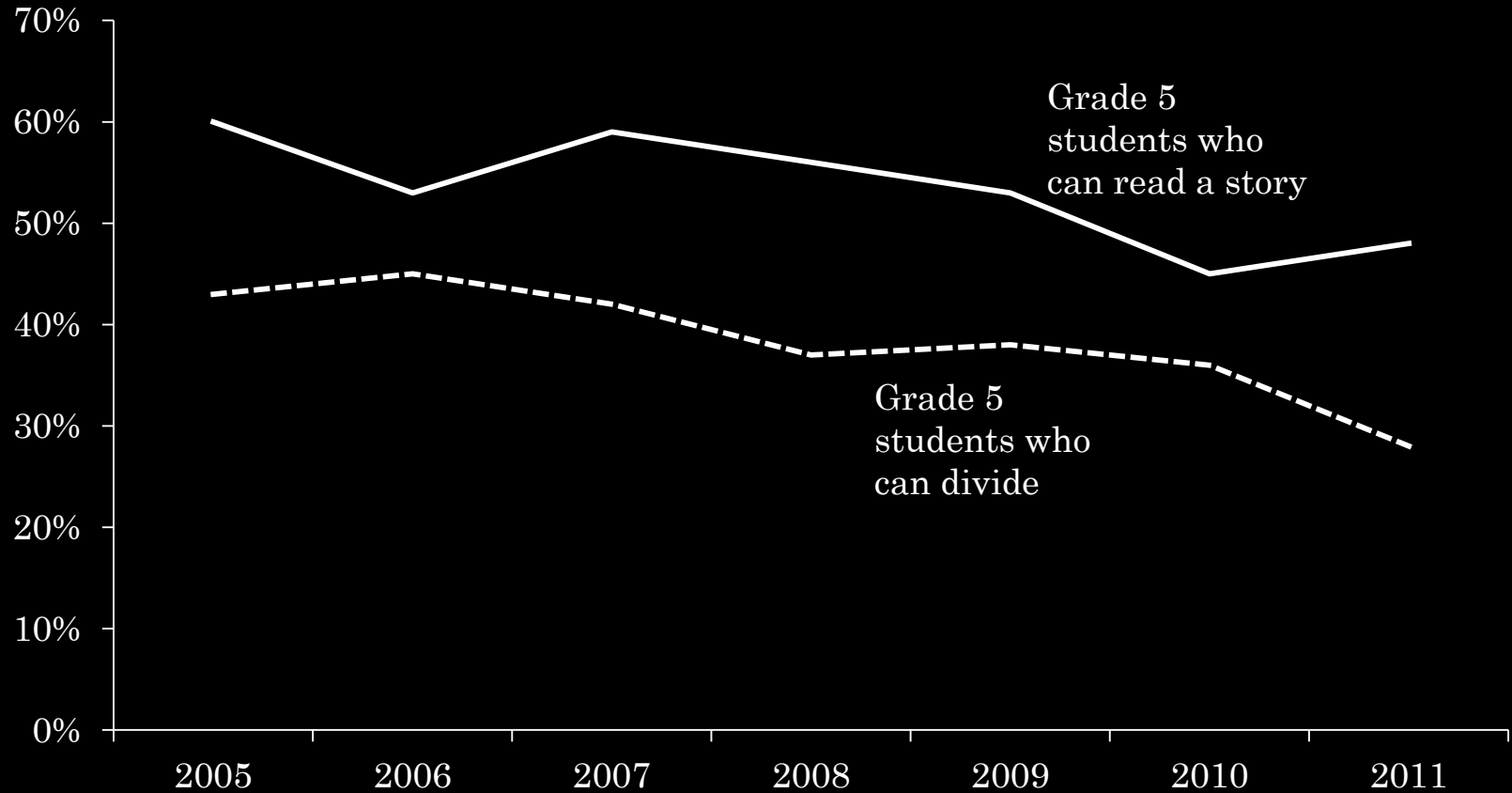


Inputs are not the answer



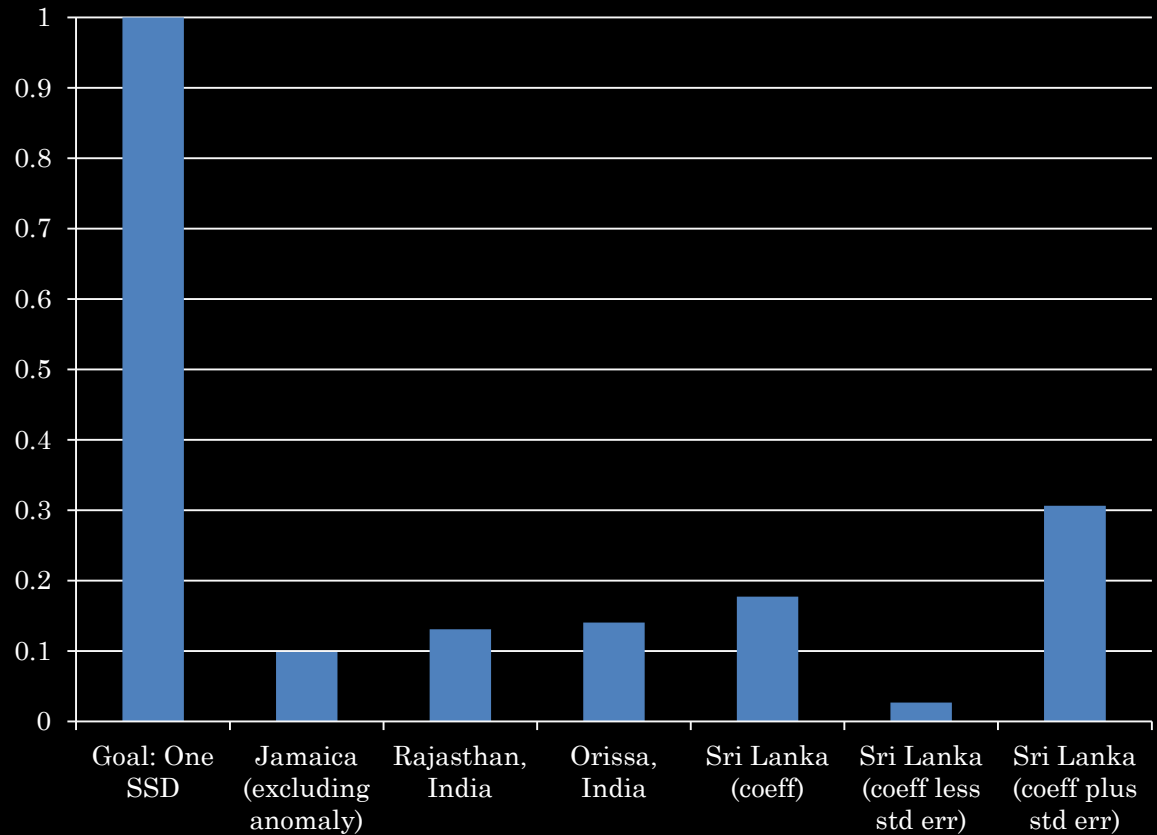
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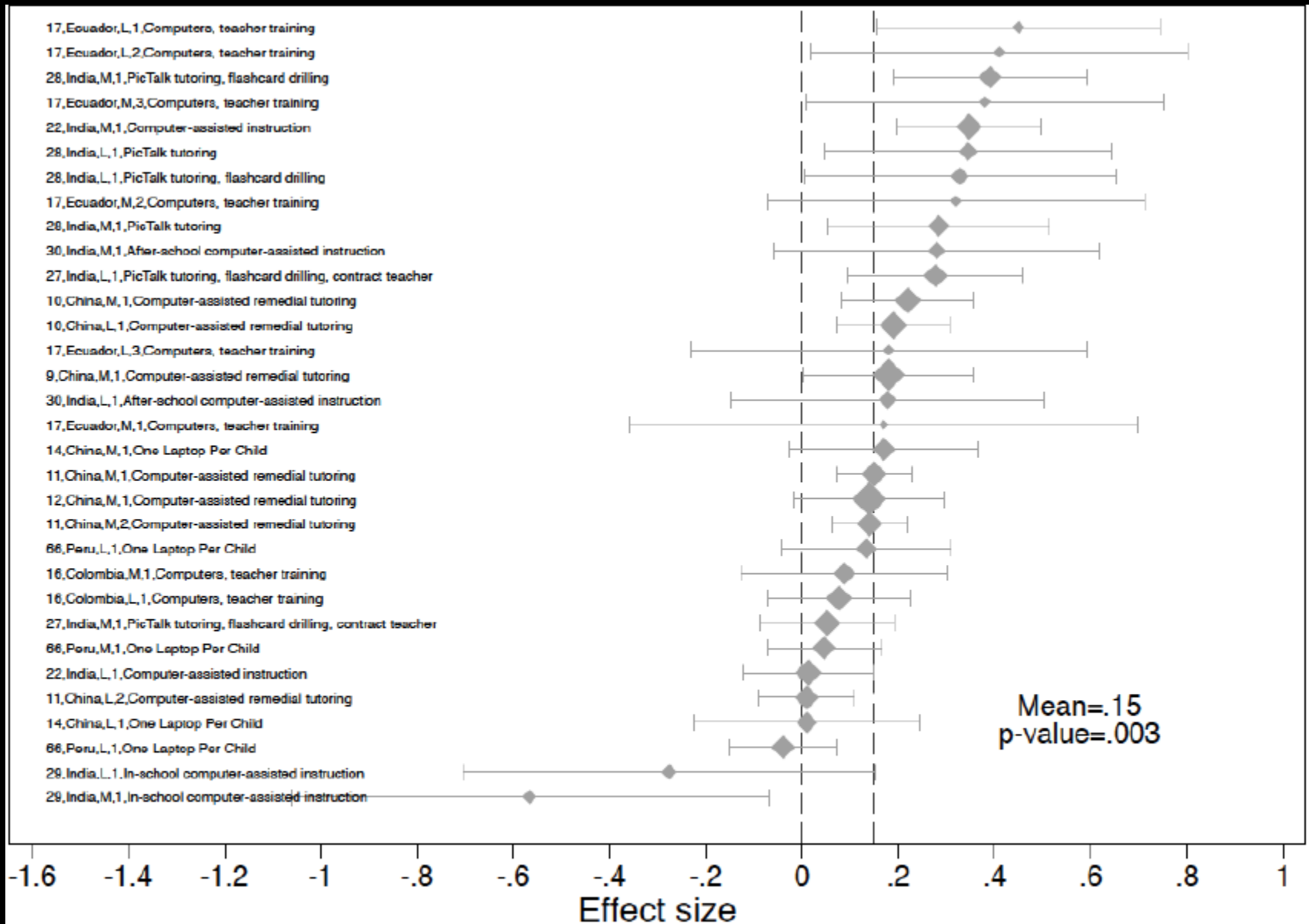
Scores are trending down in India, despite input expansion



Even “input fantasy” only goes so far

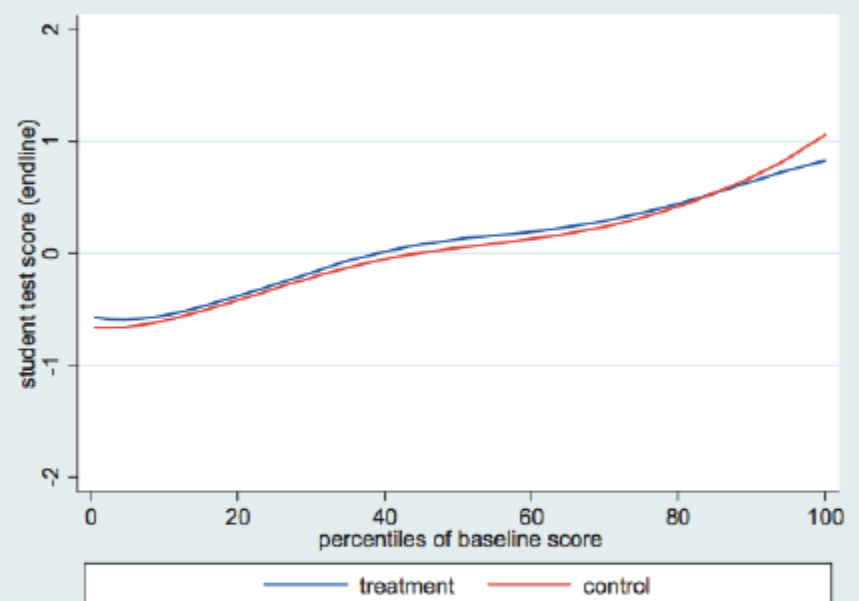
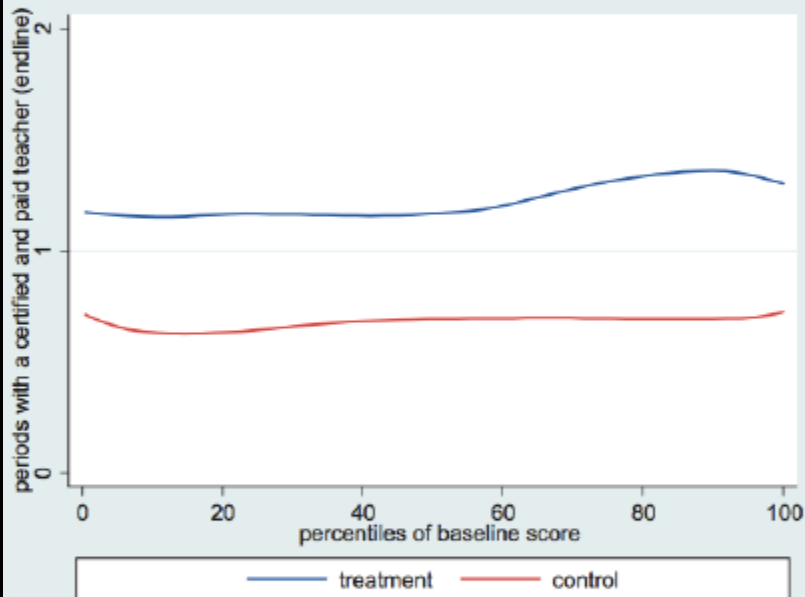
Gain from pushing each input as far as feasible along an estimated input/learning gradient





Source: McEwan 2014, "Improving Learning in Primary Schools of Developing Countries: A Meta-Analysis..."

“Double for nothing” in Indonesia



Source: De Ree, Muralidharan, Pradhan & Rogers 2014. “Double for nothing? The Effects of Unconditional Teacher Salary Increases on Student Performance”

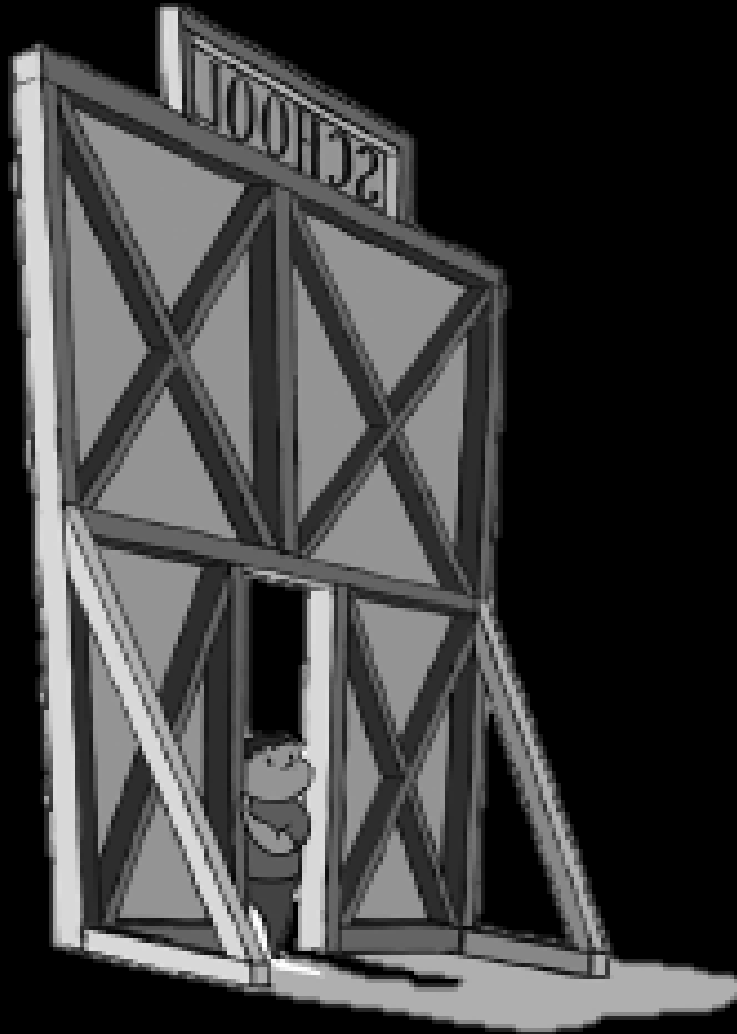


Eastern Coral
Snake
(venomous)



Scarlet King
Snake
(non-venomous)

Current Schooling Goals and Measurements Promote Isomorphic Mimicry



What doesn't get measured doesn't to get done

UNESCO Institute for Statistics—over 1000 “education” indicators

Indicator	Countries with two or more observations, 1998-2010, out of 218:
Enrollment in primary school	213
Pupil-teacher ratio in primary school	202
Adult literacy (self reported, common definition)	91

WB ED Stats—over 2500 indicators

- Recently added data from PIRLS, TIMSS, PISA
- Only 49 of 187 non-high income countries have a repeated internationally comparable measure

The environment for measuring and promoting learning is changing fast



Learning Metrics Task Force (a multi-stakeholder effort of Brookings CUE and UNESCO IS) report for post 2015 learning goals—launched in New York last Wednesday.



UN Sustainable Development Solutions Network (UNSDSN) report “The Future of Our Children” open for comment until October 18th.



World Bank education strategy oriented to learning and service delivery “Learning for All” (2012)



UK new (July 2013) position paper on education “Improving Learning, Expanding Opportunities”

Lots of successes at innovations (often demonstrated with rigorous field experiments) that Allow more local Control—building on Decades of Experience

- Private schools in Pakistan have learning higher by .3 effect sizes a year—just private school of a low quality type gets to 2/3 of the US level
- Remediation programs have enormous effects:
 - Volunteer tutors raise reading by .6 effect sizes in urban India
 - Summer camps produce a years worth of progress in just six weeks
- Contract teachers in Kenya produce large learning gains where additional regular teachers has no impact
- Community schools in Mali, Nepal, El Salvador produce equivalent learning, at times for half the cost of regular schools

Why don't Innovations that Identify Practices that Raise Learning Diffuse Widely and Raise Typical Performance?

“Pockets of good education practice (such as enlightened and effective classroom management, novel curricula, and innovative instructional technologies, many of them cost effective) can be found almost anywhere...Yet – the number of schools affected by these [reforms] is miniscule.”

Crouch and Healey, 1997

Ecosystems of schools

Spiders

Starfish

**System
Characteristics**

Closed

Space for novelty

Open

Agenda
Conformity

(E)Valuation of novelty

Functionality

**Organizations
choose
strategies**

Isomorphic Mimicry
(mimic or normative)

Organization Goal:
Legitimation
(growth, resources)

Demonstrated
Success

Agents

Organizational
Perpetuation

Leadership

Demonstrated
Success

**Leaders
Teachers**

Compliance

Self-interest

Front-line worker
choices

Act with Concerned
Flexibility

Starfish Systems

Open

Locally
Operated

Performance
Pressured

Professionally
Networked

Technically
Supported

Flexibly
Financed

Starfish Systems

Open	Entry and exit is easier to create ecological learning
Locally Operated	Control of educational aspects that require “thick” decision making and responsiveness ceded to those best placed—principals and teachers more autonomous to act
Performance Pressured	Organization with internal norms of a drive to succeed with performance based on maximally available information (but limited “top down” high stakes accountability on thin metrics)
Professionally Networked	Teachers in contact with others so that effective practices can diffuse
Technically Supported	“Higher” levels of education organizations mobilize support for the front-line actors
Flexibly Financed	Finance flows as much as possible to the most local level as untied as possible

Starfish Systems

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Spiders

No school ever closes, management rarely changes
Key decisions are made centrally—including the allocation of teachers to schools and even classrooms
Compliance pressured with emphasis on inputs and process.
Vertically organized, not professional association
Education hierarchy is for “supervision”
Budgets are tied to specific inputs top to bottom

Starfish

Spiders

	Locality-level decentralization	Charter schools (only public-sector entrants)	Community-controlled schools	Private (for and not for profit entrants)	Pure markets for instruction (e.g., tutoring)	
Open?	Entry only by localities	Entry by designated organizations	Entry only by locally organized groups	Open entry	Completely open entry	Closed
Locally operated?	Mixed	Yes	Yes	Yes	Yes	No
Performance pressured?	Mixed	Mixed	Mixed	Yes	Depends on metric	Mixed
Professionally networked?	Regionally	Mixed	Mixed	Mixed	Weak	Hierarchy
Technically supported?			Yes		No	Yes
Flexibly Financed?	Mixed		Mixed	Yes	No financing	No flexibility

What I am *NOT* saying (but you nevertheless may be hearing)

- I am *not* saying “privatization” is a panacea
- I am *not* saying “bottom-up” is a panacea
- I am *not* saying “high stakes” testing for students or teachers is a panacea

The rebirth of modern schooling

- From schooling goals to learning goals—drive around specific and simple performance targets both early (e.g. reading fluently by grade 3) and late (e.g. conceptual mastery and application by grade 8/9)
- From “dead spider” systems attempting “more of the same” in expansion or augmenting EMIS visible inputs to OP/LO/PP/PN/TS/FF *ecosystems* that support performance driven schools and teachers