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EdData II

Education Data for Decision Making

Data to Read, Reading Data:

Country experiences in using data to drive learning improvement, with a focus on Kenya

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About the Presentation

- This presentation was prepared for the Fast Track Initiative (FTI) Partnership Meeting, “Road to 2015,” Copenhagen, Denmark, April 20-21, 2009. The session was organized by the FTI Secretariat.
- The work described here is taking place under the U.S. Agency for International Development’s (USAID’s) EdData II project, Contract No. EHC-E-00-04-00004-00. EdData II is led by RTI International.
- Icons appearing on some slides in this presentation represent links to embedded files that are not available in the PDF version of this document. To obtain copies of the embedded files, please contact Luis Crouch, lcrouch@rti.org.

Outline

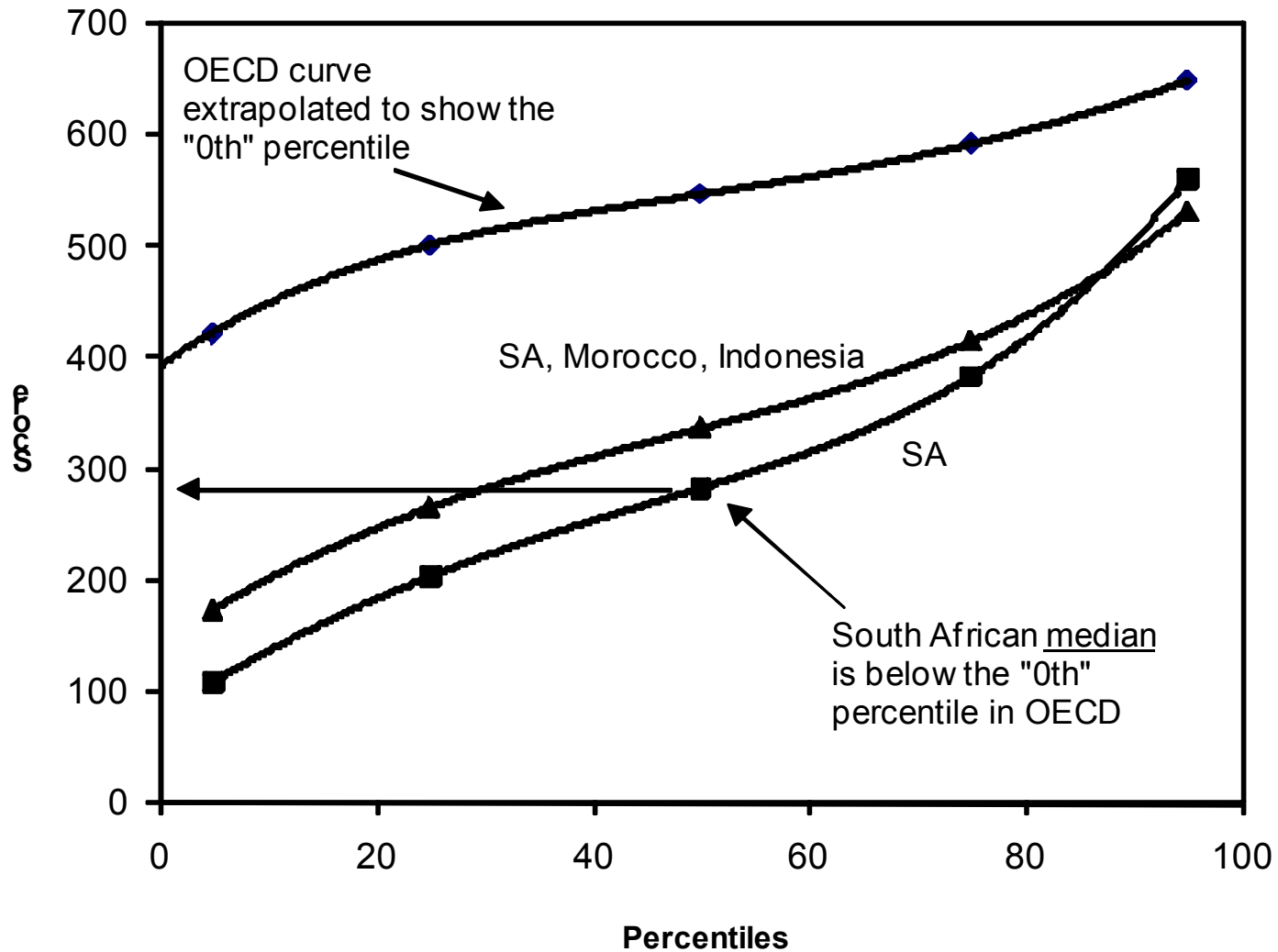
1. Motivation and quality agenda
2. An accumulation of cases
3. What do they seem to have in common?
4. Kenya case

Motivation and Quality Agenda

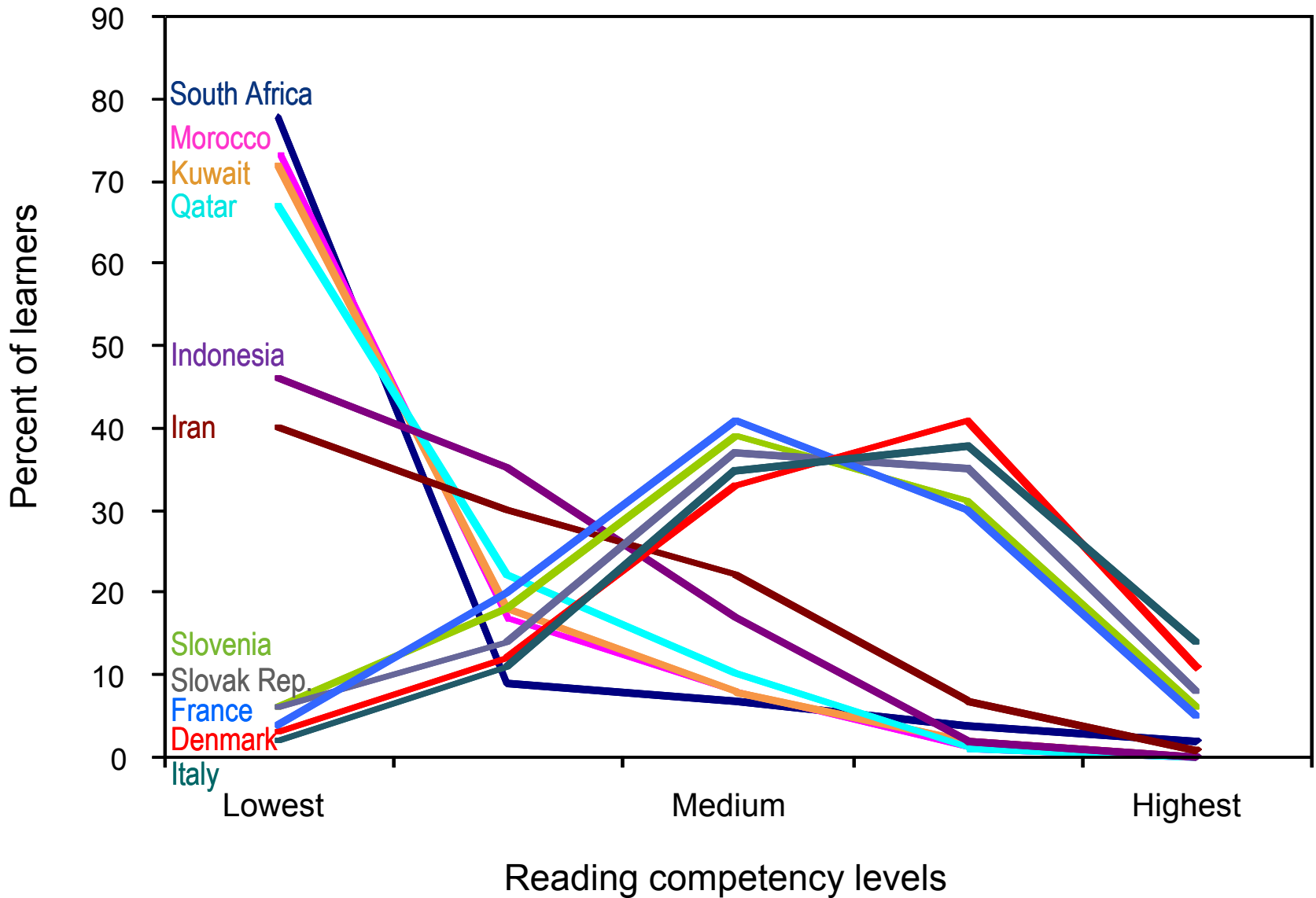
- What are the big international goals?
- How do low-income countries compare to high-income countries?
 - LI to HI ratio
 - Gross primary enrollment: 95%
 - Net primary enrollment: 80%
 - Gender parity net enrollment rate (NER): 94%
 - Completion: 58%
 - Learning achievement: Approx 30%?
 - Learning achievement: Median LI = 3rd percentile of HI or lower

LI = low income, HI = high income

Progress in International Reading Literacy Study (PIRLS) 2006 Results



PIRLS 206 Results, *continued*



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An Accumulation of Cases: What Does It Show?

- Two quick points:
 - Fear: improving quality “too difficult”
 - “No precedent”
- Focus on Kenya but stop to note:
 - An increasing accumulation of cases
 - There seem to be some key elements in common
- No reason to fear; it can be done!
- It does not “take 10 years to improve quality”
- And, no, we don’t have to “wait until the access agenda is done”
- Listing of cases, focusing on a few only:
 - Uruguay
 - Pratham
 - Escuela Nueva
 - Zambia, Breakthrough to Literacy (BTL)
 - Mali
 - Kenya

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What Do They Seem to Have in Common?

- Data-based policy awareness and teacher / community empowerment:
 - Use data to drive decision makers to make better educational decisions (e.g., focus on learning, essentials, first things first)
 - Use data to refine instructional packages
 - Teachers use data
 - Data usable at teacher level
 - Data meaningful to communities
 - Teachers receive in-service support based on data
 - Teachers/communities are required to improve teaching based on the observed results; simple and direct forms of accountability

What Do They Seem to Have in Common? *continued*

- Perhaps slightly less clear, but likely an instructional / pedagogical approach with following characteristics:
 - Simpler, assumes less sophistication
 - More direct
 - More predictable/programmed
 - Less complex instructional components
 - Actively involves children but in structured activity
 - Does not shy from drilling and repetition when warranted
 - “Acting into a new way of knowing, not knowing into a new way of acting”
- These probably are more useful in lower grades

What Does This Require?

- Need to be able to set goals
- But setting a goal requires some standard
 - e.g., improve to 50% correct on Systemic Assessment... (need to make sure difficulty is equalized)
- So, first set some standard
 - Systemic evaluation is an implicit standard
- Measure learner performance based on that standard
 - Identify weaker schools or children: universal
 - Identify weaknesses in the teaching process: sample
 - Identify additional factors: sample
- Tie in-service training directly to the goals desired, no generic training about broad issues

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Kenya Case: Early Grade Reading—Project Design

- EGRA Kenya – experimental reading improvement trial
 - Starts with assessment
 - Then: Assessment-based intervention
 - Re-measurement at end and various points
- Targeted 20 control and 20 treatment schools in Malindi District (in the coast of Kenya)
 - One of the poorest districts in the country
 - Total number of schools is 120

Implementation Steps

- EGRA assessment instruments were designed in collaboration with local stakeholders in April 2007
- Baseline drawn in July 2007
- Intervention designed in August 2007 with anticipated start in Sept 2007
- Intervention commenced in February 2008
- Post-intervention assessment conducted in November 2008

Assessment Tools

Before we review the results, let's take a brief look at the EGRA instruments and intervention design

Assessment Tools, *continued*

- EGRA, most of the time, consists of 7-8 subtests, depending on a country's desires
- In Kenya, we assessed reading in English and Kiswahili → EGRA developed for both languages
 - Letter knowledge
 - Familiar word recognition
 - Reading and comprehension
 - Phonemic awareness (not administered in Kiswahili)
 - Background questions – socioeconomic status, language spoken at home, etc.



Kiswahili instrument



English language
assessment

Some Results at Baseline

- Grade 2, midyear:

Kiswahili	Average
Letter fluency	4.7
Word fluency	11.7
Connected text fluency	10.2
Comprehension score	0.4 / 5.0
English	Average
Letter fluency	22.7
Word fluency	7.5
Connected text fluency	11.4
Comprehension score	0.4 / 5.0

Points of comparison with U.S.:

Letter naming in kindergarten at risk if 0-14, some risk if 15-26

Connected text fluency in grade 1, midyear; some risk if 8-19, so average in Malindi in grade 2 is at lower end of “some risk” category in grade 1 in U.S.

**Half of students could not read words in English or Kiswahili.
A third of students could not read letter names in Kiswahili.
20% of students could not read English letters.**

Intervention

- Grade 2 targeted, but teachers in grade 1 also trained
- Design of scope and sequence (what themes, in what relation to each other at any given time, and when)
- Check alignment with national curriculum: key
- Teacher training focused on: scope (what), sequence (when), and instructional model (how)
 - Phonological awareness, phonics, reading fluency, comprehension and vocabulary
 - Specific lesson plans
- School-based support: Monthly visits
- Informal assessment to see what progress has been made
- Government support: Time on task and accountability
- Capacity-building of district officers and project staff



alignment



sequence etc

Results: Kenya

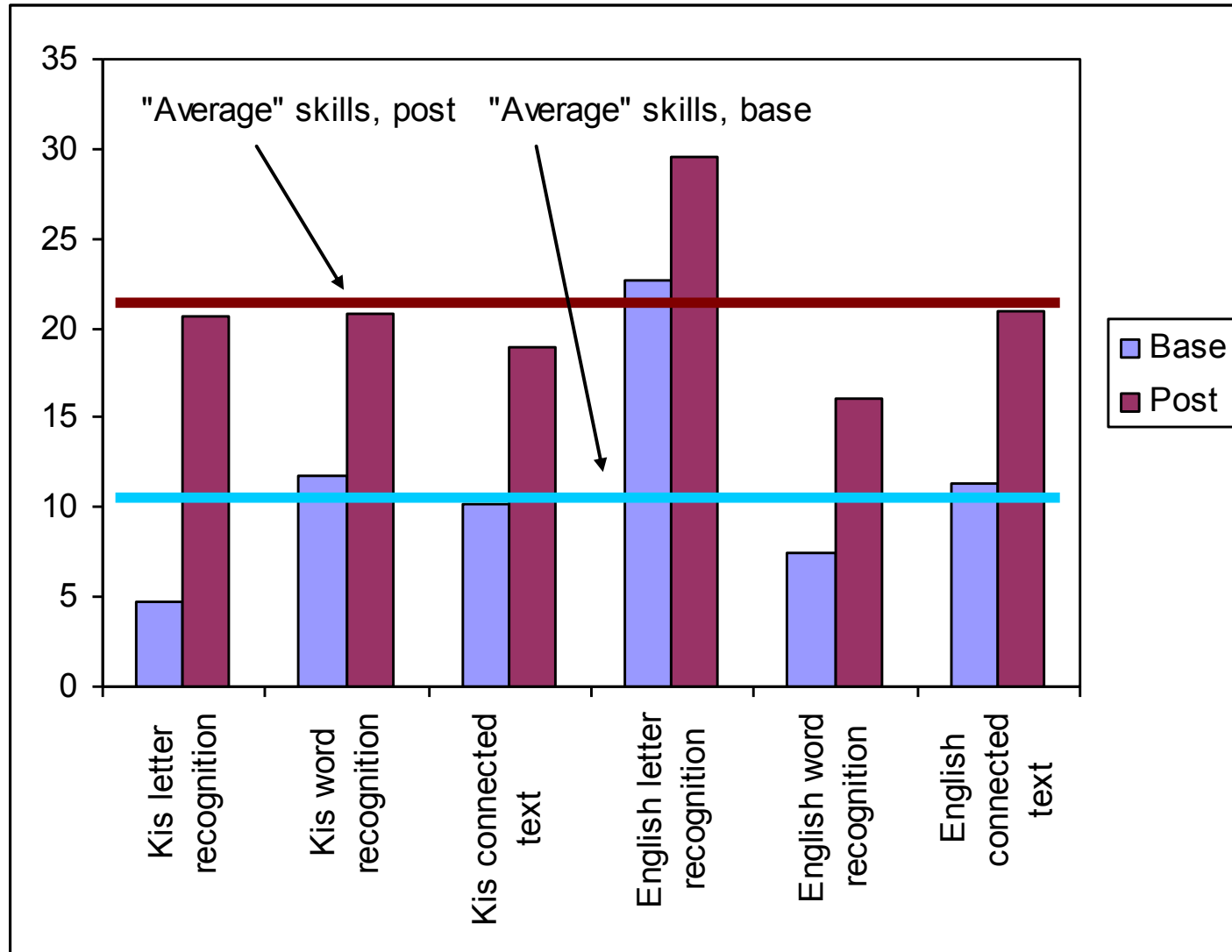
- Some 8 months later, rather large improvements were noted: around 80% increase over the baseline in most reading tasks
- RTI International and Aga Khan Foundation (AKF) launched a qualitative assessment to understand what happened

Results: Kenya, *continued*

Results after 1 year				
	Baseline	Post-treatment	Absolute change	Percent change
Kiswahili				
Letter recognition	4.7	20.6	15.9	338%
Word recognition	11.7	20.8	9.1	78%
Connected text	10.2	18.9	8.7	85%
Comprehension score	0.4	0.5	0.1	25%
English				
Letter recognition	22.7	29.5	6.8	30%
Word recognition	7.5	16.0	8.5	113%
Connected text	11.4	20.9	9.45	83%
Comprehension score	0.4	0.3	-0.1	-25%

“Avg” skill: base 11, post 21
Std Dev: base 38, post 20

Results: Kenya, *continued*



Reasonable effect sizes, statistically significant but... surprise... Control did almost as well as treatment... Why?

		Kiswahili				English			
		Baseline	Post-treatment	Effect size	p value of diff	Baseline	Post-treatment	Effect size	p value of diff
Letter fluency	T	4.8	20.9	.42	.0000	21.6	29.6	.21	.0016
	C	4.5	20.3	.51	.0000	23.8	29.4	.13	.0382
Fam. word fluency	T	10	19.6	.37	.0000	5.8	13.6	.34	.0000
	C	13.3	22	.27	.0001	9.1	18.4	.25	.0002
Connected text fluency	T	8.7	17.4	.35	.0000	9.3	18.3	.27	.0001
	C	11.8	20.4	.27	.0001	13.4	23.4	.21	.0018
Comp. questions	T	0.36	0.74			0.34	0.27		
	C	0.53	0.32			0.45	0.37		

Note: Part of Effect Is Removing Complete Nonreaders

Percent not reading at all				
	Control		Treatment	
	Baseline	Post-treatment	Baseline	Post-treatment
Kiswahili letter	31%	22%	38%	16%
Kiswahili words	31%	22%	38%	25%
Kiswahili connected text	43%	25%	54%	31%
English letters	23%	14%	16%	12%
English words	45%	3%	50%	5%
English connected text	47%	30%	54%	34%

Improvements in Control Schools?

- While treatment schools obviously were more effective in decreasing the number of nonperformers, control schools also improved significantly
- RTI and AKF launched qualitative research to unveil what really happened

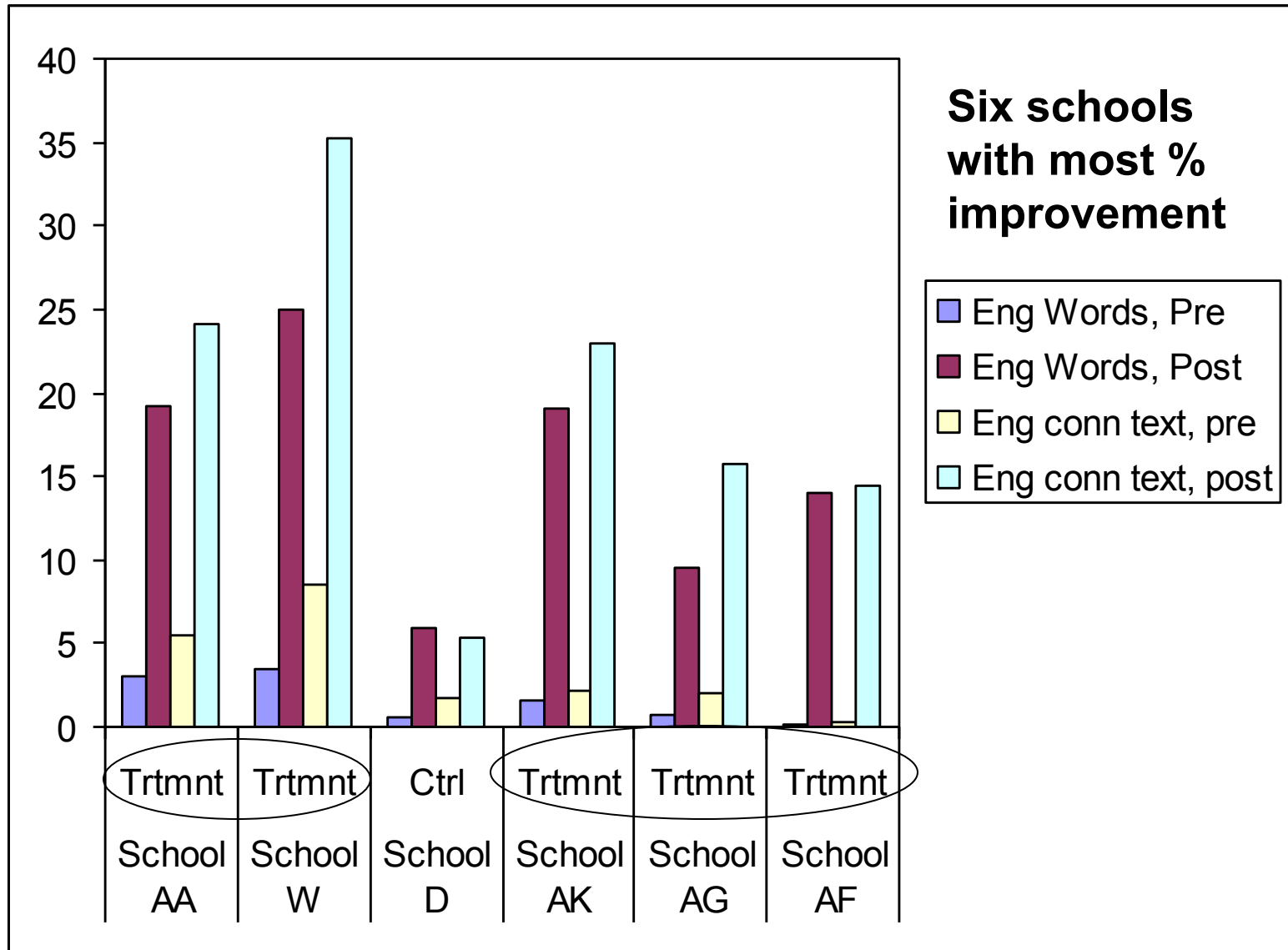
Qualitative Research

- Let's look at two things that we ruled out before we reveal what the research found
 - Possible third factor (e.g., textbooks distribution)
 - Not likely: some schools improved a lot more than others
 - Skills that were focused on improved much more (e.g., Kiswahili letter fluency)

Qualitative Research, *continued*

- Possible leakage?
- Pressure from the district officers?
- Accountability effect?
- Impact of informal assessments?
 - Take advantage of fact that some schools increased in truly huge amounts: More in treatment than control, but also control
 - Some schools improved 600%, 800%
 - We targeted both treatment (9) and control (4) schools that made huge improvements
 - Did “forensic” analysis

Qualitative Research, *continued*



Response to Pressure

- District staff and project staff did not directly exert any pressure
- But interviews revealed that teachers and head teachers remembered being told that their students were not doing so well and they took action
- Interviews also revealed that teachers and head teachers in control schools had been aware of the program all along, schools were close by (120 schools total in district, 20 in treatment, 20 in control)
- So, there was some unintended pressure on control schools that resulted in teachers and head teachers taking action to change their practices

Response to Pressure, *continued*

- In each control school visited, it was apparent that teachers realized that many their students could not read, because of the pretreatment evaluation
- So they took various actions to improve their performance: “look and say,” recitation, seeking of help from teachers in treatment schools and those in preschool and early childhood development programs with respect to phonics, and other methods of teaching reading
- CONCLUSION: Teachers “self-treated” in the control schools

Some Cases: 1

- **Simple information effect:** *“After the assessment there was someone who told me the children can read better if they connect words in a sentence. So I started making them recite words, using flash cards and encouraging them to speak in English. I also assigned more time to oral work.”* – Grade 2 teacher at School 2 (control)

Some Cases: 2

- **Some transfer effect:** Two treatment teachers were transferred to control schools. These two teachers in School 4 (control) and School 8 (control) said that they used the EGRA methodology in their new schools as the *“reading levels were very low.”* This could explain the improved performance in these two control schools:
 - School 4 with 254% improvement
 - School 8 with 875% improvement

Some Cases: 3

- **Principal in control school; his/her child in treatment school:** In School 5 (control), the head teacher was instrumental in finding out how to improve reading. This was after he found out that his son, who was in grade 1 in a treatment school (School 9 – treatment), could read after only a few months in school. He said that he inquired from the Education Office on why his school was not implementing the EGRA methodology and was told that this was an experiment and his school was a control. He was not happy with that and he decided to learn the methods. He sent his lower primary school teachers to find out what “secret methods” the teachers were using.

Some Cases: 4

- **Teacher to teacher:** One of the teachers was also proactive when she saw a teacher who is her neighbor and works at School 10 (a treatment school) making lots of teaching aids. She said: *“I asked her why she was always making flashcards, word charts and puzzles. She told me that they helped her teach reading. I decided I had to do the same for my class.”*
–Grade 2 teacher, School 5 (control)

Not Unique to Kenya

- Early reading – other experiments going on
- Liberia – too early for results – design tests for “pure” accountability effect
- Mali – very focused instruction, control-treatment, can't remember how randomized:

	Letter-naming fluency					
Class type	[0 – 5]	[6 – 10]	[11 – 15]	[16 – 20]	[21 et plus]	N learners
Treatment	0%	6%	14%	31%	49%	104
Control	68%	19%	9%	2%	2%	121

Other Mali Results

Type of class	Familiar word reading fluency	
	<5	>=5
Treatment	58%	42%
Control	98%	2%

“Forensic” Conclusions

- Treatment practical, and obviously no placebo, so easy to leak
- Separate out? But then schools are not “the same but for the treatment”
- Spread them all out so there is natural separation? But then what intervention is one modeling?
- Kenyan teachers may be more professional than in other countries; accustomed to react to measurement
- In any case, teacher responsiveness great on the whole (some, even in treatment, however, could not be bothered)
 - Interesting in view of common complaint about teacher non-accountability (absenteeism, etc.), which is probably also true
 - Practices that have noticeable impact get copied?

Overall Conclusions

- Improving quality is not as daunting as often posed
- It is simply not true that “improving education quality” or at least getting going, “takes 10 years,” *if*
 - Start with manageable steps, don’t let perfect be enemy of good, not ignoble to go for first wins
 - Focus on learning outcomes, direct everything at that
 - Start with first things first, which may be either the more foundational or the easiest to improve, or both

Overall Conclusions, *continued*

- Orient training upgrades at outcomes, not just general “professional development”
 - Tightly program instruction, lesson plans; make them evidence based
 - Measure, measure, measure: Tie to international and regional assessment, but also measure along the way, and in the classroom
- Ensure materials that tie to measurement

Overall Conclusions, *continued*

- Create a tight measurement-teacher support-materials feedback loop
- Involve the community (e.g., parents vouching for their children's reading, community read-ins, and accountability, such as community monitoring that children are learning)
- Teachers can do it!