Can your child read and count? Evidence on learning outcomes across East Africa

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Agenda

1. Motivation
2. Gaps
3. Questions
4. Data
5. Results
6. Summary
Colonial period, public education was NOT a priority.

“Bantu education ... rested on a racist anthropology designed to generate cheap labor for what remained a colonially organized economy”

(Asmal and James, 2001)

Public education often actively discouraged to avoid unrest.

**Example of Zambia**: on Independence just 109 graduates and 0.5% of work force had completed primary education.

Mass expansion of education a tangible benefit of independence.
Last two decades

Education systems in East Africa rapidly changing:

- Stabilization of funding to the sector
- Commitment to UPE
- Fees abolished (again):
  - Uganda 1997
  - Tanzania 2002
  - Kenya 2003
- Rapid growth in student numbers
Trends in volume

Kenya

Tanzania

Uganda

Student number

Teacher number

year


Pupils (mn) — Teachers (mn)
Progress at aggregate level
Mean years of schooling, population 15+
Schooling (access) does not imply education (learning).

Concerns that expansion of access has led to (caused?) a decline in quality.

“Until school systems can guarantee that students will learn while sitting in class, it may even be counterproductive to encourage longer periods of universal education. ... expanded enrollments can actually harm overall learning outcomes if quality cannot be broadly maintained.”

(Pritchett et al., 2013)
A modern Kenyan classroom
Filled to capacity
## Outline

1. Motivation
2. Gaps
3. Questions
4. Data
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The challenge

Evidence on learning outcomes (let alone trends) across low income Africa remains limited.

Low coverage of existing survey instruments (TIMSS, PIRLS, SACMEQ, PASEC):

- Few countries & relatively infrequent
- Focus on children that have ‘made it’ to (upper levels of) primary school
- Relatively small sample sizes

Less than 50% of all SSA countries conducted a national learning assessment between 1995-2008.
The challenge

Academic economic (donor?) research focus has shifted to experimental evaluations.

Useful additions to knowledge.

... BUT scale and distribution of the "policy problem" ≠ clear.

Also, RCTs concentrated in a few popular locations (e.g., Busia district, Kenya).
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Evaluating learning in East Africa

Two questions of interest:

1. Is there a learning crisis in East Africa (Kenya, Tanzania & Uganda)?

2. If yes, where are the critical weaknesses in the system?

= system performance diagnostic.
What is needed for schooling → learning?

Children must:

1. enroll in school; and
2. progress to higher grades; and
3. acquire new cognitive skills at each grade.

Each element of this ‘schooling chain’ may be a source of failure.
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The data

Large-scale household surveys undertaken in KE, TZ and UG since 2010. Representative at the district-level.

Collected independently by the Uwezo initiative, following the ASER model from India.

**Have children acquired competencies expected after two years of schooling?**

Four-part survey:
- Local village conditions
- Characteristics of a single public primary school (per EA)
- Household-level information (size, parents etc.)
- Literacy and numeracy test scores (each child aged 6-16)

This dataset = 600,000 kids.
Tests

Reading and numeracy tests:

- Not a general IQ test.
- Captures specific aspects of (crystallized) cognitive ability.
- Basic competencies expected after two years of schooling.
- Referenced to content of local curriculum.
- Similar across countries, NOT same (common template).
- English in Kenya/Uganda; Swahili in Tanzania.
- Some test scores imputed (<10%).
‘Zuberi is our class teacher. He loves our parents. We love our teacher too. He gives his pupils books. The pupils write in the books. Our books are red. We use pencils to write.’

Questions:
– What do the pupils write in?
  ✗The sand ✓Books
– Who gives his pupils books?
  ✗JPAL ✓Zuberi
**Data overview**

<table>
<thead>
<tr>
<th></th>
<th>Kenya (KE)</th>
<th></th>
<th>Tanzania (TZ)</th>
<th></th>
<th>Uganda (UG)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) No. of districts</td>
<td>123</td>
<td>156</td>
<td>132</td>
<td>126</td>
<td>79</td>
<td>80</td>
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<tr>
<td>No. of PSUs</td>
<td>3,611</td>
<td>4,551</td>
<td>3,821</td>
<td>3,752</td>
<td>2,306</td>
<td>2,387</td>
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<tr>
<td>No. of households</td>
<td>50,308</td>
<td>60,820</td>
<td>52,540</td>
<td>51,017</td>
<td>32,489</td>
<td>32,969</td>
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<tr>
<td>No. of children</td>
<td>114,339</td>
<td>131,625</td>
<td>95,527</td>
<td>92,033</td>
<td>84,125</td>
<td>83,227</td>
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<tr>
<td>(ii) Female headed house.</td>
<td>26.7</td>
<td>34.7</td>
<td>26.7</td>
<td>27.3</td>
<td>24.6</td>
<td>24.4</td>
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<tr>
<td>Household is poor</td>
<td>44.8</td>
<td>42.7</td>
<td>45.8</td>
<td>45.2</td>
<td>43.7</td>
<td>43.4</td>
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<tr>
<td>Household is ultra-poor</td>
<td>13.0</td>
<td>10.1</td>
<td>12.9</td>
<td>11.1</td>
<td>11.5</td>
<td>10.8</td>
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<tr>
<td>School aged children</td>
<td>2.3</td>
<td>2.2</td>
<td>1.8</td>
<td>1.8</td>
<td>2.6</td>
<td>2.5</td>
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<tr>
<td>Household size</td>
<td>6.2</td>
<td>6.0</td>
<td>6.4</td>
<td>6.3</td>
<td>6.5</td>
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<tr>
<td>(iii) Age</td>
<td>10.6</td>
<td>10.6</td>
<td>11.2</td>
<td>11.2</td>
<td>10.6</td>
<td>10.6</td>
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<tr>
<td>Female (%)</td>
<td>49.0</td>
<td>49.5</td>
<td>50.3</td>
<td>49.7</td>
<td>49.1</td>
<td>49.2</td>
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<tr>
<td>Birth order (relative)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
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<tr>
<td>No. older sibs</td>
<td>0.9</td>
<td>0.8</td>
<td>0.6</td>
<td>0.6</td>
<td>1.1</td>
<td>1.0</td>
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<tr>
<td>Sib age gap</td>
<td>2.6</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
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<tr>
<td>(iv) Test score (%)</td>
<td>26.0</td>
<td>25.6</td>
<td>1.6</td>
<td>9.8</td>
<td>-33.3</td>
<td>-39.1</td>
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<tr>
<td>Passes all tests (%)</td>
<td>44.4</td>
<td>44.3</td>
<td>33.1</td>
<td>34.6</td>
<td>21.4</td>
<td>19.7</td>
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<tr>
<td>Imputed tests (%)</td>
<td>9.3</td>
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<td>3.6</td>
<td>2.5</td>
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<td>12.0</td>
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<tr>
<td>Enrolled</td>
<td>90.7</td>
<td>90.9</td>
<td>88.4</td>
<td>88.4</td>
<td>92.2</td>
<td>92.9</td>
</tr>
</tbody>
</table>
Outline

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(A1) Is there a learning crisis in East Africa?
Basic competencies by age
(A2.1) Enrolment in East Africa by age

(a) Enrolment rates

(b) Girls per 100 boys
‘Problem’ districts with persistently low enrolment
District-level enrolment rates, children aged 13
How to measure progression?

Two simple measures:

(i) **Years of schooling** \((S)\) minus the current grade \((G)\)

- Grade cost ratio: \(= \frac{(S - G)}{G}\), gives average number years of schooling to progress a grade. Higher values indicate less efficient schooling systems.

- Years of schooling is not available at individual level; but cumulative rates of enrolment at (say) district-level is a good approximation.

(ii) **Overage-for-grade**

- Yes, No
(A2.2) Grade attainment
District-level efficiency measures, children aged 13

(a) Grade cost ratio

(b) Overage−for−grade vs. grade cost ratio
(A2.3) Learning outcomes by grade

% pupils can read a word
(A2.3) Learning outcomes by grade

% pupils passing both numeracy and literacy tests

Passes all tests

<table>
<thead>
<tr>
<th></th>
<th>KE</th>
<th>TZ</th>
<th>UG</th>
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</tbody>
</table>

27 / 31
Is this driven by specific sub-groups? (Grade 5)

(a) Recognises words

(b) Passes reading test

(c) Passes maths test

(d) Passes all tests
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What have we learnt?

There IS a learning crisis in East Africa.

(1) Are children going to school?

😊 Mostly. But there are some persistent problems, largely associated with isolated, rural poor communities. Also, many children start school late.

(2) Are children progressing through school?

😊😊 Slowly. School systems are inefficient. Uganda has a serious problem.

(3) Are children learning in class?

😊 Not so much. Schooling quality is a serious problem throughout the region. Even so, there are notable differences between countries.
Thank you.