

SERVICE DELIVERY INDICATORS

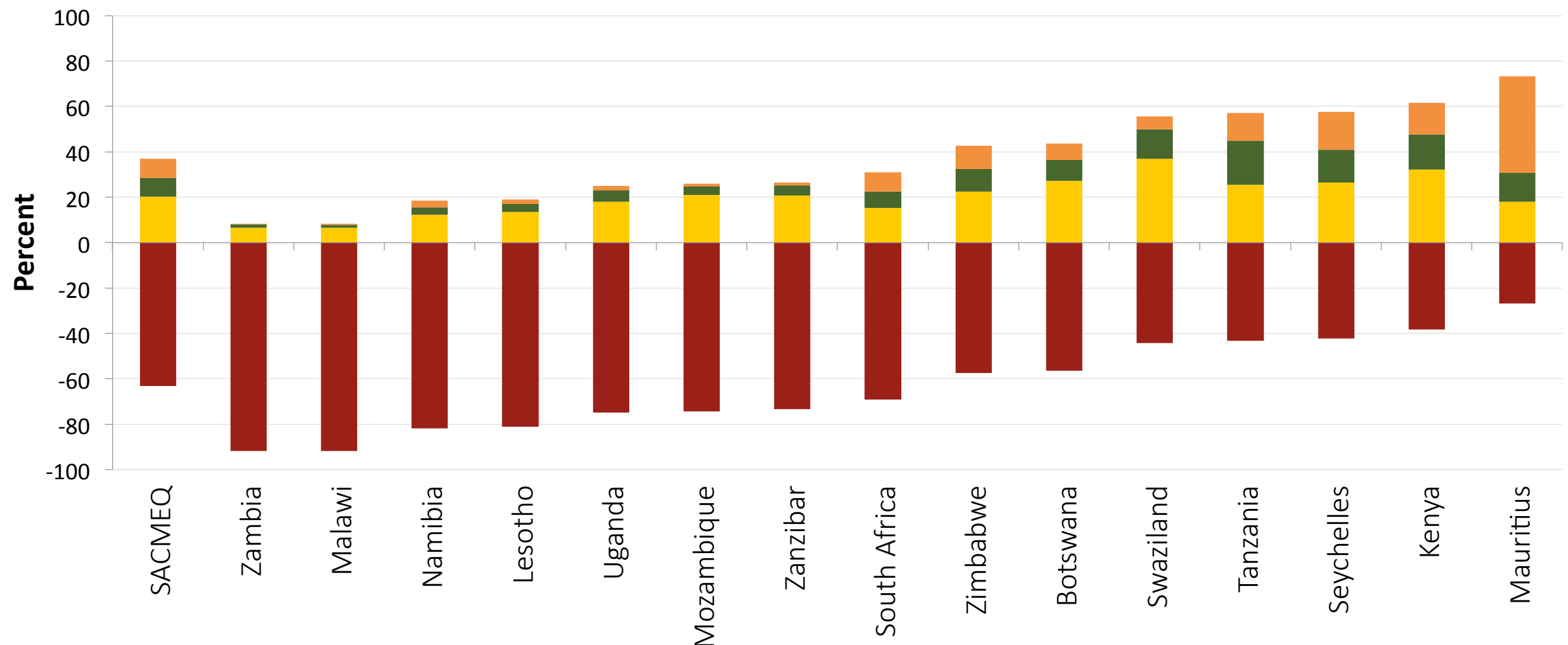
Education quality in Sub-Saharan Africa

Deon Filmer (World Bank)
on behalf of the SDI Team

RISE Conference
June 2015

What's the problem? **Extremely low performance**

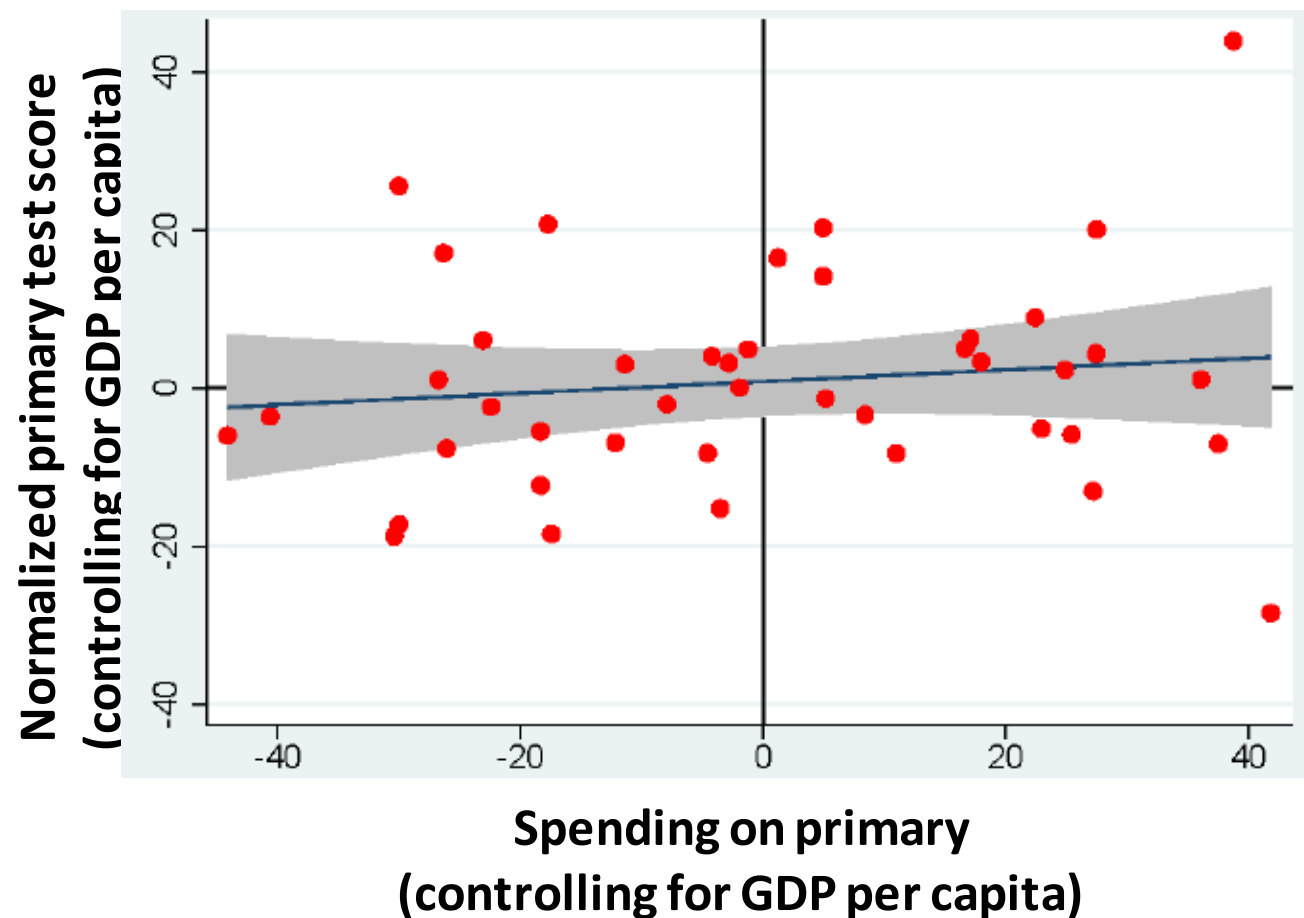
SACMEQ Math 2007: Proportions of **Grade 6** students scoring at “Pre-, Emergent and Basic Numeracy”, “Beginning”, “Competent” and “Skilled” levels



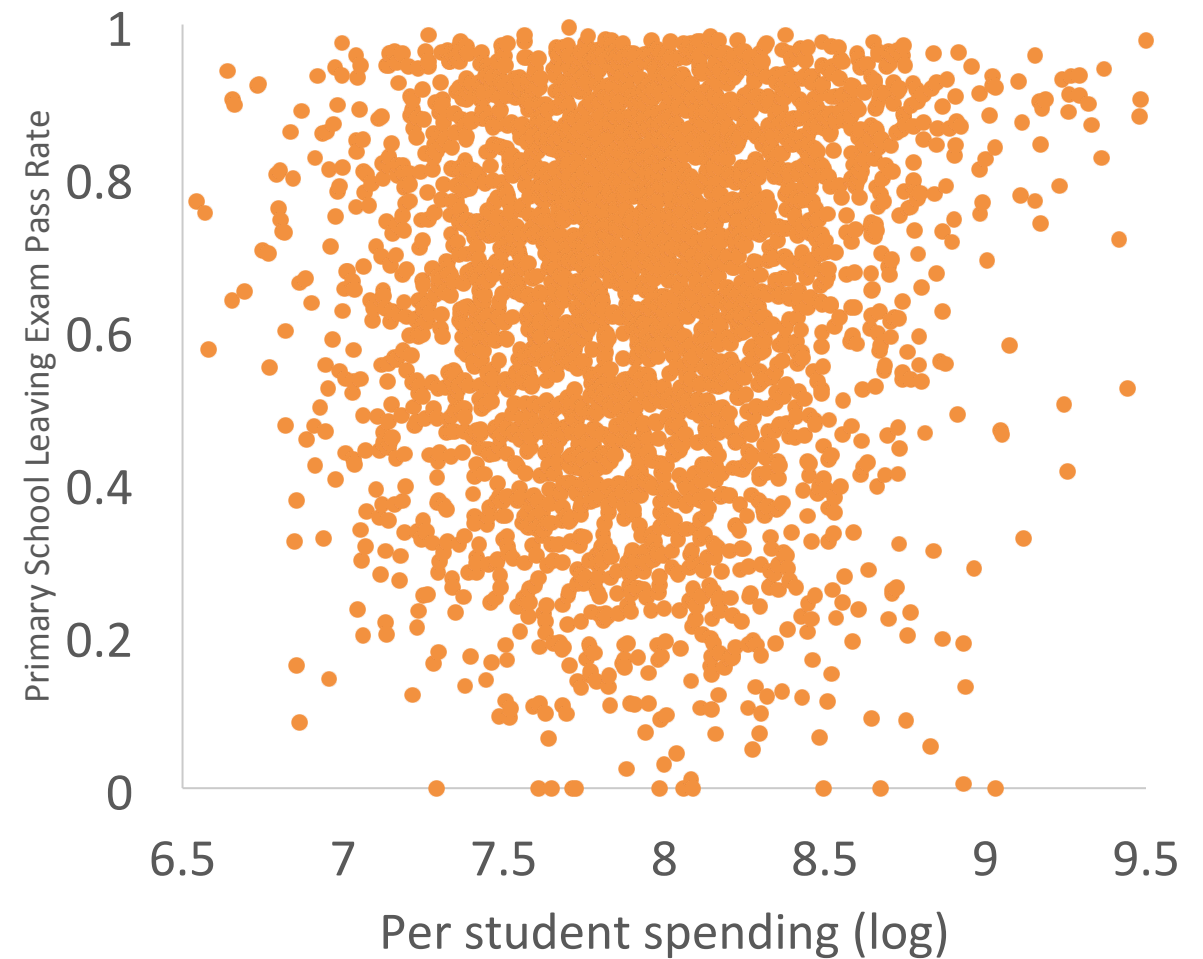
- Mathematically skilled, Concrete and Abstract problem solving (Levels 6,7,8)
- Competent (Level 5)
- Beginning numeracy (Level 4)
- Pre-, Emergent and Basic numeracy (Levels 1,2,3)

How much does **money** matter?

Primary math test scores vs. public education spending

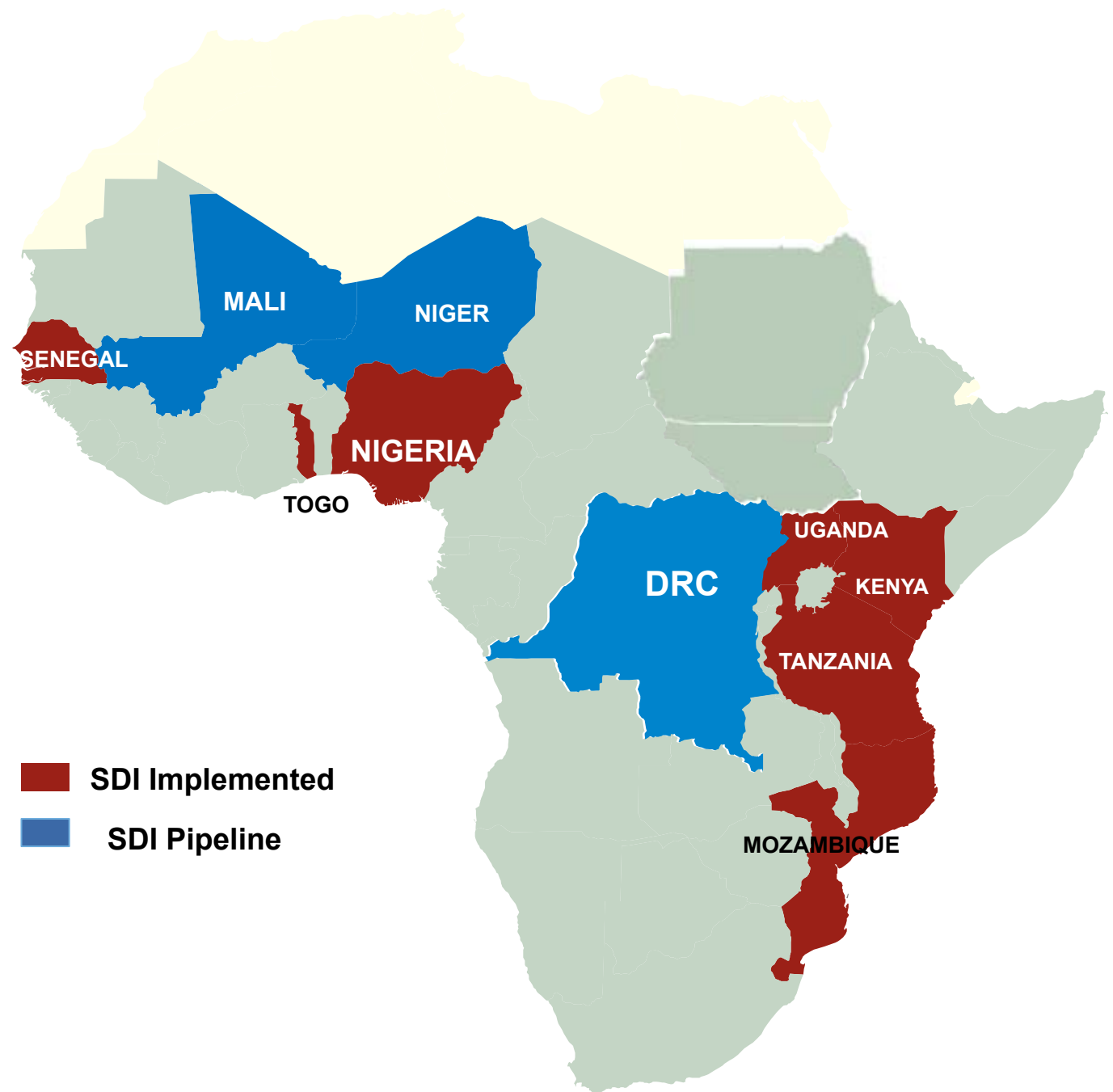


Malawi **Primary School Leaving Exam (PSLE)** pass rate vs. per-student spending



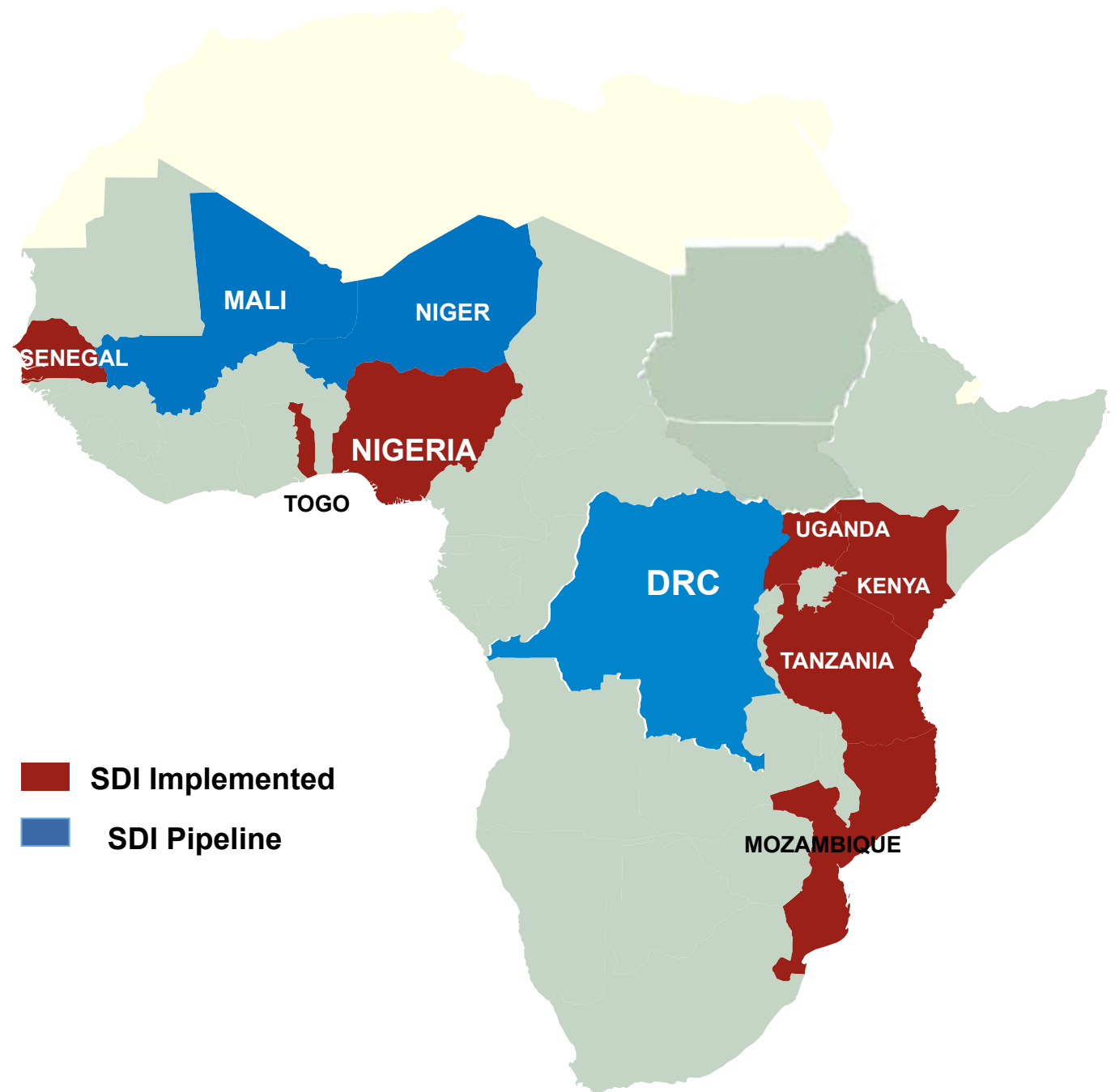
Service Delivery Indicators Surveys

- **School and health facility surveys** to understand what happens inside the service delivery units
- **Nationally representative** sample, also disaggregated by rural/urban and by public/private
- Consistent methodology for **comparable** data across countries and **repeated** every 2-3 yrs
- Implementation by **national research institutes**



Service Delivery Indicators Surveys

- **Implemented in 7 countries**
-- representing the service delivery experience of roughly **350 million people**
- **Pipeline for 2015/16**
- **Publicly** launched in 4 countries (+2 pilots); 2 more currently being planned



What does SDI measure?

Provider Effort



Teachers

- Absence from school
- Absence from classroom
- Time spent teaching

Health workers

- Absence from facility
- Caseload per provider

Provider Ability



Teachers

- Minimum knowledge to master the curriculum
- Quality of instruction

Health workers

- Diagnostic accuracy
- Adherence to clinical guidelines
- Management of maternal/neonatal complications

Availability of Key Inputs



Schools

- Teaching equipment availability
- Student-teacher ratio
- Students per textbook
- Infrastructure availability

Health facilities

- Equipment availability
- Drug availability
- Infrastructure availability

Results Chain and Data Sources

EMIS

SABER
(Policy, Legal and Institutional
Framework)

SACMEC,
PASEC,
TIMSS,
Uwezo,
Beekunko

Inputs



Quality of
Policies &
Institutions



Quality of
Policy
Implementation



Quantity and
Quality Services
Delivered



Learning
Outcomes

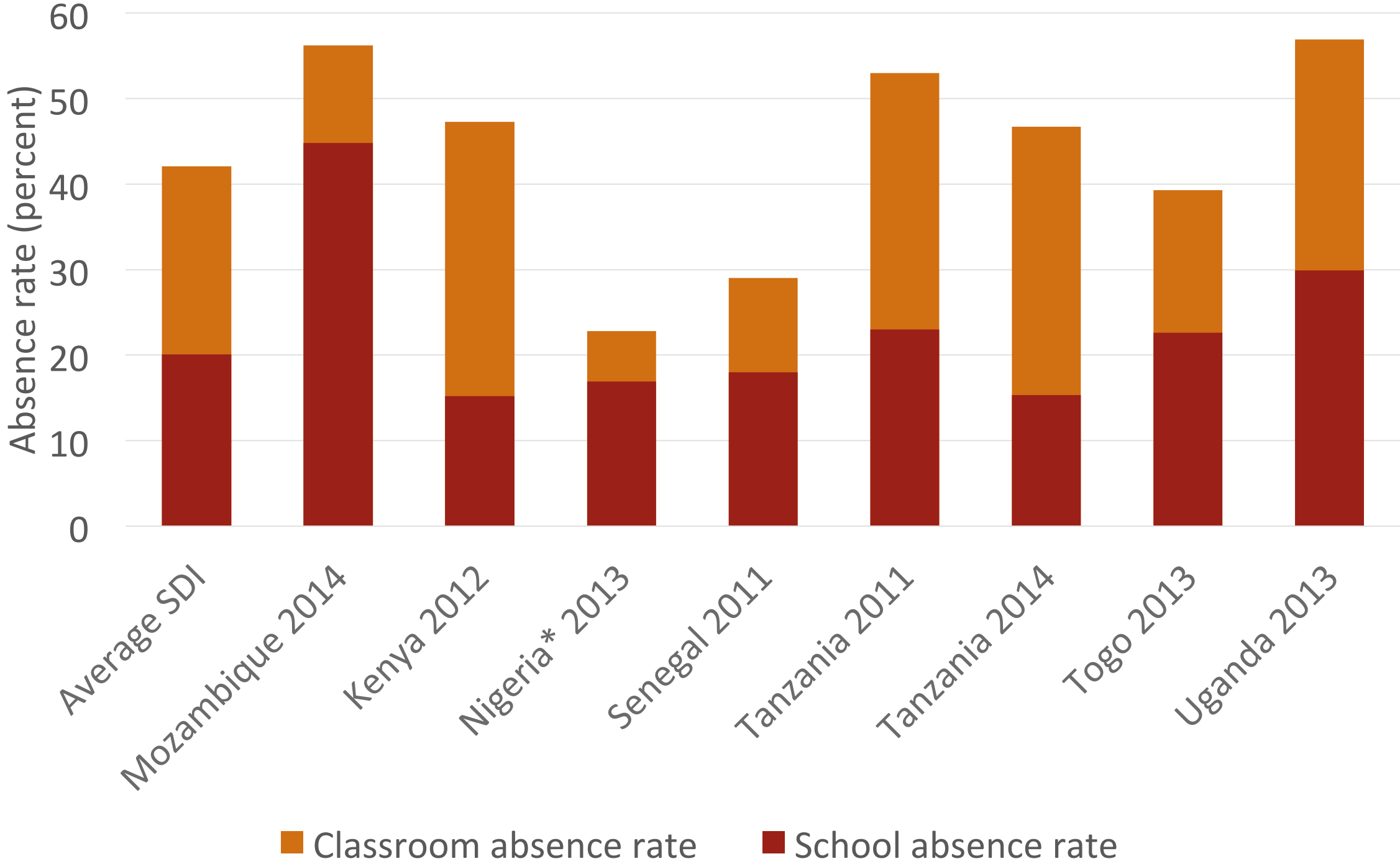
Service Delivery Indicators

SDI Surveys

Some key features of the SDI school instrument

- **Absenteeism** from school, and from class, during unannounced visit
- **Classroom observation** module collects detailed time-on-task, as well as teacher practices data
- **Direct assessment of teacher skills**
 - Math and language items drawn from 4th grade curriculum
 - Pedagogical skills test (lesson plan from newspaper article; assessment of strengths and weaknesses of written paragraphs; interpreting student test score patterns)

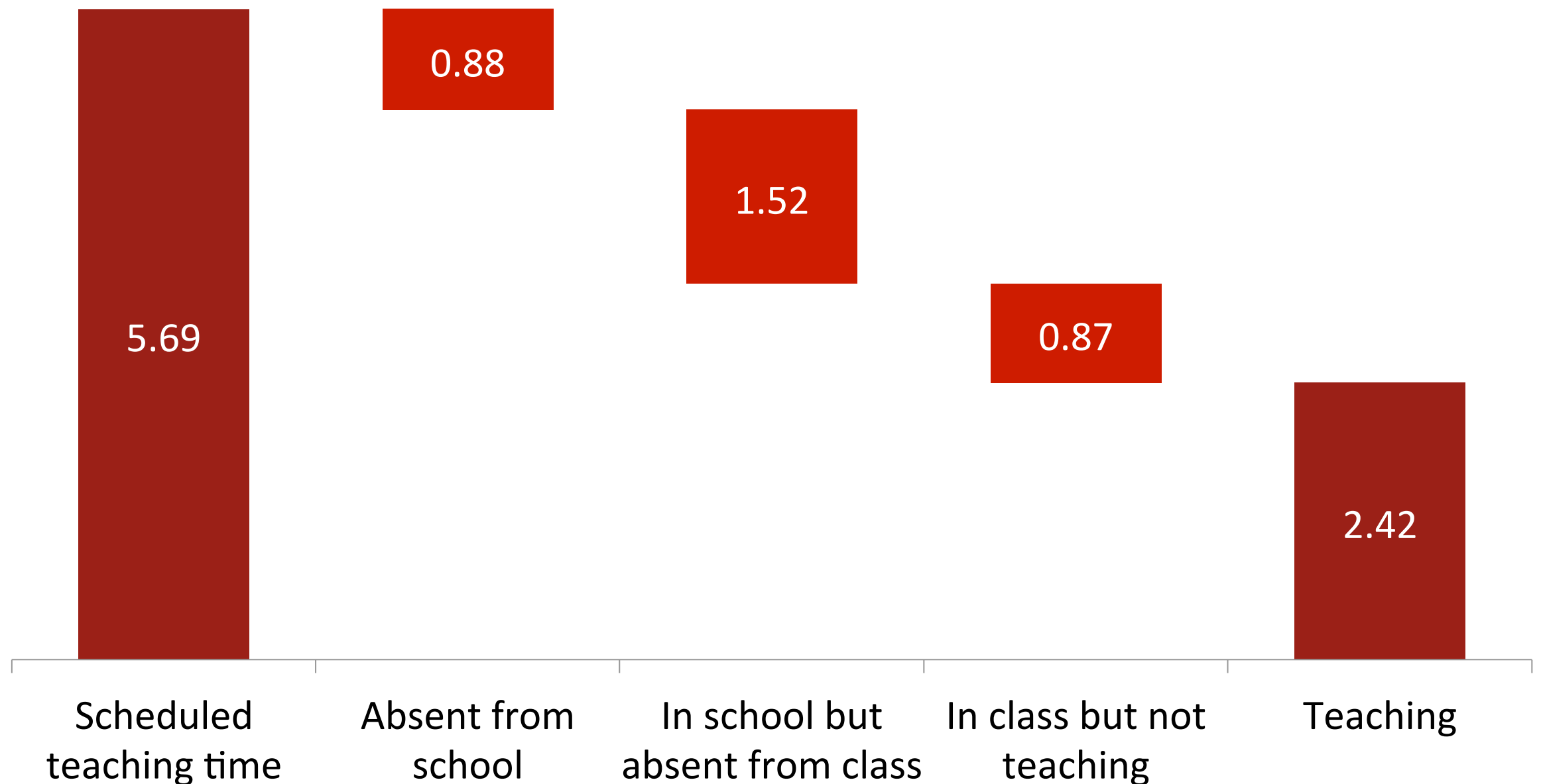
SDI Findings: Absenteeism



* Nigeria is 4 States

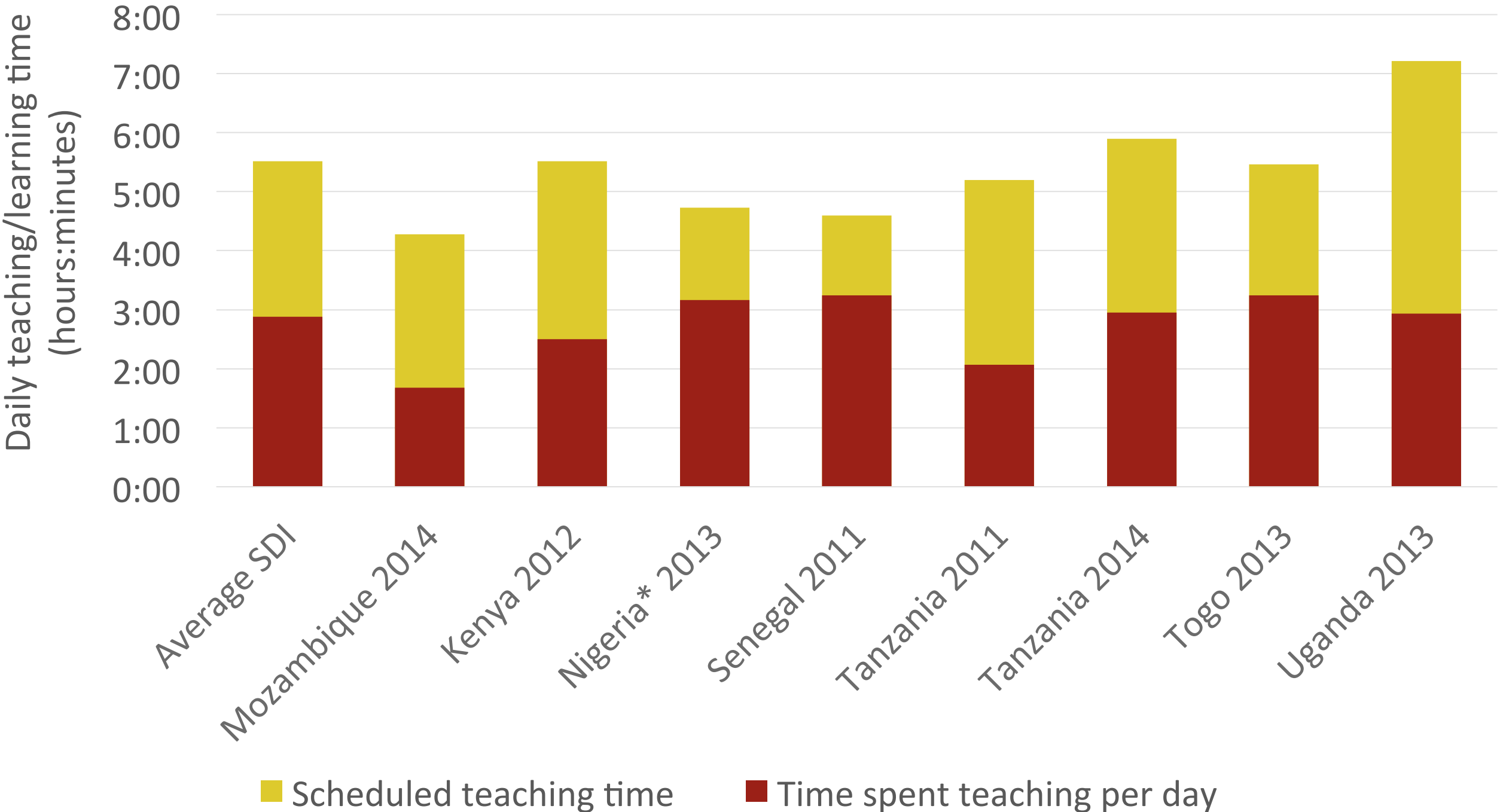
Contributors to low teaching:

Kenya: Average teacher absence and time spent teaching (in hours)



On average, remaining teaching time per day is approximately 2h 40mins, less than half of the schedule time. The main source of leakage is due to teachers in schools but absent from classrooms.

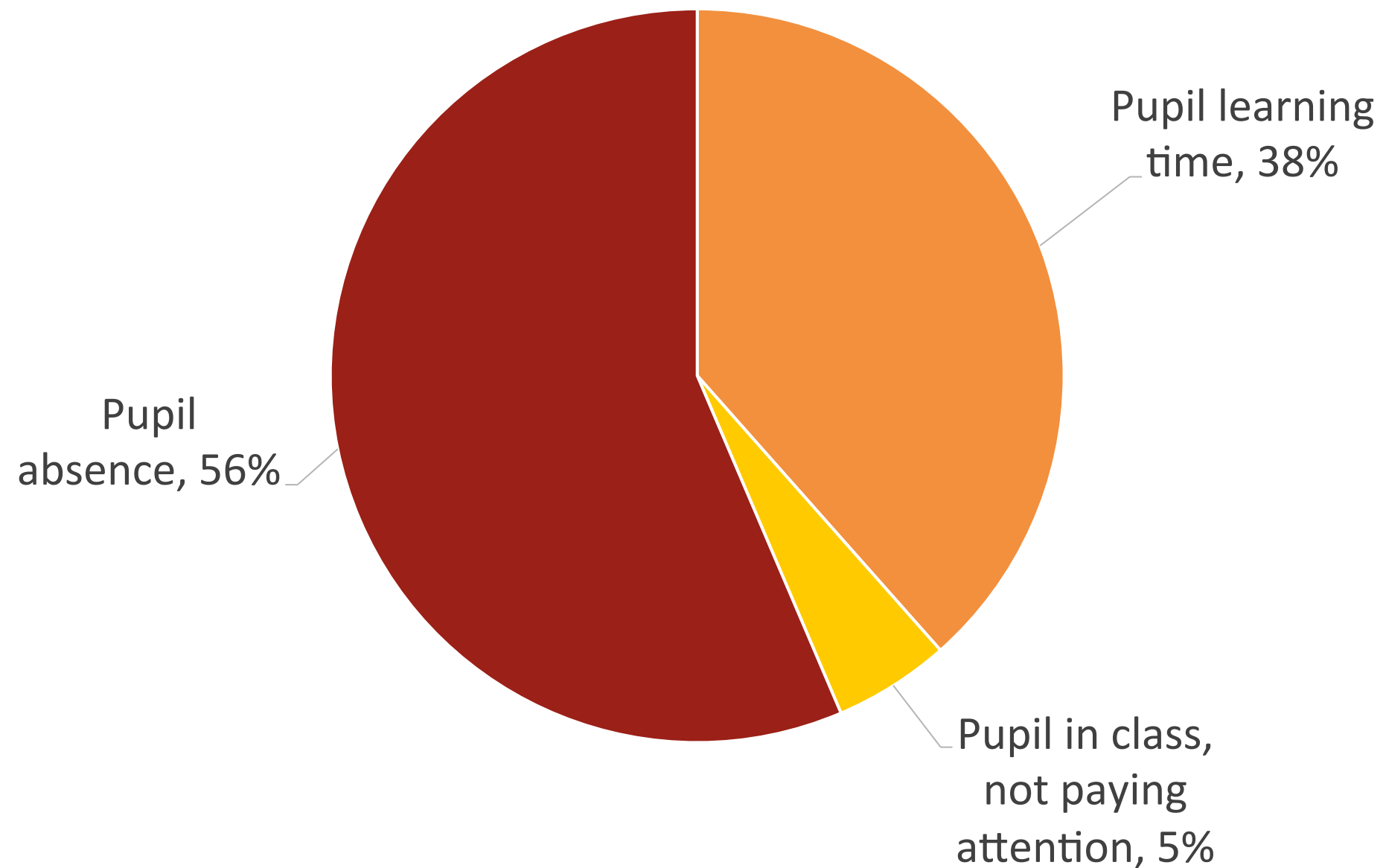
SDI Findings: Time spent teaching



* Nigeria is 4 States

Time spent learning in Mozambique

What are students doing when teachers are on task?



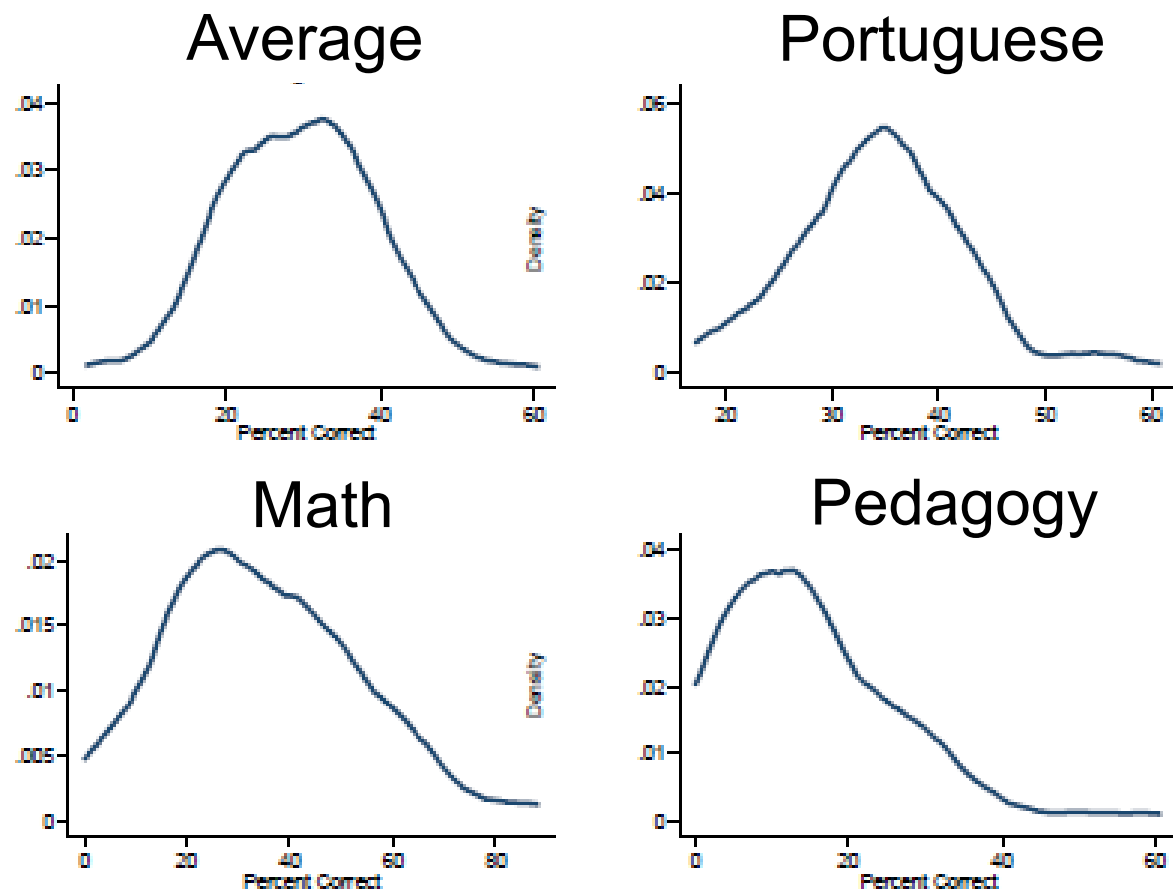
SDI Findings: Teacher skills in public schools

	Average SDI	Kenya 2012	Mozambique 2014	Nigeria* 2013	Tanzania 2014	Togo 2013	Uganda 2013
Minimum knowledge (At least 80% in language and mathematics)	12.7	34.8	0.3	2.4	15.6	0.9	10.1
Test score (language, mathematics, and pedagogy)	42.0	55.6	26.9	30.5	46.6	33.9	43.3

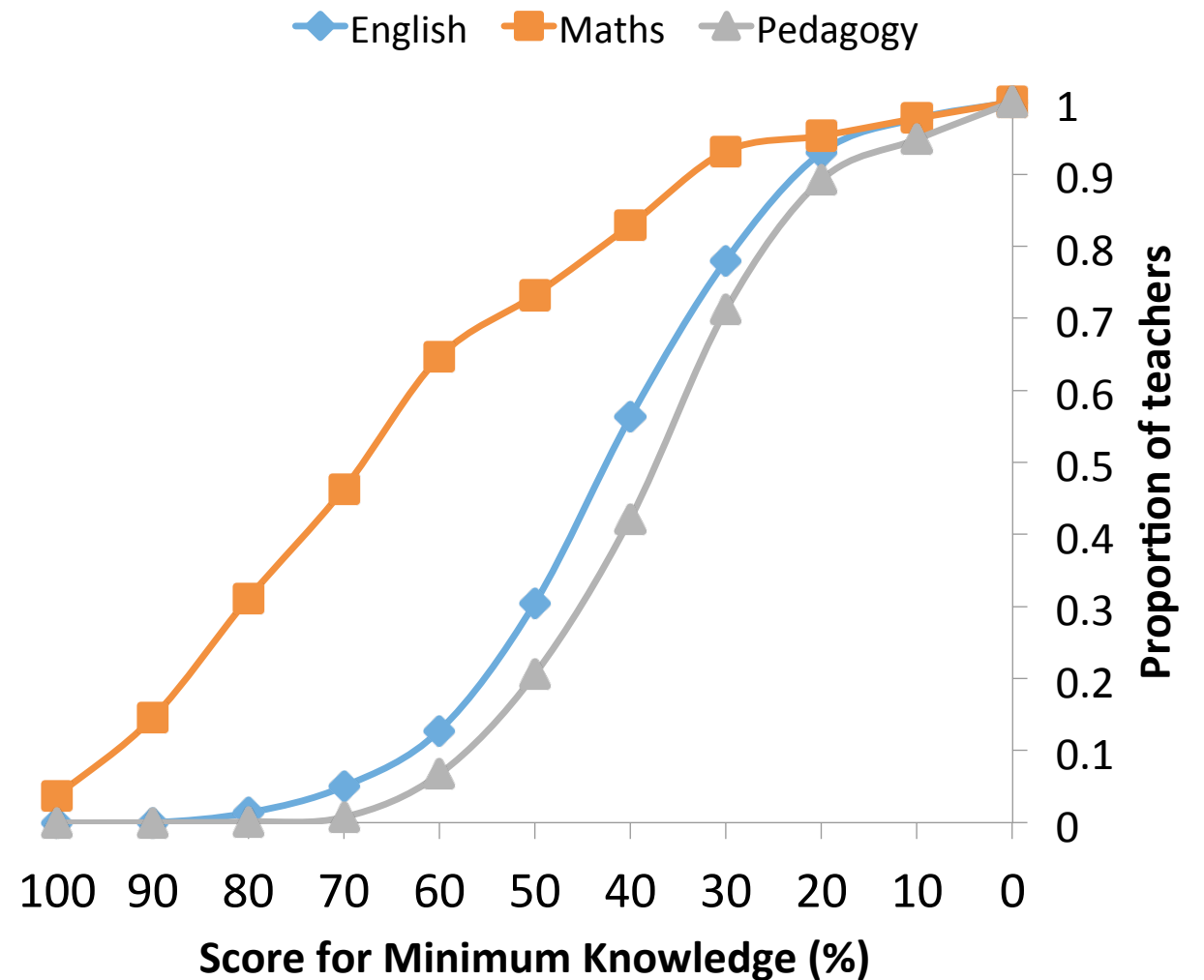
* Nigeria is 4 States

Heterogeneity in teacher test scores

Distribution of test scores in Mozambique

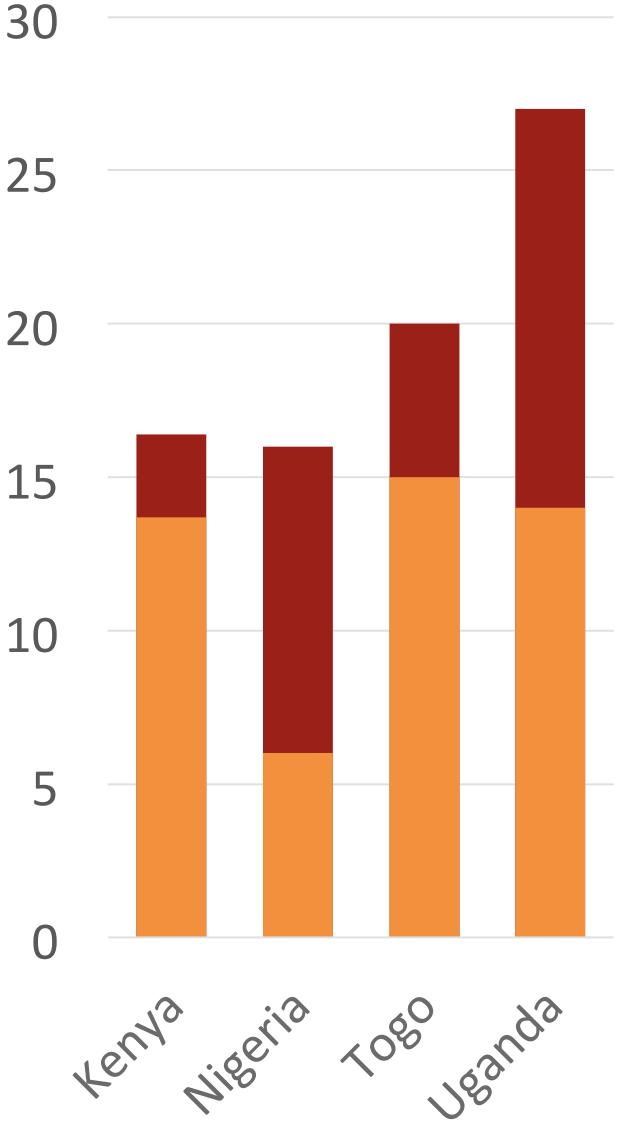


Sensitivity of “Minimum Knowledge” to cutoff score in Tanzania



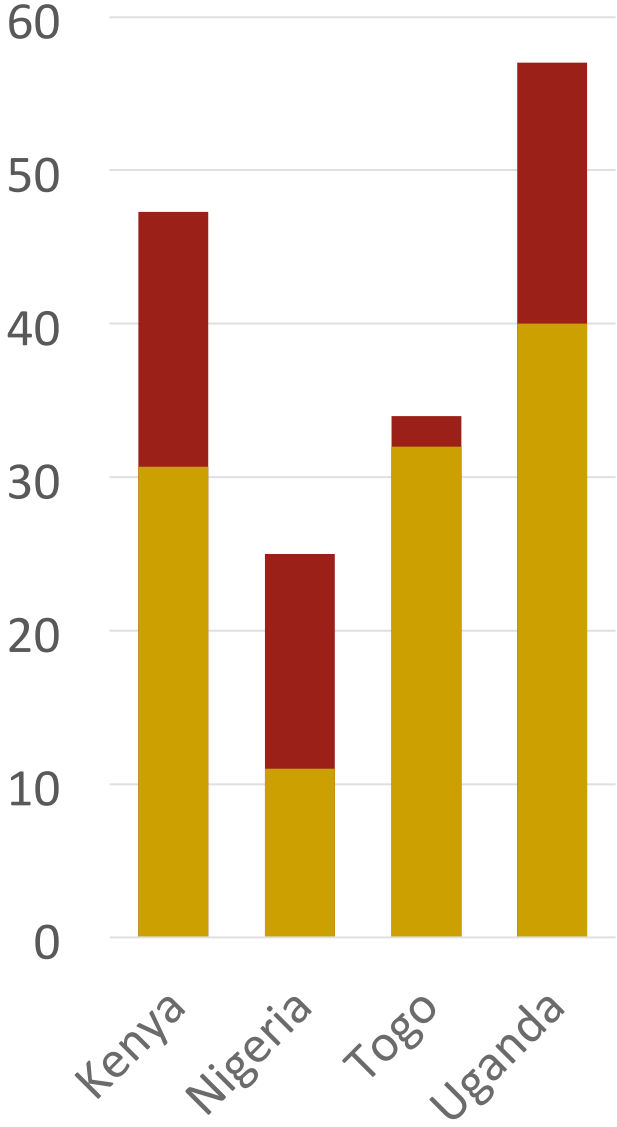
Private versus public schools

Absence from school (%)



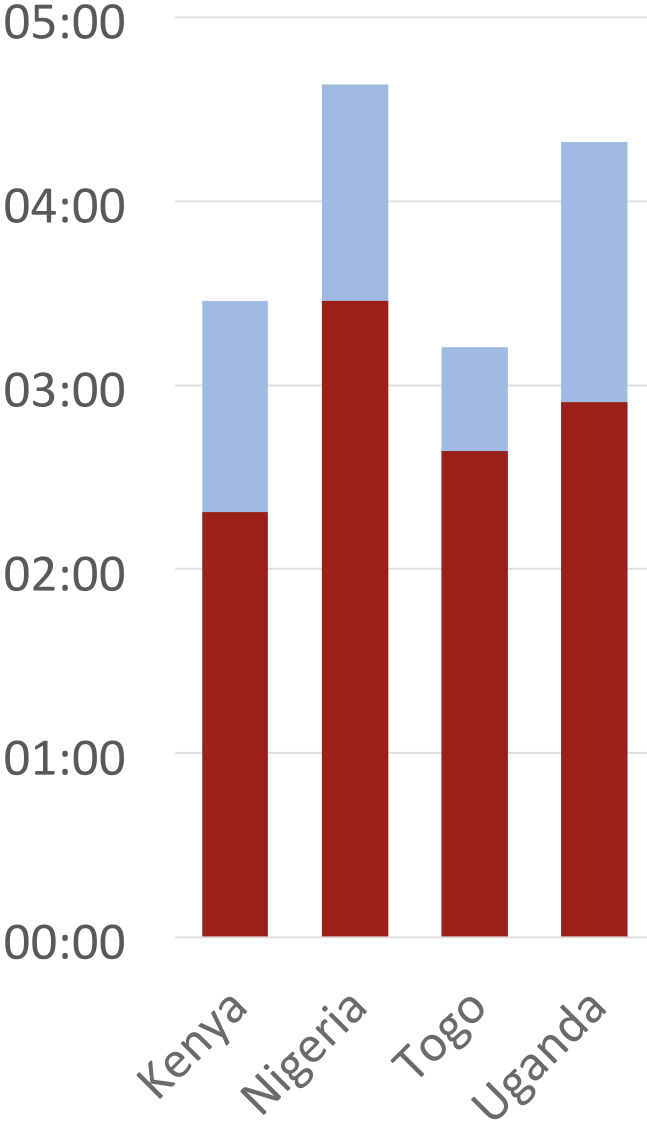
Public Private

Absence from Class (%)



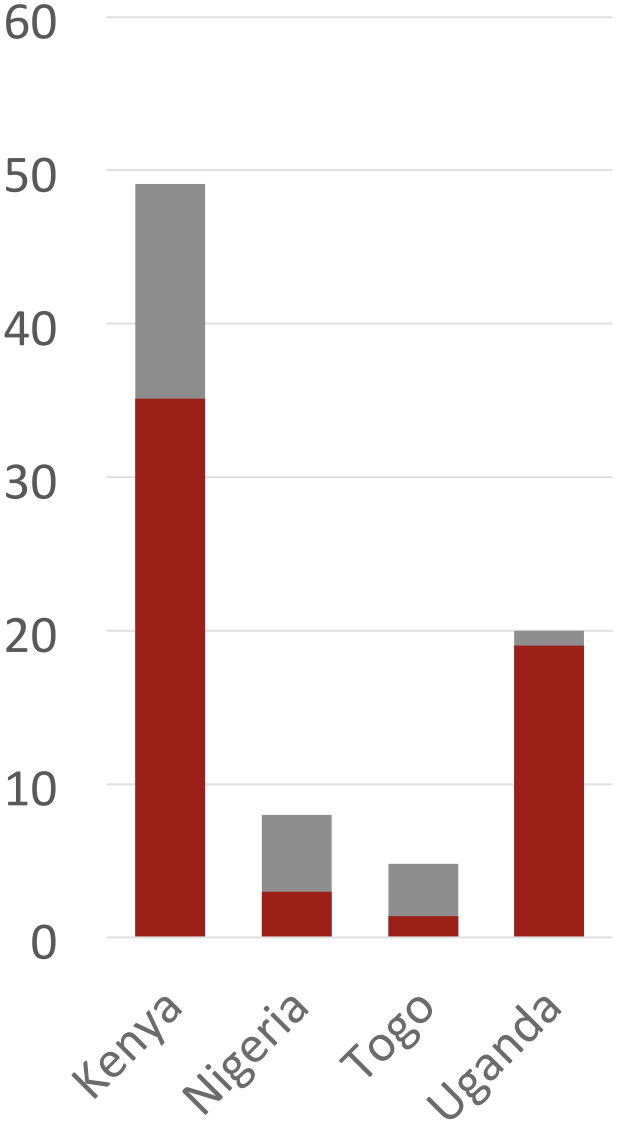
Public Private

Time teaching (hours:minutes)



Private Public

Minimum knowledge (%)

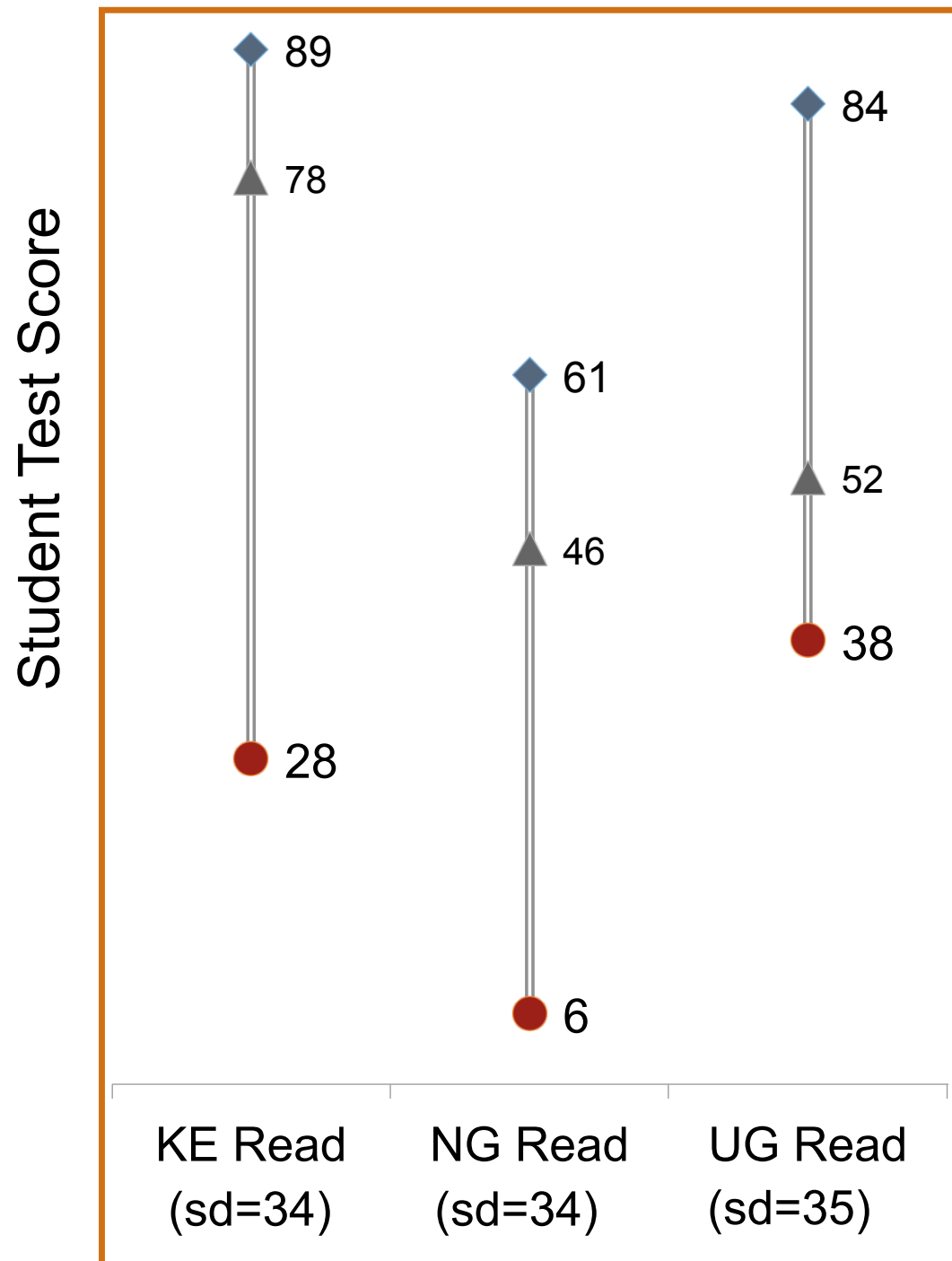


Private Public

* Nigeria is 4 States

Service Delivery Quality Matters:

Within country differences: learning outcomes between a country's best and worst schools differ by as much as 60 points



- ◆ **Best Schools**
In top deciles of teacher presence, and subject knowledge, and in bottom decile of pupil/teacher ratio
- ▲ **Average schools**
In 45th-55th percentile of teacher presence, and subject knowledge, and pupil/teacher ratio
- **Worst Schools**
In bottom deciles of teacher presence, and subject knowledge, and in top ventile of pupil/teacher ratio.

Service Delivery Quality Matters:

Between country differences: learning outcomes in Nigeria's best are worse than the outcomes in Kenya's worst schools

◆ **Best Schools**

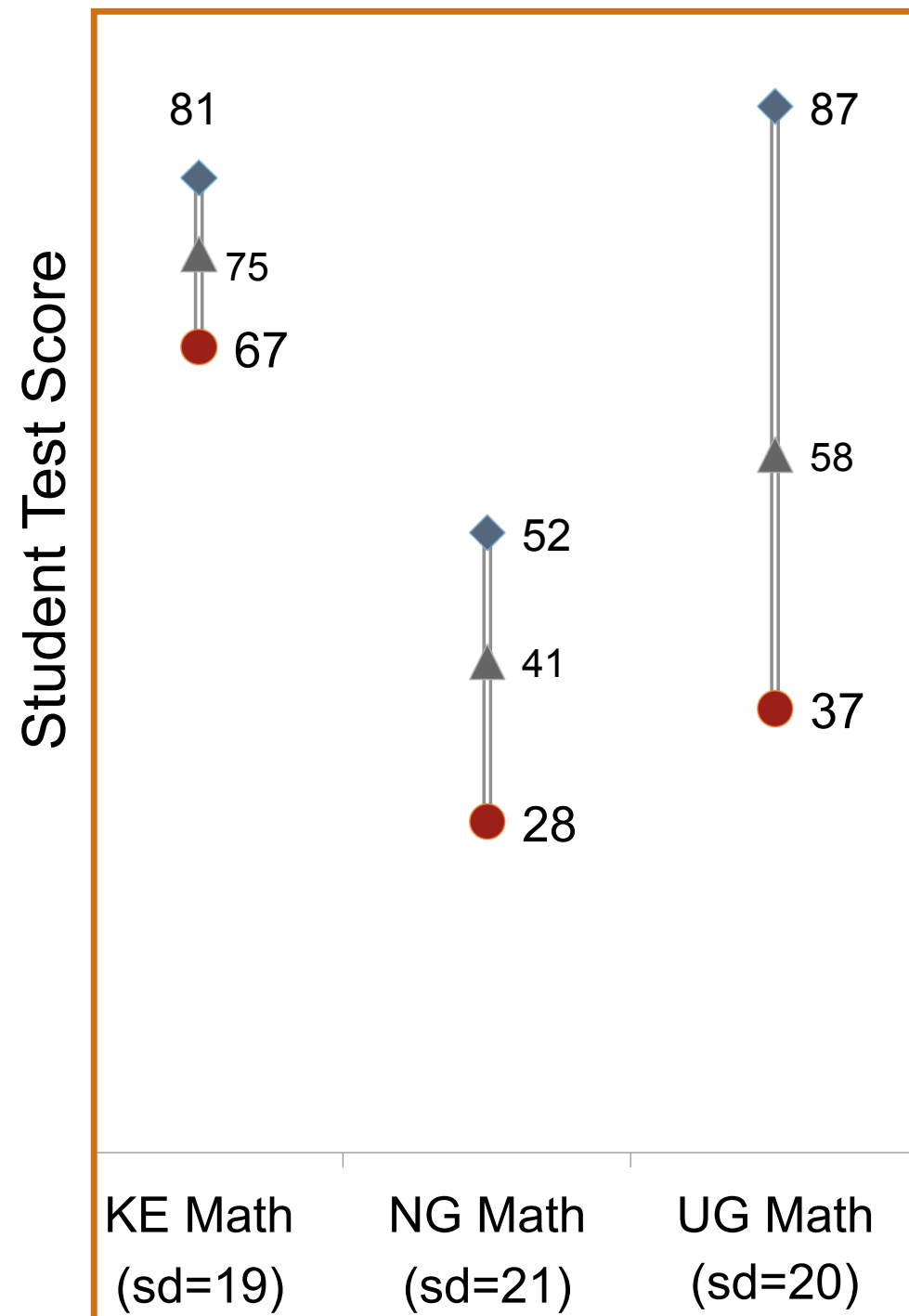
In top deciles of teacher presence, and subject knowledge, and in bottom decile of pupil/teacher ratio

▲ **Average schools**

In 45th-55th percentile of teacher presence, and subject knowledge, and pupil/teacher ratio

● **Worst Schools**

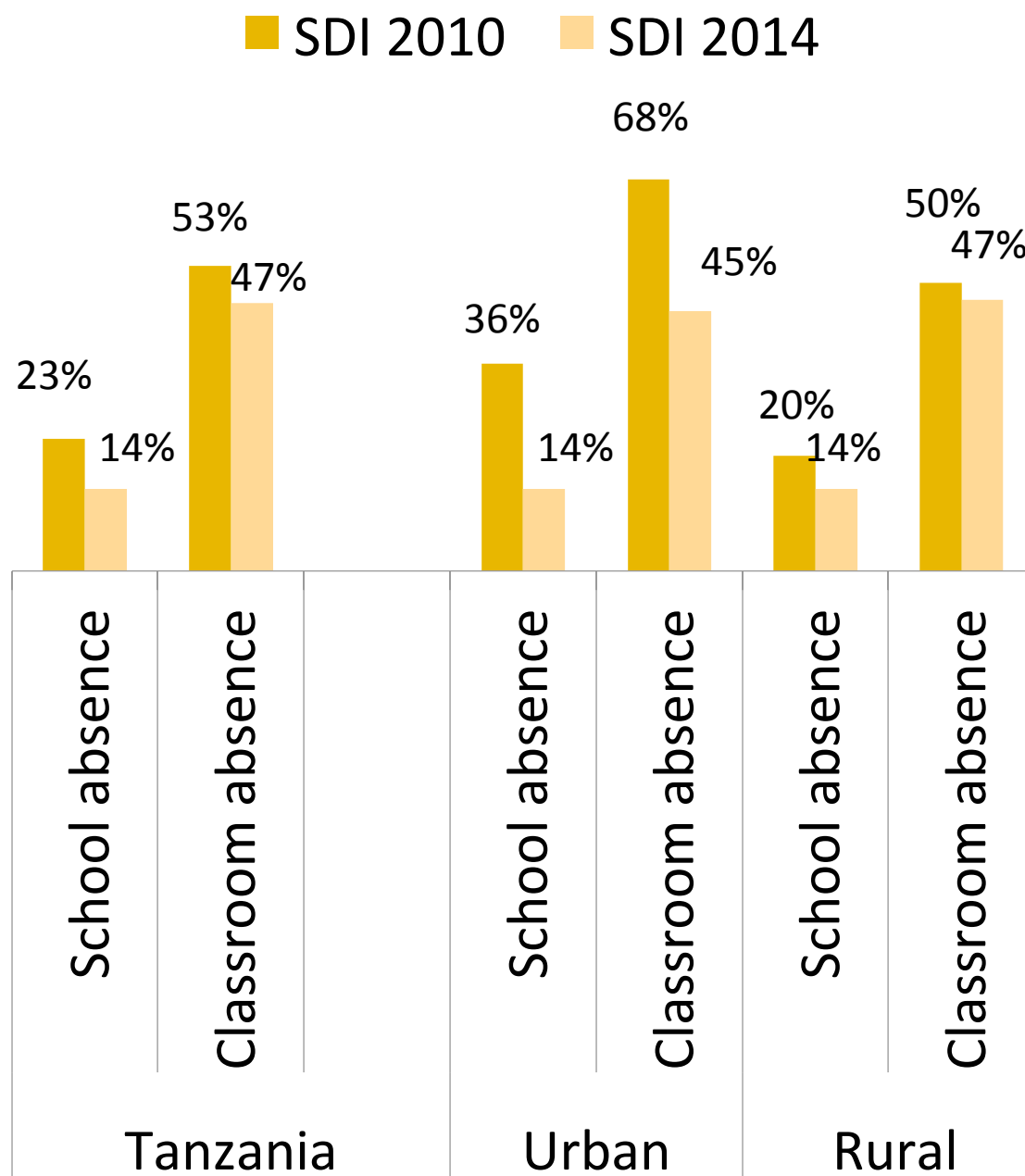
In bottom deciles of teacher presence, and subject knowledge, and in top ventile of pupil/teacher ratio.



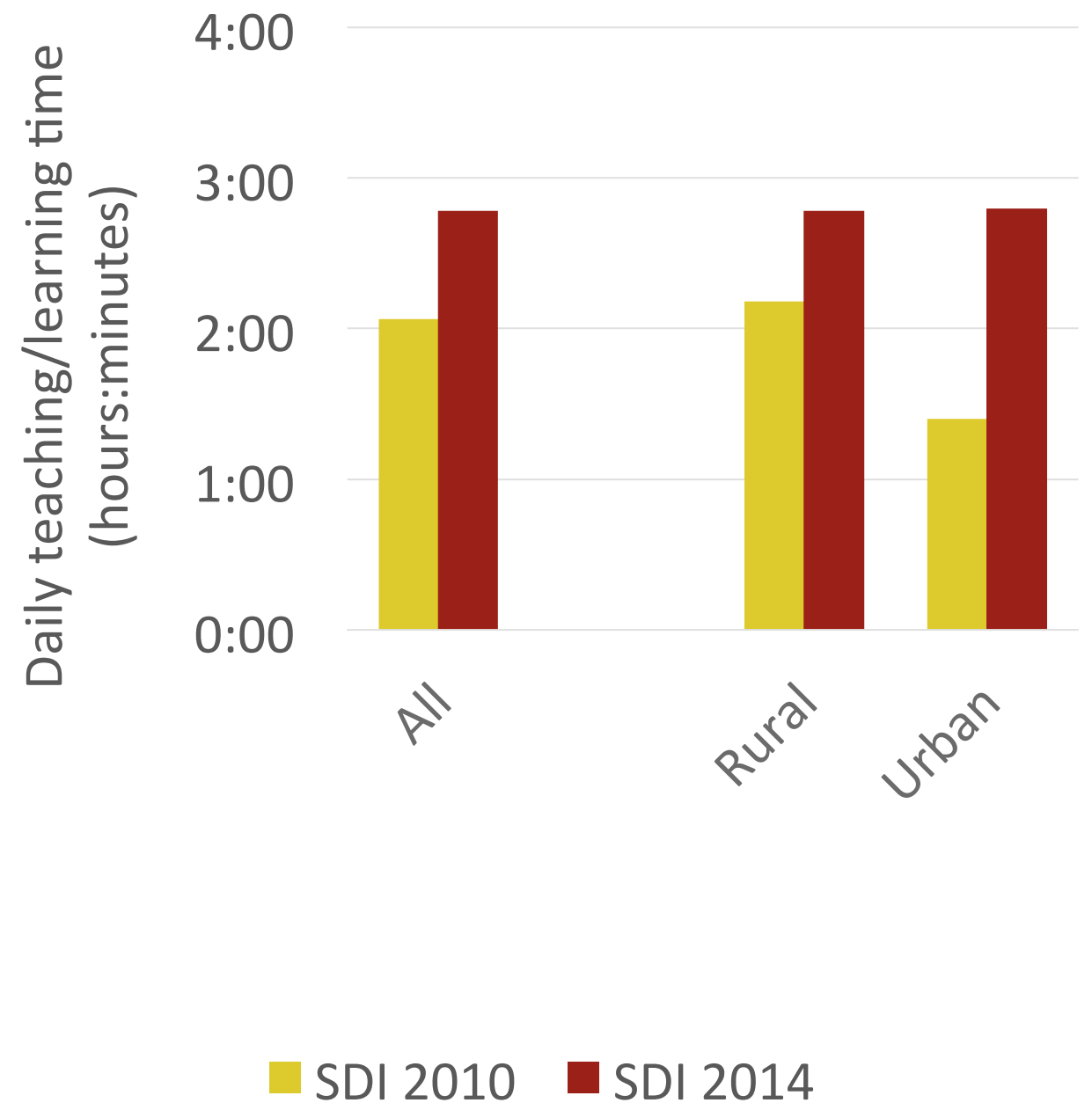
Service Delivery Quality can change

Improvements in Tanzania

- In teachers' effort...



- ... which led to more teaching time



→ Trying to get more out of the data ...

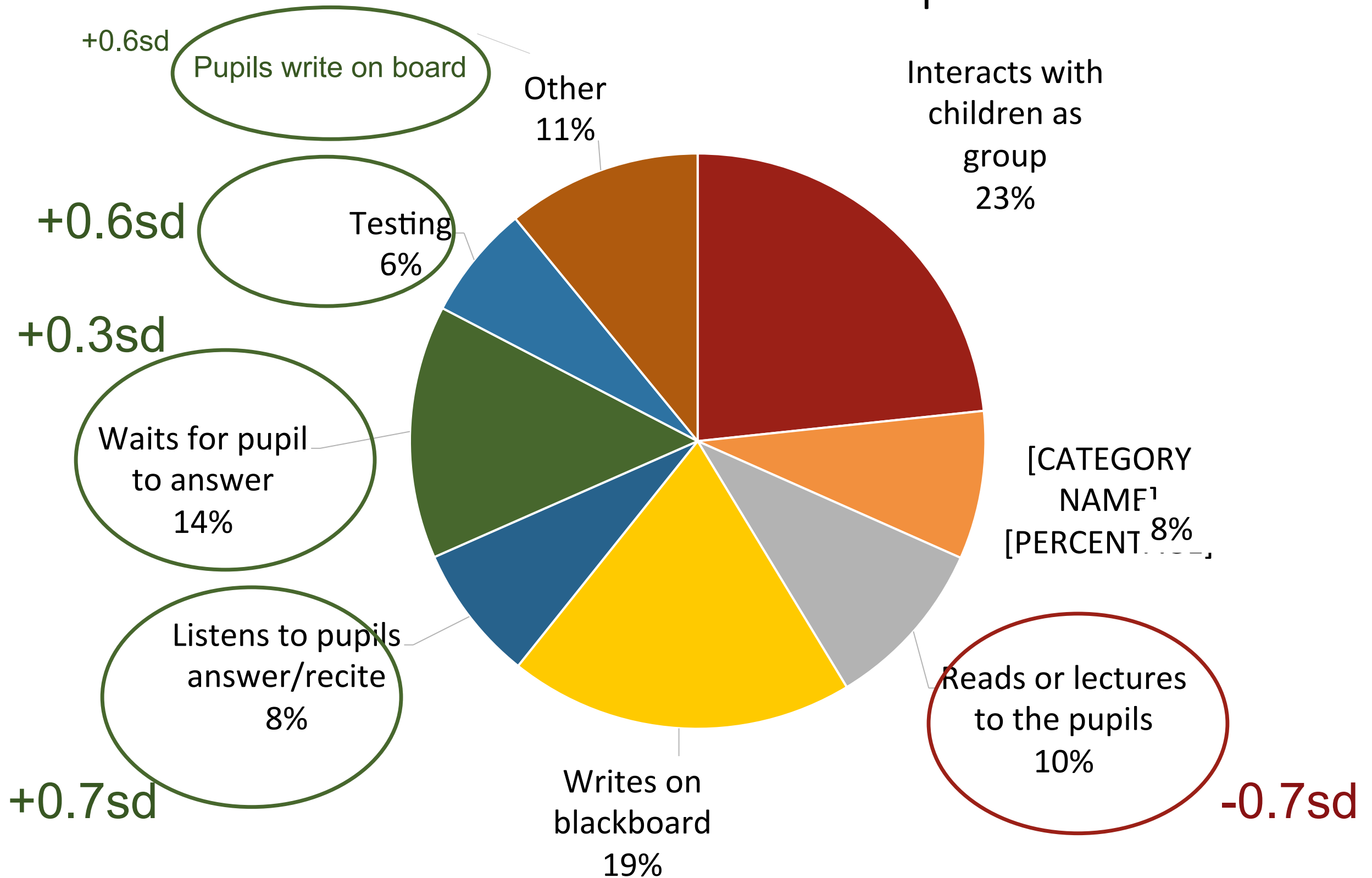
How are teacher performance measures linked to **learning outcomes**?

(But recognizing the **cross-sectional** nature of the data)

What happens in the classroom matters

- Teacher/Classroom effects explain about 15% of variation in achievement
- Scope for changing what takes place in classroom to have impact
- **Teacher skills matter**
 - Teacher subject knowledge and pedagogical skill, instruction time, and practices each matter
 - Impacts on the order of **0.15 standard deviations** of achievement
- But ...
 - Considerable differences between classrooms remain after accounting for these characteristics

Classroom observation: Teachers' practices



Using SDI Data: Not just a research/technical exercise

→ Moving students up in within the existing distribution of test scores is only one part of the challenge (only 15% of the variation explained by classroom/teacher factors)

→ An important part of SDI is **injecting data into national debate**—to help foster change that could move the entire distribution up

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Today's Pick

Teacher absenteeism: pupils best placed to fight vice
Publish Date: May 10, 2014



Pupils of Kizibu Junior School attend classes as a result of the initiative. Photos by Caroline Ariba

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By Caroline Ariba
"Class, what is this?" a teacher calls out to his pupils in Kizibu Junior School in Kiryandongo district during a lesson. "Dat is a cow!" the seemingly attentive pupils chorus. Outside, however, a few teachers can be seen rushing off for the next class.

For a rural school, this is almost unheard of, as a typical school day for them entails a handful of teachers lounging under the school trees, whilst the pupils devour the fruits in the compound.

Only last year, it was a different picture. "You would have found the teachers under the tree," the head teacher says. <http://www.newvision.co.ug/news/655416-teacher-absenteeism-pupils-best-placed-to-fight-vice.html>

Education in Kenya
Classroom divisions

The goal of wider enrolment, he argues, was "poorly conceived", as it had set up standards. A World Bank report in 2013 found that Kenyan teachers were absent almost half the time. And pupils in Kenya's state schools received on average less than two hours of instruction a day. Another study found that only one-third of primary sector teachers scored at least 80% when tested on the curriculum they were to teach each.

<http://www.economist.com/news/middle-east-and-africa/21596981-paid-private-schools-are-better-value-money-free-sort-classroom>

Latest News President back in Burundi after coup attempt

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Why Ugandan pupils don't learn

SUNDAY, 25 MAY 2014 21:50 BY RONALD MUSOKE



Pupils attending classes at St. Anthony's Boys primary school Budaka district. INDEPENDENT/JIMMY SIYA

When Uwezo education survey statistics tell half the story
Only 16% of pupils in Primary level three can pass a test of Primary Two level in Kenya, Uganda, and Tanzania. By Primary Seven level, 20% of pupils still cannot pass the Primary Two level test. Most of those who fail are from Uganda.

These are some of the highlights in the Uwezo Learning Assessment Survey 2013. Uwezo, an NGO dedicated to improving literacy and numeracy among school-age children between 6 and 16 years through creating social situation awareness, has published the reports since 2009.

Data on learning outcomes, school conditions, and homes of the children is collected in selected districts. The Uwezo surveys are "citizen-led household based assessments" meaning that they are conducted at home not school and directed at the citizens.

The idea is to gather information that can be used to monitor national and regional performance trends, and allow comparisons between countries.

The latest report entitled, "Are Our Children Learning: Literacy and Numeracy Across East Africa 2013," is the third in the series.

<http://www.independent.co.ug/news/news-analysis/8993-why-ugandan-pupils-dont-learn>

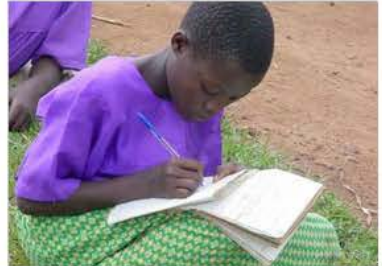
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Home » Columnist
How teachers' absenteeism greatly effects education

BY MASOZI NYIRENDA
17th March 2014

Comments Print Email

A Study Titled "the impact of student and teacher absenteeism on student performance at the Junior high school: the case of the Kumasi-Metro School District" done by Obeng-Denteh et. al of Department of Mathematics, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, argues that it is an expectation that an employee who is hired to perform a job attend work on a regular basis in order that scheduled work assignments can be carried out by the most appropriate staff without disruption to other staff.



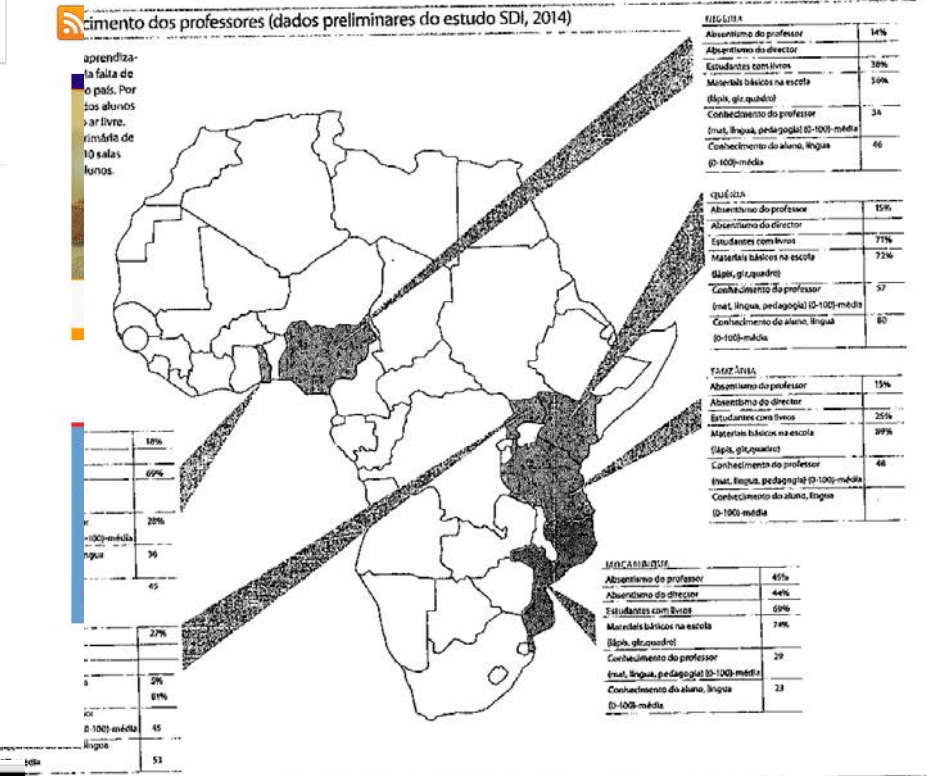
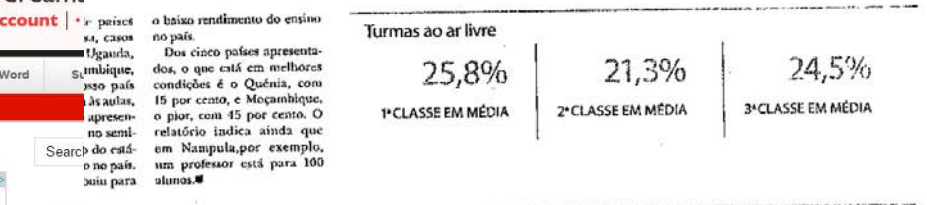
Absenteeism is very costly. Evidence suggests that teachers' absence affects students attendance (students' absences), which eventually profoundly affect students' grade point averages.

A report by UWEZO comments that widespread teacher absenteeism is generally acknowledged as a major obstacle for effective and sustainable improvements of the country's education system. A 2010 study by the Ministry of Education and Vocational Training (Tanzania) reports that absence rates for the surveyed primary and secondary schools were 10 percent and 13 percent respectively.

The 2011 UWEZO annual learning assessment study even found that one in five teachers were not present when their school was assessed. The African Economic Research Consortium's Service Delivery Indicators survey found that 23 percent of primary schools in Tanzania.

<http://www.ippmedia.com/frontend/?l=65875>

Professores moçambicanos são os que mais faltam às aulas



Rácio professor-aluno por classe
65,6 61,0 54,0 50,0 46,0 60,3 56,6
Livros dos alunos existentes na escola por classe
95 96 80 77 77 51 49

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8 January 2014 Last updated at 13:50 ET

Tackling Uganda's lack of school

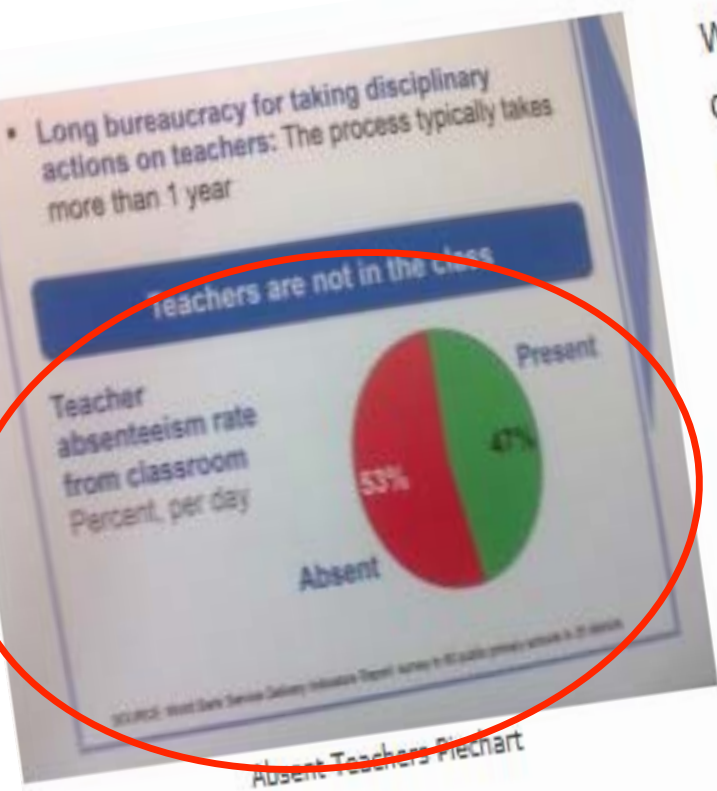
The World Bank also emphasises the importance of such basic services. Last month it published a report commending Uganda's progress in providing access to school, but warned it was being undermined by poor school management.

It reported that teacher absenteeism, whatever the cause, meant that many public school classrooms did not have a teacher teaching in them.

<http://www.bbc.com/news/business-25304848>

Tanzania

- 2011: SDI results were presented at a closed Cabinet meeting: Minister of Education starts doing unannounced visits to schools and confirms SDI's findings
- Feeds into environment with poor showing in UWEZO results, and disappointment with pass rates from primary school leavers exam
- April 2013: Presidential initiatives use SDI data as diagnostics during planning for major reforms: **Reform Compact** and **Big Results Now!**
- April 2013: SDI data cited in blogs (see screenshots below; <https://dfid.blog.gov.uk/2013/03/19/big-fast-accountable-results-now-mr-president/>)
- June 2014: SDI indicators feed into and use to track performance of Government of Tanzania and World Bank/ project valued \$122 million.



Will it work or fizzle away to pipe dreams? Well the sceptic in me was pleased to see the right issues being raised and some promising solutions proposed. Teacher motivation is very low and leads to average teacher attendance rates of only 50% as a recent survey showed, no wonder student exam results have plummeted. Both the President and the PEMANDU CEO welcomed low cost accountability measures (Tanzania has joined the Open Government Partnership and given headteachers with toolkits to let them truly lead and improve school performance using

Big, fast, accountable results now, Mr President
POSTED 19 MARCH 2013



Tanzanian President
Jakaya Kikwete lo
as we greeted him
classroom-like chorus
to the education lab,
President!"

Thank you

Sample sizes

Nationally representative; 1 sub-national level
Rural/urban; public/private

	Number of Observations				
	Schools	Teachers Absenteeism	Teachers Assessment	Classroom Observations	Pupil Assessment
Tanzania	180	1750	-	-	-
Senegal	151	1252	-	-	-
Uganda	400	3670	1466	400	3831
Togo	195	865	631	200	1518
Nigeria	760	5371	1904	760	6644
Kenya	306	2950	1228	306	2953
Total	1992	15858	5229	1666	14946

Notes: In the case of Tanzania and Senegal, since we use a different survey instrument for teacher assessment, classroom observation and pupil assessment

SDI Findings: Absenteeism and time on task in public schools

	Average SDI	Kenya 2012	Mozambique 2014	Nigeria* 2013	Senegal 2011	Tanzania 2014	Tanzania 2011	Togo 2013	Uganda 2013
School absence rate	20.1	15.2	44.8	16.9	18.0	15.3	23.0	22.6	29.9
Classroom absence rate	42.1	47.3	56.2	22.8	29.0	46.7	53.0	39.3	56.9
Scheduled teaching time	5h 31min	5h 31min	4h 17min	4h 44min	4h 36min	5h 54min	5h 12min	5h 28min	7h 13min
Time spent teaching per day	2h 53min	2h 30min	1h 41 min	3h 10min	3h 15min	2h 57min	2h 04min	3h 15min	2h 56min

* Nigeria is 4 States

Reasons for Absence

	Kenya	Mozambique	Nigeria	Togo	Uganda
Sick	15	31	22	11	18
Maternity	5	8	12	1	4
In training	5	4	14	1	2
Other approved absence	59	29	27	18	30
Pick up salary	2	12	5	1	2
On strike	2	0	6	34	1
Not approved	5	8	8	18	26
Other /DK	9	10	5	18	16

What teacher activities correlate with test scores?

Teaching from the front:		Students participating:		Assessment:	
Interacts with children as a group	0.095 (0.113)	Pupils write on board	0.551 (.295)*	Testing	0.598 (.187)***
Reads or lectures	-0.652 (.166)***	Kinesthetic group activity	0.297 (0.466)	Other:	
Writes on blackboard	0.236 (0.159)	Pupils answer/recite	0.706 (.197)***	Discipline	-0.961 (.375)**
Interacting with individual children:		Wait for pupil to answer	0.257 (.136)*	Paperwork	0.18 (0.273)
Interacts with small group	0.296 (0.328)	Number off task	-0.012 (.006)**	Lesson length	0.018 (.003)***
Interacts one on one	0.07 (0.188)				