

Are our Children Learning?

Literacy and Numeracy across East Africa

August 2012





Copyright: Uwezo & Hivos/Twaweza, 2012.

Any part of this publication may be produced for non-profit purposes provided full attribution is provided and two copies of the reproduction are sent to the address below.

Uwezo East Africa at Twaweza
Lenana Rd, ACS Plaza 3rd Floor,
P.O Box 19875 00200 Nairobi, Kenya

T: +254 20 3861372/3/4
E: info@uwezo.net



CONTENTS

Acknowledgements	2
Executive Summary	3
Introduction	4
Uwezo Surveys	6
Key Findings	10
Conclusions	21
APPENDICES	
APPENDIX A	24
APPENDIX B	25
APPENDIX C	26
APPENDIX D	27
APPENDIX E	28
APPENDIX F	29

Acknowledgements

Uwezo is part of Twaweza, an independent East African initiative that promotes access to information, citizen agency and improved service delivery outcomes across the region. The data for this report was collected in collaboration with the Women's Education Researchers of Kenya (WERK) led by John Mugo, the Tanzania Education Network (TEN/MET) led by Suleman Sumra and the Uganda National NGO Forum (UNNGOF) led by Richard Ssewakiryanga.

This report has been compiled and prepared by Sam Jones, who also exercised great care in ensuring the integrity of the underlying data. Youdi Schipper of Uwazi at Twaweza provided technical and analytical support. John Mugo, Benjamin Piper and Njora Hungi provided detailed comments that considerably strengthened this report. Editing support was provided by Hannah-May Wilson. Overall guidance and quality assurance were provided by Sara Ruto and Rakesh Rajani.

The work of Uwezo and Twaweza is supported by thoughtful and progressive donors, including the Hewlett Foundation, DFID, Sida, SNV, Hivos and the World Bank. The findings and recommendations herein do not necessarily represent the views of any of these partners.

All the data used in the report are drawn from the Uwezo 2011 and earlier national assessments and can be downloaded from www.uwezo.net.

Executive Summary

This report compiles, compares and presents the headline findings of the 2011 Uwezo national assessments in Kenya, Uganda, and Tanzania (mainland). These assessments constitute by far the largest such exercise of its kind in Africa. About 350,000 children in over 150,000 households across the three countries were tested in their ability to perform basic numeracy and literacy tasks at the Standard 2 level. Standard 2 represents the ground level competencies expected after completing two years of primary education.

The principal finding is that despite significant gains in expanding access to primary schooling, actual literacy and numeracy outcomes remain significantly deficient across the region. Although children are now enrolled in school in unprecedented numbers, they are not learning core skills expected at their age and grade level. Specifically, the Uwezo assessments find that:

- (a) more than two out of every three pupils enrolled at Standard 3 level in East Africa fail to pass basic tests in English, Kiswahili or numeracy set at the Standard 2 level;
- (b) improvements in basic literacy and numeracy occur only slowly as children progress through the education system, implying that the quality of learning remains low *throughout* primary school;
- (c) there are large differences in average test scores *between* countries in East Africa. While overall levels are low, Kenyan pupils perform best in literacy and numeracy. Ugandan children perform worst in the lower levels but slowly overtake Tanzanian children and outperform them from Standard 6 onwards;
- (d) there are significant differences in average test scores among districts *within* East African countries, with large disparities in all three countries;
- (e) there are minimal differences in test scores between boys and girls: gender disparities do not appear to be significant in the early years of education;
- (f) the poor do worse everywhere; children from socio-economically disadvantaged households perform worse on all tests at all ages; and
- (g) students in non-government (private) schools perform better than pupils in government (public) schools in all three countries, a difference which is particularly marked in Tanzania.

These findings paint a grim picture of the state of education in East Africa, and have been criticized by some for giving a bad name to educational progress. The Uwezo methodology, sampling frame, tools and processes have been developed in consultation with national and international experts, and are subject to rigorous scrutiny. Comprehensive information on the methodology and the full datasets are also publicly available. The fact that the findings of the 2011 survey are largely consistent with the results from 2009/10 survey further indicates that the Uwezo methodology and management are robust, rigorous and reliable. Uwezo welcomes further scrutiny and evidence-based challenges, for they can only strengthen the survey.

Finally, while the findings are worrying, there are reasons to be hopeful. First, across East Africa, some schools and districts perform relatively better despite facing similar constraints as others. These schools and communities constitute a potential source of solutions on how to improve children's learning. Second, there is a marked shift in the public debate towards focusing on quality and learning outcomes, and asking a sharper set of questions that can guide better policy choices and achieve greater value from existing investments. Third, globally there is increased experimentation on innovations to spur learning that can benefit East Africa, should we choose to pay attention.

The opportunity to help every child learn is there. This report seeks to help inform that opportunity.

Introduction



1. Introduction

At the turn of the century, ministers of education from 100 countries made a clear commitment to provide quality primary education to all children, free of charge at the World Education Forum held in Dakar, Senegal.¹

Specifically, the delegates agreed to:

“Ensure that by 2015 all children, particularly girls, children in difficult circumstances, and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality.” (Goal 2)

They also committed to:

“Improve all aspects of the quality of education and ensure excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy, and essential life skills.” (Goal 6)

These commitments resonated across East Africa, bringing a renewed emphasis on primary education. Subsequently substantial progress has been made in increasing primary school enrolment across the region. Evidence from a variety of household surveys, including those described here, indicate that today upwards of 90% of all eligible children are enrolled in primary school in Kenya, Tanzania and Uganda (see Appendix A). However, despite these significant achievements, there is a growing concern that children are in school but are not learning. While access to education has expanded, the quality of education has stagnated and may in fact have deteriorated further.

In contrast to statistics on school enrolment, publicly available data on learning outcomes such as basic literacy and numeracy competencies is rarely available. A core motivation behind the Uwezo initiative is to fill this gap, and to help *shift the public and policy focus from educational inputs to learning outcomes*.

Since 2009, Uwezo has implemented large-scale nationally representative household surveys to assess the *actual* basic literacy and numeracy competencies of school age children across Kenya, Tanzania and Uganda. In terms of their geographical coverage, these surveys represent the most extensive independent assessment of education outcomes in all three countries available to date.²

The objective of this report is to compare and present the headline findings of the second round of the Uwezo learning assessment surveys which were implemented in 2011 in Kenya, Tanzania (mainland) and Uganda. This report is structured as follows: Section 2 briefly presents the Uwezo surveys; Section 3 presents the main findings; and Section 4 a brief conclusion. Further information also is provided in a set of appendices (see box below).

Appendix A provides more East Africa specific data

Appendices B, C and D give country-specific results on average test scores, differentiated by Standard (grade) of attendance, population sub-groups and districts.

Appendix E gives examples of the literacy and numeracy tests applied in the surveys.

Appendix F provides full East Africa district ranking

Finally, the results presented in this report differ slightly compared to the country-specific reports from both rounds of the Uwezo surveys. This is because the data has been thoroughly cleaned, new sample weights have been calculated in order to more closely reflect population-level characteristics, and corrections have been applied for missing observations to enhance comparability over time. While the estimates are slightly different, there are no major differences that require changes of our previous reports.

¹ The relevant ministers for education from both Uganda and Tanzania were participants at this meeting. For a list of country representatives in Dakar see: www.unesco.org/education/efa/wef_2000/listpartwef.pdf.

² “Independent” means that the surveys were *not* undertaken and/or analysed by government (public) agencies.

UWEZO SURVEYS



2. UWEZO SURVEYS

The Uwezo learning assessment surveys began in Kenya in 2009, followed by Tanzania and Uganda in 2010. These constituted the first round of the Uwezo surveys (hereafter, referred to as “Uwezo 1”). The surveys were conducted again in all three countries in 2011 and represent the second round of the exercise (hereafter, referred to as “Uwezo 2”).

2.1 Coverage of the surveys

Both Uwezo 1 and Uwezo 2 employed survey methods that produced a nationally representative random sample of the target population (children of primary school age up to and including children aged 16.) This means that the statistics calculated from the surveys can be used to monitor performance and outcomes at the national level, and also can be used to make comparisons over time. The samples also are representative at the district level, which means that comparisons can be made between districts both within and between countries.

The main difference between Uwezo 2 and Uwezo 1 is that the former covered a much larger number of districts in each country, and many more households and children overall. A key benefit of greater coverage means adding precision to the results, enabling us to examine differences in outcomes between many more individual districts. Table 1 provides an overview of the coverage of the two survey rounds in each country. The increase in coverage between Uwezo 1 and Uwezo 2 is substantial; the number of districts sampled has risen from around 38% to 90% of districts in the region (now including virtually all districts in Tanzania and Uganda) and the number of children sampled has more than doubled (taking the three countries together). In both Tanzania and Uganda, which had smaller samples in the first round compared to the Kenya sample, the number of children surveyed has roughly trebled. This makes Uwezo surveys one of the largest sample-based studies ever undertaken in the region.

Table 1: Coverage of the Uwezo 1 and Uwezo 2 surveys

Country	Round	Districts	%	Schools	Villages	Households	Children
Kenya	1 (Sept/Oct 2009)	70	44	2,029	2,029	33,760	79,693
	2 (Feb/Mar 2010)	122	77	3,474	3,628	55,843	131,971
Tanzania	1 (May 2010)	38	32	1,010	1,077	18,952	37,683
	2 (Mar/Apr 2011)	119	100	3,709	3,825	59,992	114,761
Uganda	1 (April 2011)	27	34	748	792	12,412	32,882
	2 (Apr/May 2011)	79	99	2,115	2,360	35,481	101,652
Total	Uwezo 1	135	38	3,787	3,898	65,124	150,258
	Uwezo 2	320	90	9,298	9,813	151,316	348,384

Notes: all cells (excluding Country, Round, ‘%’) refer to the number of units sampled and retained in the dataset after cleaning; the ‘%’ column refers to the proportion of districts in the sample frame out of all districts in the country; the number of schools sampled is often slightly smaller than the number of enumeration areas (villages) as not all enumeration areas contained a school.

Source: calculated from the Uwezo 1 and Uwezo 2 data.

The Uwezo approach is adapted from the Annual Status of Education Report (ASER – see www.asercentre.org). Like Uwezo, ASER is an annual household based nationwide survey of the basic literacy and numeracy abilities of children aged between 6-16 years. In results released in January 2012, ASER documented having done in the assessment in 558 districts and reached 14,283 schools, 327,372 households and tested 633,465 children across India.

2.2 The Uwezo Research Design

A few technical words are in order about the design of the Uwezo surveys, as well as how the results should be interpreted (further details on these issues can be found in the technical report). First, all the surveys have followed a three stage random sampling process, entailing: (1) selection of districts (strata) by simple random selection, with each district given an equal probability of selection; (2) selection of enumeration areas (typically villages) with probability proportional to population size; and (3) selection of households in each enumeration area by systematic sampling. This design ensures that the surveys are representative at the national and district level for all children aged between 6 and 16 (or 7 and 16 in the case of Tanzania) and who are resident in households at the time of the survey (rather than living in institutions). Sample weights have been calculated to reflect the sample design and include a number of *ex post* corrections to ensure appropriate weights of the different age cohorts covered in the survey.

Second, with respect to calculation of the statistics presented here, sample weights are employed throughout. Where the data are pooled across countries the results are weighted by the respective population sizes of the countries. Put differently, the pooled results can be read as estimates for an average child in East Africa (i.e., selected at random from Kenya, Tanzania or Uganda). Due to the large sample sizes involved in all the survey rounds, virtually all the differences in estimates for a given statistic across sub-groups are statistically significant at conventional levels.

Finally, a note on how to read the results from the literacy and numeracy tests applied in the Uwezo surveys. Strictly speaking, the tests scores provide an estimate but would fall short of being total proof of the ‘true ability’ of the

children or their learning curve. As stated in Uwezo 2010:³ “to assess learning, a measure of change, one would need to control for children’s knowledge at the start of their school careers in Kenya, Uganda and Tanzania”. In the presentation of our results we focus uniquely on the pass rates for the literacy and numeracy tests.

We do so because measuring these pass rates are of most direct policy relevance – children enrolled at Standard 3 level or higher *should* be able to pass tests set at the Standard 2 level. The share of children failing to meet this standard constitutes a learning gap. Quantifying the size of this gap is a fundamental motivation for the Uwezo surveys, and we retain a clear focus on this aspect in the present report.

2.3 The literacy and numeracy tests

The content of the Uwezo surveys is described in the country-specific reports and on the Uwezo website.⁴ For every household surveyed, a short set of questions was administered to the head of household in order to collect basic information about the household (for example, the number of occupants and asset ownership per household). Additionally, a short literacy and numeracy test was administered to each child in the household aged between 6 and 16 years.

The enumerators also recorded further details about each child including whether s/he attends school and at what grade. A literacy test gauging reading and comprehension competencies in English language was administered. In all three countries, English language is taught as a subject from Standard 1 and is indeed the language of primary leaving examinations in Kenya and Uganda.⁵ Additionally, in Tanzania and Kenya (but not in Uganda) a further literacy test was administered in Kiswahili. In these literacy tests, children were asked to recognize a letter from the alphabet, read a word, read a paragraph, and read and comprehend a short story.

3 Uwezo 2011. *Are Our Children Learning? Literacy and Numeracy across East Africa*. www.uwezo.net

4 Available from www.uwezo.net.

5 All three countries have language policies favouring indigenous languages. In Kenya and Uganda the language of the catchment area (or Kiswahili in multi ethnic environments in Kenya) ought to be the language of instruction in lower primary with English taking over in upper primary. This policy tends to be followed more widely in Uganda than in Kenya. In Tanzania, Kiswahili is the medium of instruction through the primary school cycle, though English is taught as a subject from Standard 1.

Table 2: Sample Tests Uwezo East Africa 2011

ENGLISH TEST - KENYA

Letters a u m q g c	Words day shop pet girl eye road	Paragraph Sara has one brother. His name is Tom. Tom is six years old. He is in class one.
------------------------------	---	--

STORY

Peter and Mary live in Kitui. Kitui is a hot and sunny place. They always wear light clothes. They like playing in the sun. They are happy when it rains. Last year it rained a lot. They helped their father plant some trees. Mother planted maize and beans. There was a lot of food. Mother took some maize to the market. She sold it and got a lot of money. Mother used the money to buy shoes for us. We were all very happy.

Q1. Where does Peter live?
Q2. What did mother sell?

KUSOMA TANZANIA

Silabi wa du nywe mo kwa bi	Maneno bata paa kwetu chura kuku ndoo	Aya Mimi ni mwanafunzi. Ninasoma darasa la pili. Mwalimu wetu anafundisha vizuri. Ninajua kusoma na kuandika.
--------------------------------------	--	---

Hadithi

Halima ni mwanafunzi wa darasa la pili. Siku moja alipotoka shule alimkuta Daudi amekaa chini ameinamisha kichwa. Halima alimsogelea Daudi na kumuuliza mbona amekaa, an tatizo gani? Daudi alijibu kuwa kichwa kinauma. Halima aliamua kumsaidia Daudi kubeba mfuko wake wa vitabu na kumsindikiza hadi nyumbani. Walipofika nyumbani walimkuta mama Daudi. Mama Daudi aliwapokea na kuwakaribisha. Mama Daudi alimshukuru Halima kwa wema alitenda kumsindikiza Daudi.


Maswali.
1. Kwa nini Daudi alikaa chini?
2. Hadithi hii inatufundisha nini?

In the numeracy tests, children were asked to recognize numbers and count, as well as to perform basic calculations. Below are sample tests while Appendix E provides full sets per country of the literacy (English and Kiswahili) and numeracy tests used in the 2011 Uwezo survey round.

All the tests were set according to the Standard 2 level curriculum for each country, which is the expected level of attainment after two years of completed primary education. Therefore, assuming that education quality standards are maintained, one would expect all pupils attending Standard 3 or above to correctly answer the entire test questions. This is termed a ‘pass’ in the presentation of the results below. The tests reflect the national curriculum of each country. Due to different emphases in national curricula, the tests contained in the surveys are not exactly the same.

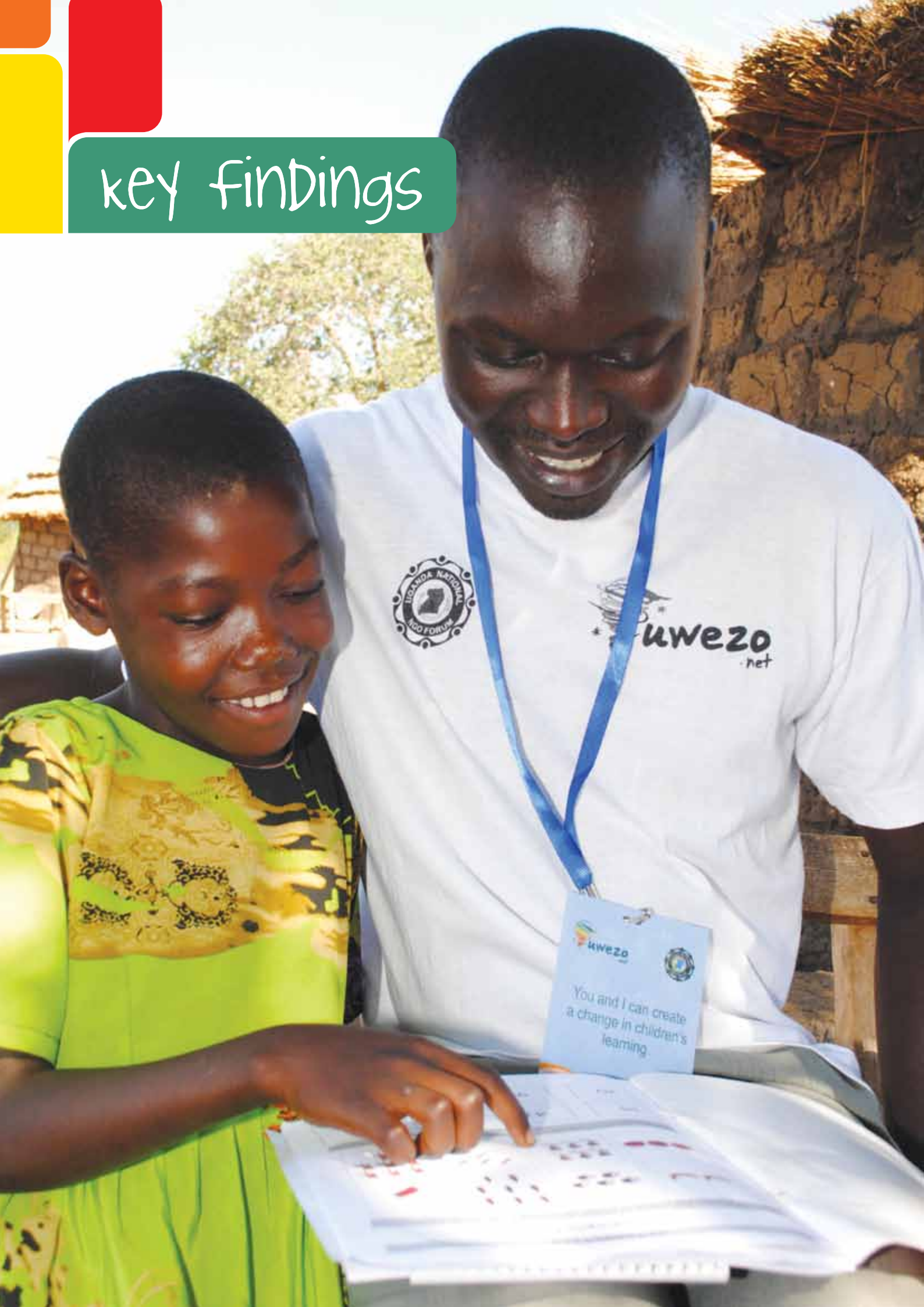
Therefore they are not strictly comparable – i.e., a “pass” in Kenya does not necessarily equal a “pass” in Tanzania. Hence this presentation ought to be viewed as a comparison of the mastery of children of Standard 2 level of their national curriculum. This notwithstanding an analysis of the tests shows that they are more similar than different. The levels in the literacy test are constant, while a few differences are present in the numeracy test across the three countries.

NUMERACY - UGANDA

NUMBER RECOGNITION 10-99 15 47 25 23 30 94	ADDITION $\begin{array}{r} 35 \\ +51 \\ \hline \end{array}$ $\begin{array}{r} 425 \\ +132 \\ \hline \end{array}$ $\begin{array}{r} 121 \\ +642 \\ \hline \end{array}$ $\begin{array}{r} 216 \\ +42 \\ \hline \end{array}$																
COUNTING 	SUBTRACTION $\begin{array}{r} 78 \\ -34 \\ \hline \end{array}$ $\begin{array}{r} 634 \\ -323 \\ \hline \end{array}$ $\begin{array}{r} 635 \\ -112 \\ \hline \end{array}$ $\begin{array}{r} 154 \\ -34 \\ \hline \end{array}$																
PLACE VALUE <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th style="width: 25%;">Number</th> <th style="width: 12.5%;">H</th> <th style="width: 12.5%;">T</th> <th style="width: 12.5%;">O</th> </tr> <tr> <td>263</td> <td></td> <td></td> <td></td> </tr> <tr> <td>453</td> <td></td> <td></td> <td></td> </tr> <tr> <td>578</td> <td></td> <td></td> <td></td> </tr> </table>	Number	H	T	O	263				453				578				MULTIPLICATION $2 \times 1 = _$ $4 \times 6 = _$ $13 \times 2 = _$ $3 \times 8 = _$ $6 \times 2 = _$ $9 \times 2 = _$
Number	H	T	O														
263																	
453																	
578																	
	DIVISION $4 \div 2 = _$ $6 \div 2 = _$ $9 \div 3 = _$ $25 \div 5 = _$ $4 \div 4 = _$ $18 \div 6 = _$																

To aid comparability across countries, only equivalent questions across the surveys are included in the combined literacy and numeracy results. For example, since division is not offered at Standard 2 level in Tanzania, this data has not been presented in this analysis.

key findings



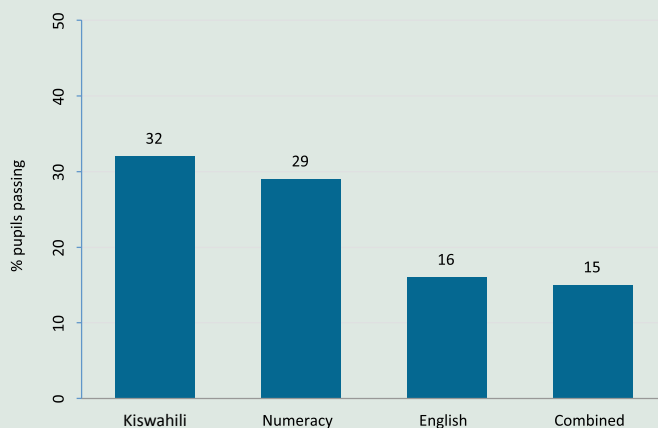
3. key findings

Fact 1: Less than one third of the pupils in East Africa possess basic literacy and numeracy skills

Consistent with the results of Uwezo 1 (see Fact 8), the Uwezo 2 results confirm that the basic numeracy and literacy skills of primary school children are deficient across the region. Figure 1, which takes the three countries together, shows the percentage of children enrolled at Standard 3 of primary school that are able to pass each of the three standard 2 leveled tests included in the survey questionnaire.⁶ In addition, the figure also shows the percentage of Standard 3 pupils in the region that passed both the literacy questions in their country's medium of instruction (English in Kenya and Uganda; Kiswahili in Tanzania) *and* the (common) numeracy questions – i.e. this measures the proportion able to pass both tests combined.⁷

The figure shows that very few children enrolled in Standard 3 can pass any of the individual tests. Specifically, a little less than one in three children were able to pass the Kiswahili (32%) and numeracy tests (29%), but only one in six passed the English test (16%). Similarly, less than one in six were able to pass both the literacy and numeracy tests combined (15%). These results imply that the vast majority of pupils are not acquiring basic competencies during the early years of primary school as expected in the national curricula.

Figure 1: Test pass rates for children enrolled in Standard 3, all East Africa



Notes: "Combined" refers to passes on both the (common) numeracy test questions and the literacy test questions.

Source: calculated from the Uwezo 2 data.

“These results imply that the vast majority of pupils are not acquiring basic competencies during the early years of primary school as expected in the national curricula.”

⁶ Country-specific data on test pass rates is reported in Appendices B, C and D.

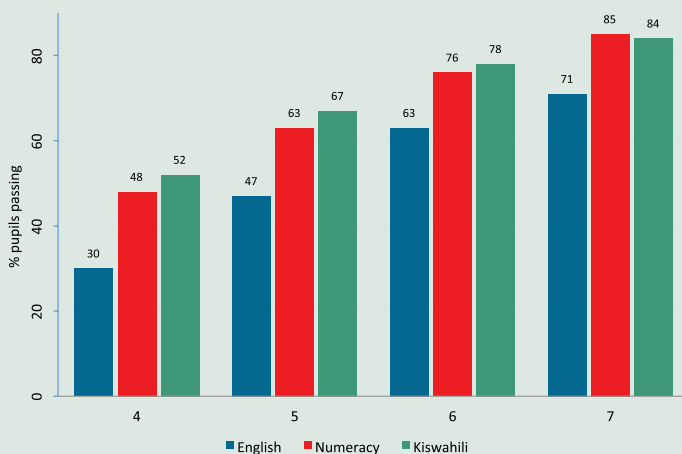
⁷ The common numeracy questions are those that were included in the numeracy tests in each country and survey round. They are (in order of increasing difficulty): number recognition; addition; subtraction; and multiplication.

Fact 2: Two in every 10 children in Standard 7 in East Africa do not have Standard 2 level literacy and numeracy competencies.

Do these low findings continue to hold throughout primary school? Figure 2 plots the pass rates on the individual tests for pupils enrolled above Standard 3. The figure shows that as children progress through the school system to higher classes, pass rates consistently increase on all the Standard 2 level tests. This tells us that children are learning *some* basic skills, albeit not at the expected time as set by the curriculum. The biggest learning leaps occur in upper primary level between Standards 4 to 5, and Standards 5 to 6 suggesting that many children are acquiring Standard 2 level skills in the later years of their primary education.

Given the low level at which the tests are set, it is concerning that the pass rates increase only slowly. In Standard 4, for example, only around one half of students are able to pass the Kiswahili test while the pass rates are lower for both numeracy and English. Only in Standard 7 do more than two thirds of children pass each one of the individual tests. This indicates that the effective literacy and numeracy competencies of many children remain low *throughout* primary school. Equally worrying is that a number of children who are preparing for the end of cycle national examinations have no mastery of basic literacy and numeracy skills.

Figure 2: Test pass rates by Standard for children enrolled in school, all East Africa combined



Notes: numbers along the horizontal axis refer to Standards 4 to 7 of primary school. Further note that the Kiswahili aggregate only combines Kenya and Tanzania.

Source: calculated from the Uwezo 2 data.

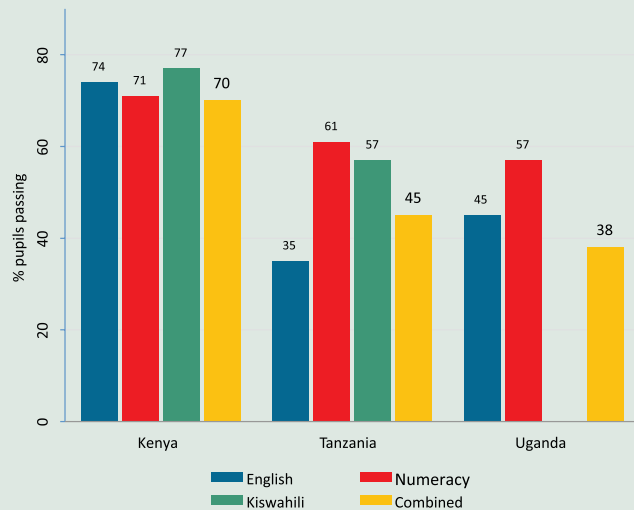
“The biggest learning leaps occur in upper primary level between Standards 4 to 5, and Standards 5 to 6 suggesting that many children are acquiring Standard 2 level skills in the later years of their primary education.”

Fact 3: There are large differences among countries in East Africa

The previous two findings referred to results for the region as a whole. However, there are substantial differences across Kenya, Tanzania and Uganda with respect to the basic literacy and numeracy skills (test results) of school age children. This is illustrated in Figure 3, which plots the percentage of children aged between 10 and 16 that are able to pass each of the individual tests (English, numeracy and Kiswahili), as well as the main literacy and numeracy tests combined.

The figure shows that Kenyan children outperform children from other East African countries on all tests. This is most apparent in the literacy tests. The pass rate of Kenyan children on the English test is more than double that of Tanzanian children (39 percentage points higher), and is 29 percentage points higher than children from Uganda. These results may reflect the effect of the mediums of instruction as English is more widely used across primary school. However, even on the Kiswahili test, which is more

Figure 3: Test pass rates for children aged 10-16, by country



Notes: calculations refer to all children (enrolled in school or not); “Combined” refers to passes on both the (common) numeracy test questions and the literacy test questions in the primary national language of instruction; Kiswahili test was not implemented in Uganda.

Source: calculated from the Uwezo 2 data.

“...the better performance of Kenyan pupils is relative. It remains the case that only one third of Standard 3 Kenya pupils (and even fewer in Tanzania and Uganda) can pass a Standard 2 level test.”

widely spoken in Tanzania than in Kenya, Kenyans perform best – 20% more Kenyan children aged 10-16 pass the Kiswahili test compared to children in Tanzania. Differences among the three countries are smallest on the numeracy test but there too Kenyan pupils perform better (on average) than children from the other two countries.

Two additional points can be made. First, it should not be forgotten that the better performance of Kenyan pupils is only relative. In overall terms, it remains the case that at Standard 3 around one third of Kenya pupils (and even fewer Tanzanian and Ugandan pupils) can pass a Standard 2 level test.

Second, whilst Figure 3 indicates that Ugandan children tend to perform worst in the region (with the exception of the English test), there are subtle differences between Tanzania and Uganda when one considers performance on the tests at each specific Standard (see Appendices B to D).⁸ Ugandan pupils perform comparatively worse at lower grades, but demonstrate faster ‘catch-up’ at higher grades.

For example, the proportion of Ugandan children that pass both the literacy and numeracy test (combined) are lower than in Kenya and Tanzania at Standards 1 through 5. However, from Standard 6 onwards, Ugandan pupils slightly outperform Tanzanian pupils.

Thus, in Standard 7, nearly 90% of Kenyan pupils pass both the literacy and numeracy tests (combined), which compares to around 80% of Ugandan pupils but only two thirds (66%) of Tanzanian pupils.

A potential explanation for this relative ‘catch-up’ of Ugandan pupils is wider use of English as the language of instruction in upper primary school (which would boost pass rates on the English literacy test).⁹

8 These issues also are discussed in further detail in the accompanying technical report (see www.uwezo.net).

9 High repetition rates in Uganda are indicated in external data sources, such as UNESCO (2011), *Global Education Digest 2011: Comparing Education Statistics Across the World*, Montreal: UNESCO Institute for Statistics

Fact 4: There are large differences in test results between districts within individual countries

The Uwezo surveys are representative at the district-level within each country. Therefore, it is instructive to consider the extent to which numeracy and literacy skills differ across districts. This can help identify specific (geographical) areas of relative excellence and failure within the education system, which is highly policy-relevant as local conditions vary between different regions, as do budget allocations.

To investigate this question we calculated the average pass rate on the literacy and numeracy tests combined for children aged 10-16 in each district. Next, for each country, these district-level pass rates were ranked from lowest to highest.

Table 3 lists the top and bottom ten districts in the region which confirms the existence of large disparities between districts and countries – the top ten districts are all located in Kenya (particularly in the Central region), while the worst ten are all found in Uganda (particularly the Northern region).



The district-level results also reinforce the finding of large comparative differences in performance between countries. For example, the best performing district in Uganda achieved an average pass rate of 72%, which is only slightly higher than the median district pass rate in Kenya.

Table 3: Summary of best and worst performing districts across East Africa

Rank	Country	Region	District	Combined % pass	Enrolment %
1	Kenya	Central	Thika West	92.1	90.7
2	Kenya	Central	Kikuyu	89.9	97.2
3	Kenya	Nairobi	Nairobi East	89.4	91.5
4	Kenya	Central	Nyeri South	88.2	95.7
5	Kenya	Central	Gatanga	86.9	96.7
6	Kenya	Central	Kirinyaga	86.7	96.7
7	Kenya	Rift Valley	Kajiado North	86.4	85.4
8	Kenya	Eastern	Imenti South	85.6	92.9
9	Kenya	Central	Ruiru	85.2	86.0
10	Kenya	Central	Gatundu	85.1	92.6
311	Uganda	Northern	Amuru	25.3	95.0
312	Uganda	Northern	Dokolo	23.3	95.7
313	Uganda	Western	Bundibugyo	22.7	95.3
314	Uganda	Eastern	Bugiri	22.1	96.9
315	Uganda	Eastern	Kaliro	20.6	88.0
316	Uganda	Northern	Amolatar	20.3	94.5
317	Uganda	Northern	Nakapiripirit	19.4	60.7
318	Uganda	Northern	Moroto	19.1	61.0
319	Uganda	Northern	Kaabong	16.9	60.3
320	Uganda	Northern	Kotido	9.7	40.8

Notes: rank order is calculated from the pooled mean test score of each district in each country; enrolment refers to primary and secondary school; sample is restricted to children aged 10-16; "Combined" refers to passes on both the (common) numeracy test questions and the literacy test questions in the primary national language of instruction.

Source: calculated using the Uwezo 2 data.

Table 3b: Summary of best and worst performing districts in Tanzania

Rank	Region	District	Combined % pass	Enrolment %
1	Arusha	Arusha	80.2	96.7
2	Iringa	IringaMjini	78.5	89.1
3	Kilimanjaro	Moshi Urban	72.5	86.0
4	Kagera	Bukoba Urban	71.1	90.9
5	Kilimanjaro	Rombo	70.2	93.9
6	Morogoro	Morogoro Urban	69.7	86.9
7	Dar es Salaam	Temeke	68.8	78.6
8	Mbeya	Mbeya Urban	68.4	95.9
9	Tanga	Tanga	66.4	95.7
10	Dar es Salaam	Ilala	66.3	90.1
110	Shinyanga	Kishapu	31.8	84.3
111	Shinyanga	Kahama	31.7	80.3
112	Mtwara	Mtwara Rural	30.6	82.3
113	Mara	Serengeti	29.8	63.9
114	Kigoma	Kibondo	28.6	73.1
115	Tanga	Kilindi	28.2	83.1
116	Shinyanga	Meatu	28.0	87.0
117	Mwanza	Ukerewe	27.7	87.9
118	Dodoma	Mpwapwa	27.7	81.7
119	Shinyanga	Bariadi	25.4	73.8

Notes: "Combined" refers to the average pass rate (per district) on both the (common) numeracy test questions and the Kiswahili literacy test questions; rank order is based on the "Combined" pass rate; enrolment refers to primary and secondary school; sample is restricted to children aged 10-16.

Source: calculated using the Uwezo 2 data.

Table 3a: Summary of best and worst performing districts in Kenya

Rank	Region	District	Combined % pass	Enrolment %
1	Central	Thika West	92.1	90.7
2	Central	Kikuyu	89.9	97.2
3	Nairobi	Nairobi East	89.4	91.5
4	Central	Nyeri South	88.2	95.7
5	Central	Gatanga	86.9	96.7
6	Central	Kirinyaga	86.7	96.7
7	Rift Valley	Kajiado North	86.4	85.4
8	Eastern	Imenti South	85.6	92.9
9	Central	Ruiru	85.2	86.0
10	Central	Gatundu	85.1	92.6
113	Rift Valley	Samburu North	41.3	62.9
114	Coast	Tana Delta	40.7	84.0
115	Rift Valley	Turkana South	40.5	69.2
116	North Eastern	Lagdera	40.5	63.4
117	North Eastern	Wajir East	37.1	78.8
118	North Eastern	Wajir West	36.0	71.6
119	North Eastern	Wajir North	35.2	66.2
120	North Eastern	Ijara	33.9	58.0
121	Rift Valley	Turkana Central	30.8	61.4
122	Rift Valley	Samburu East	26.5	47.9

Notes: "Combined" refers to the average pass rate (per district) on both the (common) numeracy test questions and the English literacy test questions; rank order is based on the "Combined" pass rate; enrolment refers to primary and secondary school; sample is restricted to children aged 10-16.

Source: calculated using the Uwezo 2 data.

Table 3c: Summary of best and worst performing districts in Uganda

Rank	Region	District	Combined % pass	Enrolment %
1	Central	Kampala	69.3	94.3
2	Central	Wakiso	64.5	92.6
3	Western	Mbarara	54.9	93.1
4	Western	Bushenyi	52.3	95.6
5	Central	Mityana	50.4	96.1
6	Western	Kiruhura	50.0	95.3
7	Central	Nakaseke	49.6	95.8
8	Central	Luwero	47.7	94.7
9	Western	Ibanda	47.4	92.9
10	Central	Nakasongola	46.7	97.4
70	Northern	Amuru	25.3	95.0
71	Northern	Dokolo	23.3	95.7
72	Western	Bundibugyo	22.7	95.3
73	Eastern	Bugiri	22.1	96.9
74	Eastern	Kaliro	20.6	88.0
75	Northern	Amolatar	20.3	94.5
76	Northern	Nakapiripirit	19.4	60.7
77	Northern	Moroto	19.1	61.0
78	Northern	Kaabong	16.9	60.3
79	Northern	Kotido	9.7	40.8

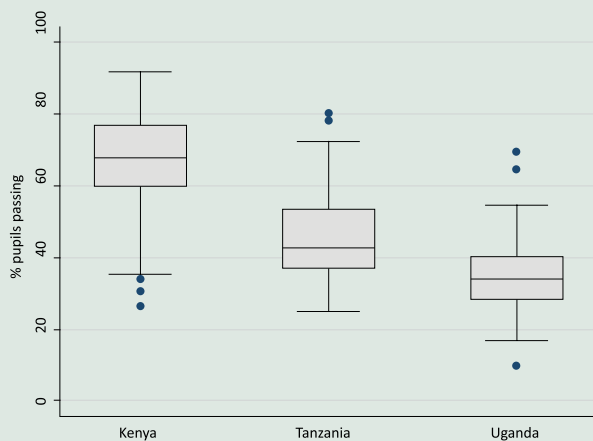
Notes: "Combined" refers to the average pass rate (per district) on both the (common) numeracy test questions and the English literacy test questions; rank order is based on the "Combined" pass rate; enrolment refers to primary and secondary school; sample is restricted to children aged 10-16.

Source: calculated using the Uwezo 2 data.

The data presented above reveal two further issues. In some districts, the percent of children who passed the Uwezo test is higher than number enrolled in school. This could imply that a number of children not enrolled, or those who may have completed primary education and not

progressed further, do possess basic literacy and numeracy skills in the relatively well performing districts. In some low performing districts, children faithfully attend school, even when they have little to show for it.

Table 4: Summary of district-level average pass rates on the numeracy and literacy tests combined, by country



“ In some low performing districts, children faithfully attend school, even when they have little to show for it.

Table 4 plots the pass rates of the bottom ten percent of districts (that is the lowest and highest rates of the bottom ten percent), the median pass rate, and the range of pass rates of the top ten percent of districts (more details in Appendix 1). The data reveals that the top districts in Kenya achieved a pass rate of between 84% and 92%; in Tanzania the top districts recorded an average pass rate of between 63% and 80%; while in Uganda, the top districts recorded an average pass rate between 48% and 70%. The median pass rates indicates that 50% of all districts in Kenya achieved an average pass rate of at least 68%; in Uganda, however, 50% of districts (the median) achieved a pass rate of 34% or less.

What do these results mean? The broad range of values covered by the district-level averages implies there is substantial geographical variation in literacy and numeracy *within* each country (by district). In other words, the expected literacy and numeracy skills of the ‘average’ pupil in each district varies considerably according to their location. The best performing district in Tanzania, for example, achieves an average pass rate of 80% compared to 25% in the worst performing district, a difference of 55 percentage points.¹⁰

Additionally, these results point to specific pockets of excellence and/or failure in each country. In Kenya, the range covered by the bottom 10% of districts is comparatively large, which indicates the existence of a small number of very poorly performing districts (mostly arid districts in the Rift Valley and North Eastern regions, see Table 3a). In contrast, although both Tanzania and Uganda have districts with very low average scores, one finds that the range covered by the top 10% districts is comparatively larger.

This points to the existence of a small number of particularly better performing districts in these countries, which are typically located in wealthier urban areas or agriculture rich districts. The district-level results also reinforce the finding of large comparative differences in performance between countries. For example, the best performing district in Uganda achieved an average pass rate of 72%, which is only slightly higher than the median district pass rate in Kenya. This means that almost half of Kenyan districts outperform the best district in Uganda.

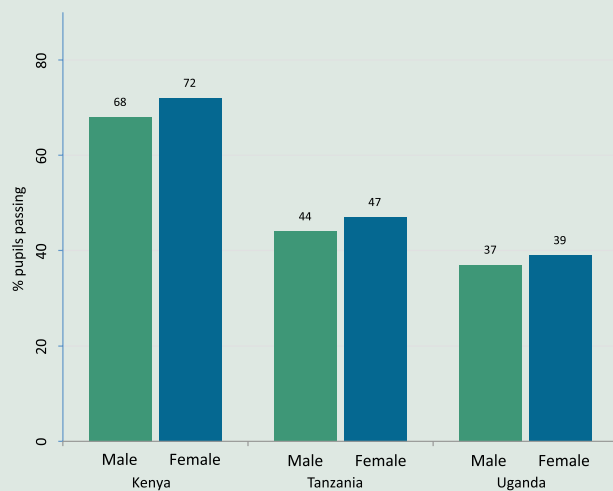
¹⁰ As detailed in the technical report, the extent of geographical inequality in learning outcomes is highest in Tanzania and lowest in Uganda, measured by the variation between district pass rates (the standard deviation).

Fact 5: There are minimal differences between boys and girls in their literacy and numeracy skills

Figure 4 plots the percentage of male and female children aged 10-16 in each country that are able to pass both the literacy and numeracy tests. For all three countries, the figure confirms the existence of some gender difference.

In fact, on average, girls slightly outperform boys in all countries. These trends are constant for both literacy and numeracy test scores.

Figure 4: Pass rates on literacy and numeracy tests (combined) for children aged 10-16, by gender and country



Source: calculated from the Uwezo 2 data.

“...commitments to public education for all aside, the reality is that opportunity to develop skills is highly unequal across East Africa.”

Fact 6: Children from poorer households perform worse on tests at all ages.

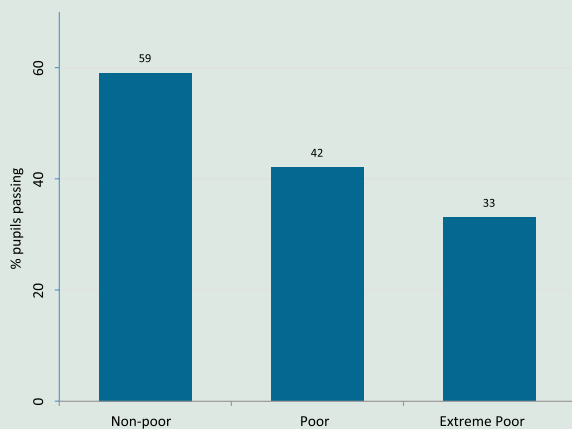
Various factors may be associated with differences in literacy and numeracy between children in East Africa. Among these, conditions within the child's household, such as its socio-economic status, are often critical. For instance, higher income households may be better able to afford additional learning materials (such as books and pencils) as well as put fewer demands on children to engage in income-earning activities.

To investigate this issue, the households in the sample were categorized into three socio-economic groups according to a number of simple questions – namely the durable assets owned, whether they have access to electricity and/or clean water, and whether the mother in the household has any formal education.¹¹ Admittedly, this is only a crude categorization; even so, one finds large differences across the socio-economic groups in the

numeracy and literacy test results. This is shown in Figure 5, which plots the percentage of children aged 10-16 in each socio-economic group (for the region as a whole), that are able to pass both the literacy and numeracy tests (combined). The figure shows a large difference between the poor and non-poor. The gap between the poor and non-poor is 18 percentage points, while the gap between the ultra-poor and the non-poor is 27 percentage points. This means that twice as many children (around 6 out of 10 children aged 10-16) from non-poor households are able to pass both tests compared to children from ultra-poor households (around 3 in 10 children). This data demonstrates that commitments to public education for all aside, the reality is that opportunity to develop skills is highly unequal across East Africa.

¹¹ To ensure comparability, the three socio-economic status categories are defined in the same way for each country in the region; i.e., they are *not* country-specific categorizations.

Figure 5: Pass rates on literacy and numeracy tests (combined) for children aged 10-16, by categories of socio-economic status, all East Africa



“ At age 10, for instance, the pass rate among the non-poor (33%) is twice that of the poor (16%) and three times that of the ultra-poor (10%).

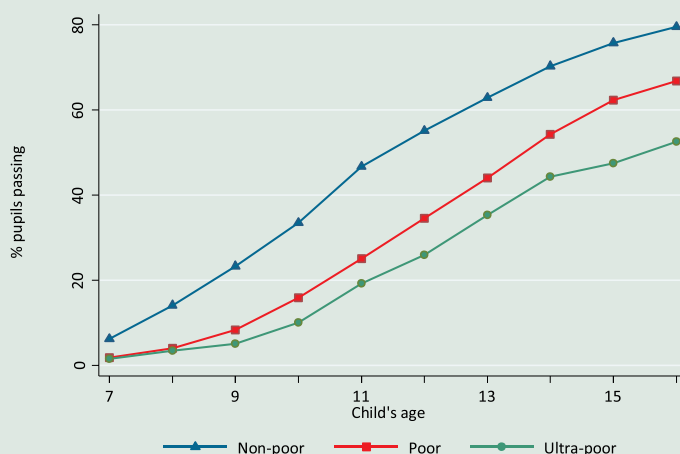
This learning gap between the poor and non-poor also is found consistently at all ages i.e., it is highly persistent. This is shown in Figure 6, which plots the pass rates on the combined tests for children of specific ages (from 7-16 years of age).

Two main points stand out. First, the pass rate for the non-poor, indicated by the top line (connected by triangles) is always above the other two lines, meaning that pass rates are always higher for this group. At age 10, for instance, the pass rate among the non-poor (33%) is twice that of the poor (16%) and three times that of the ultra-poor (10%). On average, the learning disadvantage of coming from a poor household, compared to coming from a non-

poor household, is equivalent to about two years (and more for ultra-poor households). This is because at age 12, around 34% of children from non-poor households pass both tests, which is equal to the pass rate of 10 year olds from non-poor households.

Second, one notes a slowly widening gap between the ultra-poor and the other groups with regards to the combined test pass rates (as shown in the figure), especially after 14 years of age. Among other things, this is likely due to higher dropout rates and lower rates of continuation to secondary school among ultra-poor children.¹²

Figure 6: Pass rates on literacy and numeracy tests (combined), by socio-economic status and age, all East Africa



“ On average, the learning disadvantage of coming from a poor household, compared to coming from a non-poor household, is equivalent to about two years (and more for ultra-poor households).

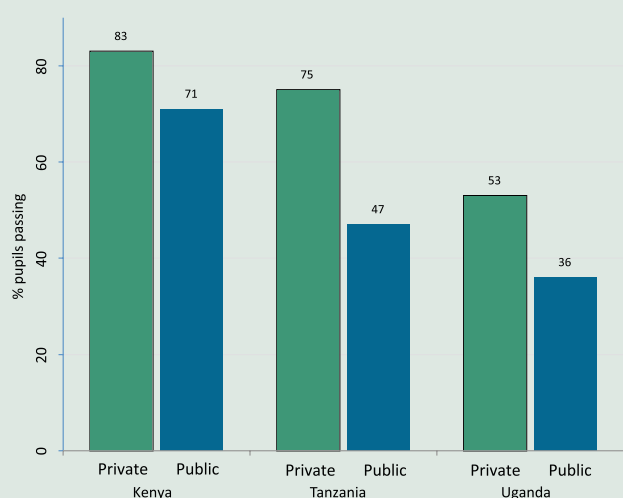
¹² Less than 4% of all children from ultra-poor households aged 10-16 are enrolled in secondary school, compared to 15% of non-poor children.

Fact 7: Pupils in private schools perform better than pupils in government (public) schools

In addition to the differences in literacy and numeracy test results due to location and socio-economic status, there are also large differences associated with the type of school attended. This is indicated by Figure 7, which plots the percentage of children aged 10-16 that are able to pass both the numeracy and literacy tests (combined) according to whether they attend either government (public) schools or private schools. The graph shows that private schools generate relatively higher pass rates in all countries. For example, the pass rate in Tanzanian government schools is 47% versus 75% in private schools. In part, the difference between Tanzania and the other countries is likely to be driven by the much smaller share of pupils attending private schools, even among the non-poor, suggesting they may be particularly selective.

Two further points come out of these data. First, the gap in results between public and private schools is much larger in Tanzania than in either Uganda or Kenya. This is seen from the distance between the private and public school bar heights in the figure. In Tanzania pupils of private perform more than one and half times better than those in government schools. In Kenya and Uganda this distance is smaller. Second, regardless of the type of school attended, large differences between countries in East Africa remain evident. For each type of school (either public or private), pupils from Kenya outperform pupils in Uganda and Tanzania. Moreover, on average, pupils in lower performing government schools in Kenya still outperform pupils from the better performing private schools in Uganda.

Figure 7: Pass rates on literacy and numeracy tests (combined) for children aged 10-16, by type of school and country



“The gap in results between public and private school is much larger in Tanzania than in Kenya or Uganda”

Fact 8: The 2011 Uwezo survey results are highly consistent with those of the first round.

Finally, it is useful to check whether the first and second rounds of the Uwezo surveys lead to similar conclusions, whether there is consistency and whether enough attention has been paid in order to allow comparisons over time. On the one hand, one would anticipate the results to be similar as all surveys were nationally representative and a maximum of two years (in the case of Kenya) separates the two rounds, which is a short time frame to achieve large scale changes in education outcomes. On the other hand, some differences are to be expected, mainly due to the larger number of districts covered in the second

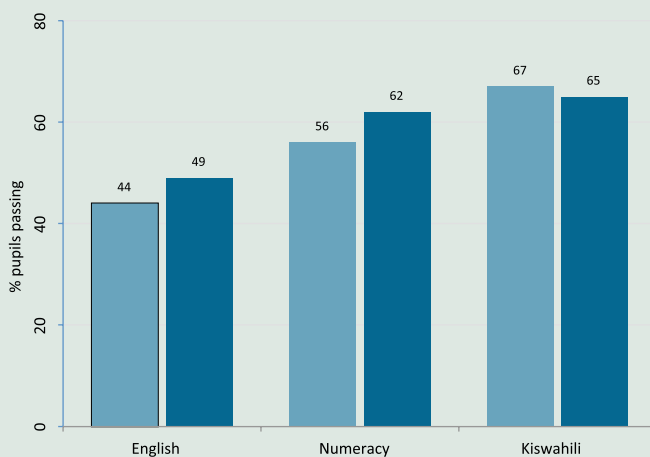
round. Indeed, the East Africa report for the first round of the Uwezo surveys (see www.uwezo.net) noted there may be a slight skew in the results owing to the fact that less than half of all districts were included in the sample. As noted in Section 2, this concern was addressed in Uwezo 2 which covered more than three quarters of all districts in each country, implying the second round results are more robust.

Looking at the region as a whole (i.e., taking Kenya, Uganda and Tanzania together as a single group), Figure

8 compares results between the two rounds of the Uwezo surveys on the literacy (English and Kiswahili) and numeracy tests. The figure shows the percentage of children aged 10-16 in the region that are able to pass each test. Only children above the age of 10 are included

as, by this age, they are expected to have completed at least 2 years of primary school education, and therefore should be able to pass the tests. The figure clearly shows that differences in the pass rates between the two rounds are small.

Figure 8: Literacy and numeracy test results for children aged 10-16 by Uwezo survey round, all East Africa



“ Only children above the age of 10 are included as, by this age, they are expected to have completed at least 2 years of primary school education, and therefore should be able to pass the tests.

The findings from the two survey rounds also are consistent for each country considered separately (Table 4). The data shows the percentage of children aged 10-16 in each country that correctly answered the numeracy and literacy tests combined. The differences are rather small, suggesting a high degree of consistency between the two rounds. This suggests the survey methodology and administration are likely to be robust and reliable.

Table 4: Percentage of children aged 10-16 passing both literacy and numeracy tests, by country

	Round 1	Round2
Kenya	65.6	69.7
Tanzania	44.3	45.4
Uganda	30.6	37.9
East Africa	45.9	49.8

Notes: Round 1 surveys were undertaken in 2009 (Kenya) and 2010 (Uganda and Tanzania); Round 2 surveys were all undertaken in 2011.

Source: calculated from the Uwezo 1 and Uwezo 2 data.



CONCLUSIONS

4. CONCLUSIONS

This report has summarized the main findings of the second round of the Uwezo surveys (Uwezo 2) implemented in Kenya, Tanzania (mainland) and Uganda during 2011. These surveys, which are some of the largest sample-based household surveys ever to be undertaken in Africa, provide independent evidence regarding the actual literacy and numeracy skills of over 100,000 children (aged 6-16) in each of three countries and over a wide spread of districts. The surveys are nationally representative and therefore provide a solid basis to investigate both levels and trends in learning outcomes.

The principal finding of Uwezo 2 echoes that of Uwezo 1. Despite important gains in access to primary schooling throughout the region, evidenced by generally high enrolment rates, large numbers of children are simply not learning. In all three countries, more than two thirds of children in Standard 3 do not have the basic literacy and numeracy skills set at the Standard 2 level. Moreover, these basic skills are acquired only slowly, and many children only achieve them after five or more years of completed education (instead of just two).

The surveys also reveal a number of other important findings. There are large differences in average test scores *between* countries in East Africa. Kenyan pupils perform best in literacy and numeracy. Ugandan pupils perform worst during the early years of primary schooling, but exhibit faster progress and slightly outperform pupils in Tanzania by the end of primary school. There are also large differences in average test scores between districts *within* each country. In Kenya there are a small number of very poorly performing districts. In Tanzania and Uganda there are larger numbers of poorly performing districts as well as a small number of very strong performers.

Differences in test performance (between individuals and districts) are due to a large number of factors. Importantly, however, there are few differences in test scores between boys and girl, and in fact girls slightly outperform boys in all three countries. Nonetheless, children from socio-economically disadvantaged households perform worse on tests at all ages, which suggests that inequality in educational opportunity is persistent. Also pupils in private schools perform much better than pupils in government

(public) schools in all three countries, a difference which is particularly marked in Tanzania.

A detailed technical report provides a more extensive analysis of the Uwezo surveys (available from www.uwezo.net). Among other things, future research will seek to further unpack the determinants of learning outcomes and their variation across the region.

When such findings are released, it is natural to ask what the solutions are. Indeed Uwezo itself has been created not only to conduct research but to spur improvements in literacy and numeracy levels. Still, we hesitate to provide a set of ready-made answers; if anything, experience teaches us that solutions that appear obvious may not in fact be effective. In our view the question of what should be done needs to be approached with a great deal of skepticism and an openness to think differently. In that spirit, we recommend the following five considerations:

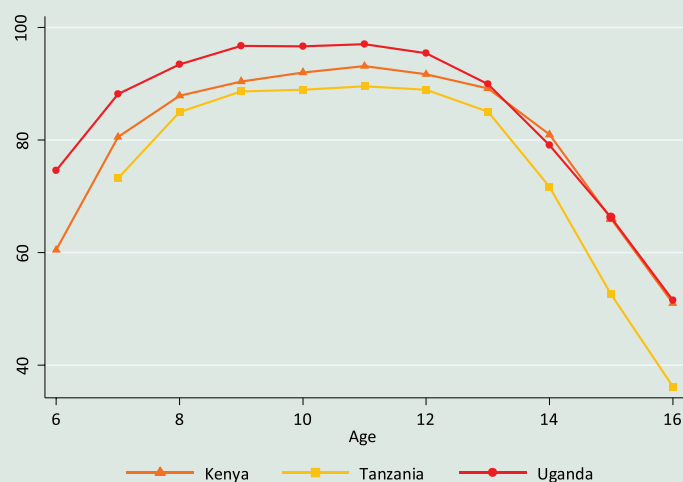
- *Do not do more of the same.* In the face of poor results, politicians, education managers and NGOs often call for *more* to be done, or *more resources* to be invested in the same interventions, when in fact the key problem may be the choice of interventions rather than lack of resources.
- *Insist on rigorous evidence.* Too many policies and budgets are determined on the basis of past practice, ideological preference or political whim. Policy makers and school administrators alike would do better to examine the evidence for the effectiveness of different interventions so as to develop a more informed sense of what works.
- *Focus on learning outcomes instead of educational inputs.* Among the public and policy makers alike, education is often characterized in terms of physical inputs such as classrooms, desks and books, as well as human inputs such as numbers of qualified teachers and enrolled pupils. While these aspects can no doubt contribute, the ultimate measure of success that should focus all our minds should be learner abilities, i.e. not how many desks are there but can Juma read.

- *Learn from what works.* While overall results are poor, some schools and districts do better than others despite facing similar constraints as others. Their success may be explained by historical and income advantages in part, but there may be other factors of success regarding management of institutions, collective action and innovation that others could emulate.
- *Experiment and test out new ideas.* The basic mode of classroom pedagogy today in most schools has not changed much over decades. It may be worthwhile to consciously create a culture and room for ‘disruptive’ ideas and technologies and test whether innovations and different approaches, such as cash on delivery and others, work better.

These five considerations are more about a way of thinking and approaching a problem than proffering any specific solution. And perhaps that is the key point. Indeed, when a hugely expanded schooling infrastructure and continuing to spend a fifth of the national budget continues to bring such poor results, our key challenge may be less about identifying a policy or technocratic fix, setting up a new project or raising funds, and more a reflection of the failure of our educational imagination. If Uwezo findings can stimulate education leaders and the public alike, including teachers and parents, to pause, and to wonder whether we are doing the right thing, and instead think about what works and how to scale it up, it will have done a large part of its job.

APPENDIX A: EAST AFRICA ADDITIONAL DATA

Figure A.1: Proportion of children enrolled in primary school, by age



Notes: this figure plots the proportion of children of a given age who are enrolled in primary school; note that primary school in Tanzania starts at age 7, which is a year later than in Uganda and Kenya.

Source: calculated from the Uwezo 2 data.

Table A1: Summary of district-level average pass rates on the numeracy and literacy tests combined, by country

	Bottom 10%		Median	Top 10%	
Kenya	26.5	- 50.0	67.6	84.3	- 92.1
Tanzania	25.4	- 33.3	42.8	63.1	- 80.2
Uganda	9.7	- 22.7	34.1	47.7	- 69.3

Notes: bottom and top 10% give the highest and lowest district average pass rates for the group of districts in the top and bottom 10% of districts in each country.

Source: calculated from the Uwezo 2 data.

Table A2: Percentage of children aged 10-16 passing Uwezo tests, by gender and country

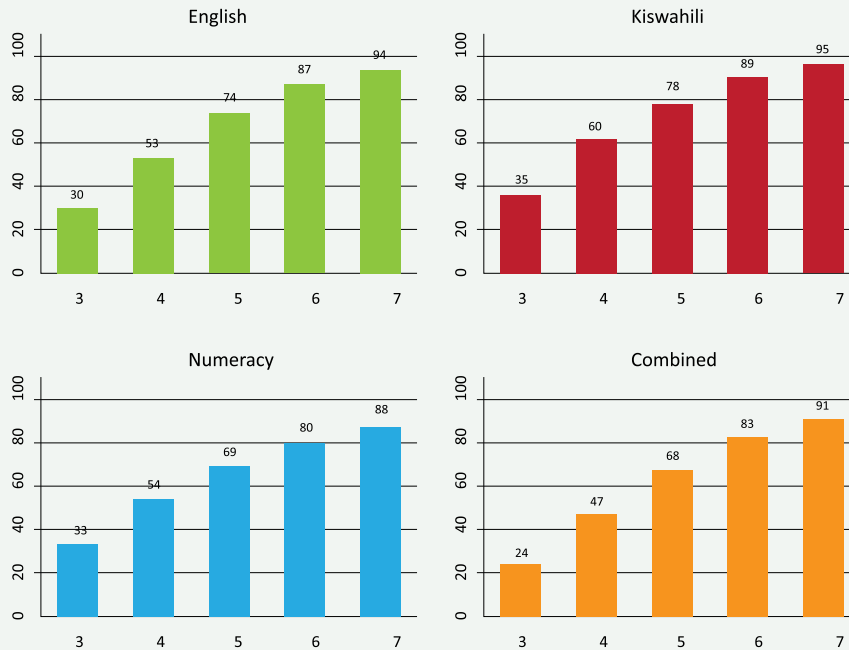
Country	Test	Males	Females	Difference
Kenya	Literacy	72.4	76.6	-4.2
	Numeracy	70.0	72.9	-2.9
	Combined	67.7	71.8	-4.0
Tanzania	Literacy	55.2	59.0	-3.7
	Numeracy	59.9	61.3	-1.4
	Combined	44.3	46.5	-2.2
Uganda	Literacy	42.9	46.2	-3.3
	Numeracy	56.6	57.2	-0.5
	Combined	36.6	39.2	-2.6

Notes: 'Literacy' tests refer to English in both Kenya and Uganda, and Kiswahili in Tanzania; 'Combined' test refers to pupils that pass *both* literacy and numeracy tests.

Source: calculated from the Uwezo 2 data.

APPENDIX B: ADDITIONAL TABLES AND FIGURES FOR KENYA

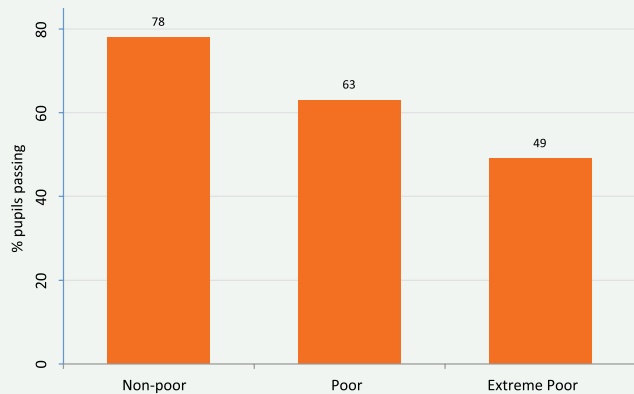
Figure B.1: Test pass rates by Standard for children enrolled in school, Kenya



Notes: numbers along the horizontal axis refer to Standards 3 to 7 of primary school; “Combined” refers to passes on both the (common) numeracy test questions and the English literacy test questions.

Source: calculated from the Uwezo 2 data.

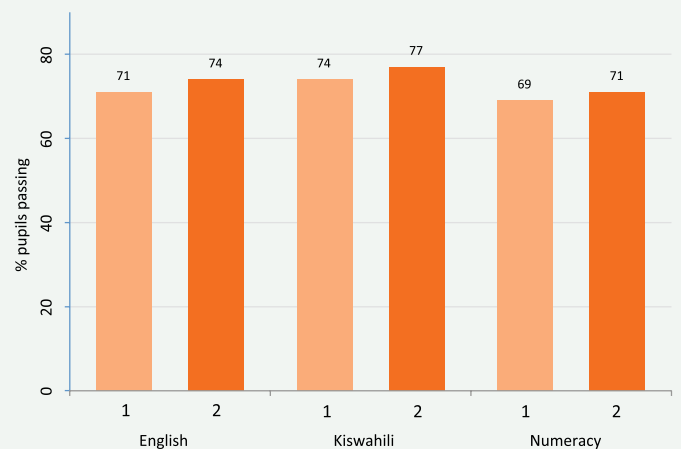
Figure B.2: Pass rates on literacy and numeracy tests (combined) for children aged 10-16, by categories of socio-economic status, Kenya



Notes: socio-economic status categories are as described in the text.

Source: calculated from the Uwezo 2 data.

Figure B.3: Test results for children aged 10-16, by Uwezo survey round, Kenya

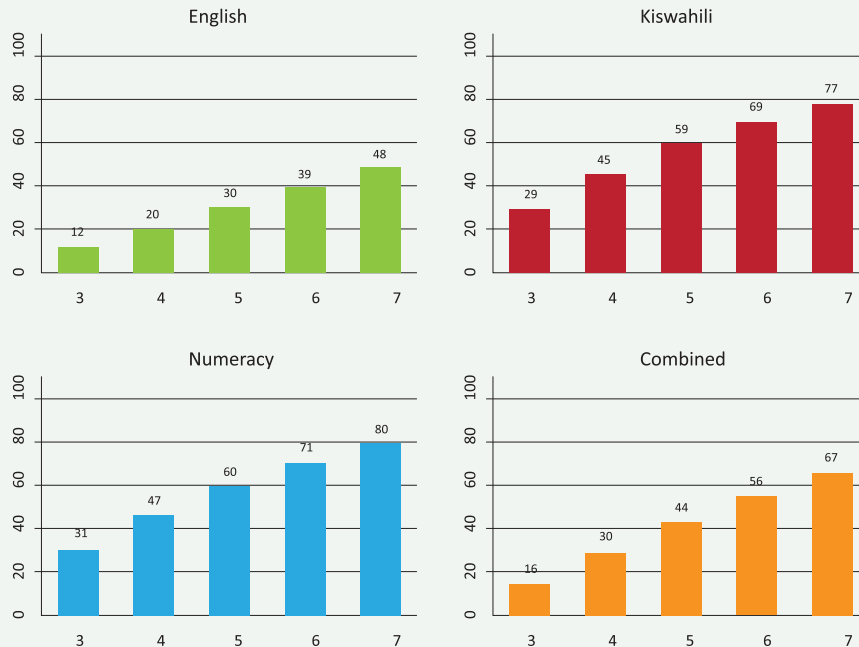


Notes: survey round indicated in numbers along the horizontal axis.

Source: calculated from the Uwezo 1 and Uwezo 2 data.

APPENDIX C: ADDITIONAL TABLES AND FIGURES FOR TANZANIA (MAINLAND)

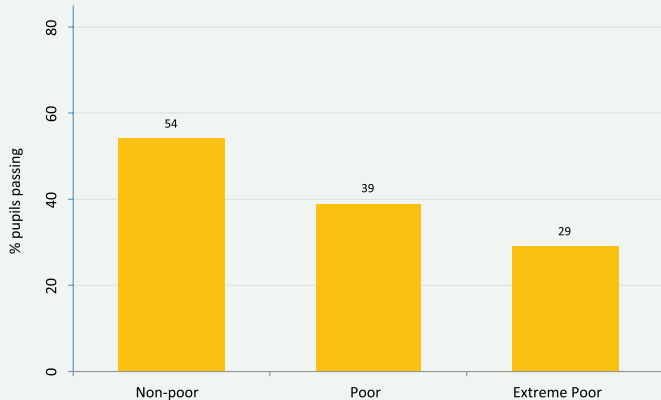
Figure C.1: Test pass rates by Standard for children enrolled in school, Tanzania



Notes: numbers along the horizontal axis refer to Standards 3 to 7 of primary school; “Combined” refers to passes on both the (common) numeracy test questions and the Kiswahili literacy test questions.

Source: calculated from the Uwezo 2 data.

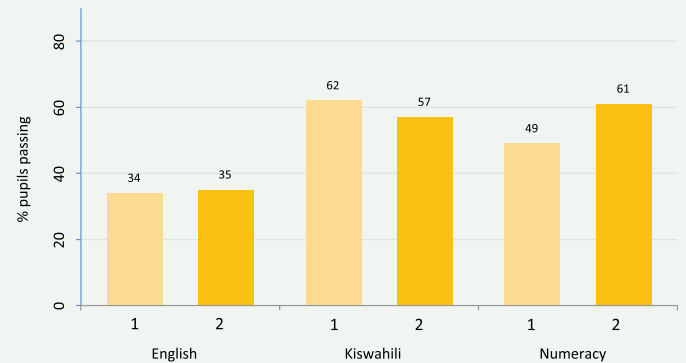
Figure C.2: Pass rates on literacy and numeracy tests (combined) for children aged 10-16, by categories of socio-economic status, Tanzania



Notes: socio-economic status categories are as described in the text.

Source: calculated from the Uwezo 2 data.

Figure C.3: Test results for children aged 10-16, by Uwezo survey round, Tanzania



Notes: survey round indicated in numbers along the horizontal axis.

Source: calculated from the Uwezo 1 and Uwezo 2 data.

APPENDIX D: ADDITIONAL TABLES AND FIGURES FOR UGANDA

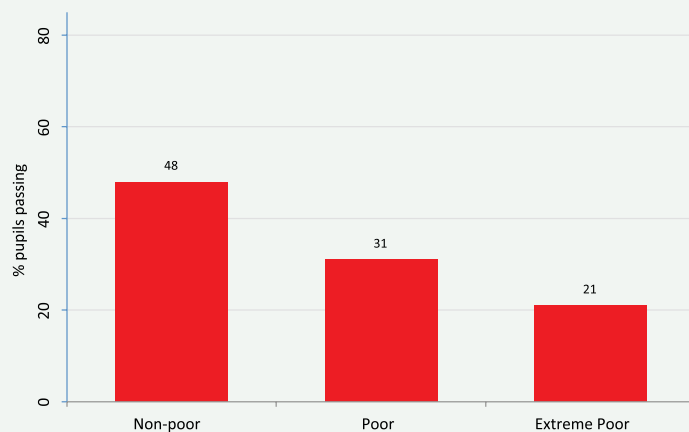
Figure D.1: Test pass rates by Standard for children enrolled in school, Uganda



Notes: numbers along the horizontal axis refer to Standards 3 to 7 of primary school; “Combined” refers to passes on both the (common) numeracy test questions and the English literacy test questions.

Source: calculated from the Uwezo 2 data.

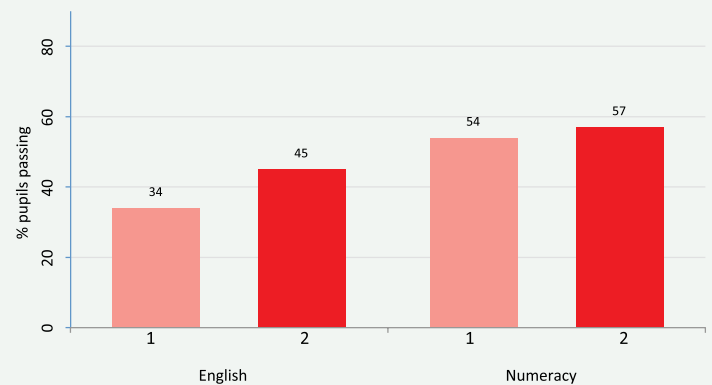
Figure D.2: Pass rates on literacy and numeracy tests (combined) for children aged 10-16, by categories of socio-economic status, Uganda



Notes: socio-economic status categories are as described in the text.

Source: calculated from the Uwezo 2 data.

Figure D.3: Test results for children aged 10-16, by Uwezo survey round, Uganda



Notes: survey round indicated in numbers along the horizontal axis.

Source: calculated from the Uwezo 1 and Uwezo 2 data.

APPENDIX E: UWEZO LITERACY AND NUMERACY TEST EXAMPLES

Numeracy Test

NUMERACY TEST - KENYA

NUMBER

RECOGNITION 10-99

13	45	62
84	27	58

ADDITION

33	26	63	82
+12	+52	+24	+10

COUNT AND MATCH

37 48 70 26

-12 -27 -29 -13

WHICH IS GREATER?

13 and 57	37 and 12
51 and 46	26 and 81
39 and 62	48 and 29
25 and 17	74 and 91

MULTIPLICATION

2 × 2 = 3 × 4 =

3 × 3 = 2 × 4 =

6 × 2 = 8 × 3 =

DIVISION

8 ÷ 2 = 6 ÷ 4 =

12 ÷ 3 = 10 ÷ 2 =

10 ÷ 5 = 20 ÷ 4 =

HISABATI - TANZANIA

UTAMBEUZI WA NAMBA

19	75	69
56	35	87

KUJUMUISHA NAMBA

39	14	56	38
+29	+17	+26	+25

TAJA IDADI

92 34 53 80

-74 -17 -24 -68

NAMBA IPI NI KUBWA ZAIDI?

19 au 29	71 au 99
10 au 13	62 au 28
82 au 42	80 au 28
23 au 11	22 au 50

MULTIPLICATION

2 × 2 = 3 × 4 =

3 × 3 = 2 × 4 =

6 × 2 = 8 × 3 =

NUMERACY - UGANDA

NUMBER

RECOGNITION 10-99

15	47	25
23	30	94

ADDITION

35	425	121	216
+51	+132	+642	+42

COUNTING

78 634 635 194

-34 -323 -112 -34

PLACE VALUE

Number	H	T	O
263			
453			
578			

MULTIPLICATION

2 × 1 = 4 × 6 =

13 × 2 = 3 × 8 =

6 × 2 = 9 × 2 =

DIVISION

4 ÷ 2 = 6 ÷ 2 =

8 ÷ 3 = 25 ÷ 5 =

4 ÷ 4 = 18 ÷ 6 =

English Test

ENGLISH TEST - KENYA

Letters

a	u
m	q
g	c

Words

day	shop
pet	girl
eye	road

Paragraph

Sara has one brother. His name is Tom. Tom is six years old. He is in class one.

STORY

Peter and Mary live in Kitui. Kitui is a hot and sunny place. They always wear light clothes. They like playing in the sun. They are happy when it rains. Last year it rained a lot. They helped their father plant some trees. Mother planted maize and beans. There was a lot of food. Mother took some maize to the market. She sold it and got a lot of money. Mother used the money to buy shoes for us. We were all very happy.

Q1. Where does Peter live?
Q2. What did mother sell?

ENGLISH TEST - TANZANIA

Letters

v	b
c	k
e	n

Words

boy	leg
three	come
iri	book

Paragraph

Our school is good. Boys play at school. We sing good songs. Then we go home.

STORY

Musa is a good teacher. He teaches us well. He comes to class in the morning. He does not like lazy pupils. All the pupils at my school love him. I love him too.

Questions.

- Who is a good teacher?
- Which pupils does Musa not like?

ENGLISH TEST - UGANDA

Letters

i	e
d	p
a	n

Words

dig	nose
good	leg
foot	play

Paragraph

My uncle has a shop. It is a big shop. He is happy. He will buy a car.

STORY

Last week our teacher told us a story. It was about an old man. His name is Mr. Okello. His wife is called Nora. They had four children. He was a good man. He used to tell his children stories. The stories were about small animals.

Questions.

- What was the name of the old man?
- How many children did Mr. Okello have?

Kiswahili Test

KUSOMA KENYA

Silabi

ka	ye
gi	ra
si	du

Maneno

mita	kuni
jani	picha
njia	uma

Aya

Leo kuna baridi sana. Wafoto wamevua sineta. Wote wamekaa ndani. Mama amesema hivyo.

Hadithi

Mimi nina-nya Nuru. Ninasema shule ya msingi ya Bahati. Ninasema darasa la pili. Mimi huenda shule kuanzia Jumatatu hadi Jumatano. Jumamosi na Jumatili ni siku ya kupumzika. Shule yetu ni ya watichana na wawulana. Wanafunzi wote huwa sana safi kila siku. Shule yetu ina madarasa manano. Ina ofisi ya mwalimu mkuu na ofisi ya kazi. Walimu wote wanili wana-shi shuleni. Kuna awanyo mmoja wa mpira. Kuna miji mingi, nyazi na maut. Shule yetu ina walimu wazuri. Ninapenda shule yetu sana.

Maswali

- Nuru anasema darasa gani?
- Shule ya akina Nuru ina darasa ngapi?

KUSOMA TANZANIA

Silabi

wi	du
nyee	ma
kwa	bi

Maneno

bata	pa
kwetu	chura
kuku	ndoo

Aya

Mimi ni mwanafunzi. Ninasema darasa la pili. Mwalimu wetu anafundisha vizuri. Ninapaswa kuamini na kazi yangu.

Hadithi

Halima ni mwanafunzi wa darasa la pili. Siku moja alipotaka shule climbata Daudi amekaa chini ama amisho kichwa. Halima alimtoleza Daudi na kumuuliza sababu amekaa, an toleza gani? Daudi alijibu kwamba kichwa kinauma. Halima aliamaz kumsaidia Daudi kubeba mfuko wake wa vitabu na kumsindikiza hadi nyumboni. Walipofika nyumboni walimkuta mama Daudi. Mama Daudi alimwepeka na haicioni-bisha. Mama Daudi alimshukuru Halima kwa wema aliotenda kumsindikiza Daudi.

Maswali

- Kwa nini Daudi alikaa chini?
- Hadithi hii inatufundisha nini?

APPENDIX F: EAST AFRICA DISTRICT RANKING

Country	District	Region	Rank	Country	District	Region	Rank
Kenya	Thika West	Central	1	Kenya	Mandera West	North Eastern	40
Kenya	Kikuyu	Central	2	Kenya	Sotik	Rift Valley	41
Kenya	Nairobi East	Nairobi	3	Kenya	Nandi North	Rift Valley	42
Kenya	Nyeri South	Central	4	Kenya	Kangundo	Eastern	43
Kenya	Gatanga	Central	5	Kenya	Nandi Central	Rift Valley	44
Kenya	Kirinyaga	Central	6	Kenya	Emuhaya	Western	45
Kenya	Kajiado North	Rift Valley	7	Kenya	Imenti North	Eastern	46
Kenya	Imenti South	Eastern	8	Tanzania	Moshi Urban	Kilimanjaro	47
Kenya	Ruiru	Central	9	Kenya	Tharaka	Eastern	48
Kenya	Gatundu	Central	10	Kenya	Mbeere	Eastern	49
Kenya	Githunguri	Central	11	Kenya	Koibatek	Rift Valley	50
Kenya	Kiambu	Central	12	Kenya	Suba	Nyanza	51
Kenya	Muranga North	Central	13	Kenya	Kitui	Eastern	52
Kenya	Nyandarua South	Central	14	Tanzania	Bukoba Urban	Kagera	53
Kenya	Lari	Central	15	Kenya	Kajiado Central	Rift Valley	54
Kenya	Masaba	Nyanza	16	Kenya	Nandi South	Rift Valley	55
Kenya	Mbooni	Eastern	17	Tanzania	Rombo	Kilimanjaro	56
Kenya	Nyandarua North	Central	18	Kenya	Hamisi	Western	57
Kenya	Manga	Nyanza	19	Kenya	Trans Nzoia West	Rift Valley	58
Kenya	Taita	Coast	20	Tanzania	Morogoro Urban	Morogoro	59
Kenya	Laikipia East	Rift Valley	21	Kenya	Yatta	Eastern	60
Tanzania	Arusha	Arusha	22	Kenya	Embu	Eastern	61
Kenya	Gucha	Nyanza	23	Uganda	Kampala	Central	62
Kenya	Keiyo	Rift Valley	24	Kenya	Kibwezi	Eastern	63
Kenya	Marakwet	Rift Valley	25	Tanzania	Temeke	Dar Es Salaam	64
Kenya	Naivasha	Rift Valley	26	Kenya	Mwingi	Eastern	65
Tanzania	Iringa Mjini	Iringa	27	Kenya	Butere	Western	66
Kenya	Mombasa	Coast	28	Kenya	Rongo	Nyanza	67
Kenya	Nakuru	Rift Valley	29	Tanzania	Mbeya Urban	Mbeya	68
Kenya	Baringo Central	Rift Valley	30	Kenya	Bungoma North	Western	69
Kenya	Makueni	Eastern	31	Kenya	Kisumu West	Nyanza	70
Kenya	Nakuru North	Rift Valley	32	Kenya	Laikipia West	Rift Valley	71
Kenya	Baringo North	Rift Valley	33	Kenya	Marsabit	Eastern	72
Kenya	Mwala	Eastern	34	Kenya	Molo	Rift Valley	73
Kenya	Buret	Rift Valley	35	Kenya	Nandi East	Rift Valley	74
Kenya	Eldoret East	Rift Valley	36	Kenya	Mandera Central	North Eastern	75
Kenya	Meru South	Eastern	37	Kenya	Tigania	Eastern	76
Kenya	Wareng	Rift Valley	38	Tanzania	Tanga	Tanga	77
Kenya	Kisii Central	Nyanza	39	Kenya	Nyando	Nyanza	78

Country	District	Region	Rank	Country	District	Region	Rank
Tanzania	Ilala	Dar Es Salaam	79	Kenya	Mandera East	North Eastern	119
Kenya	Rachuonyo	Nyanza	80	Kenya	Gucha South	Nyanza	120
Kenya	Bomet	Rift Valley	81	Tanzania	Ileje	Mbeya	121
Kenya	Kakamega Central	Western	82	Tanzania	Makete	Iringa	122
Kenya	Lamu	Coast	83	Tanzania	Pangani	Tanga	123
Kenya	Teso North	Western	84	Kenya	Kaloleni	Coast	124
Kenya	Kericho	Rift Valley	85	Kenya	Loitokitok	Rift Valley	125
Tanzania	Songea Urban	Ruvuma	86	Tanzania	Kinondoni	Dar Es Salaam	126
Kenya	Bondo	Nyanza	87	Tanzania	Iringa Rural	Iringa	127
Kenya	Samia	Western	88	Kenya	Moyale	Eastern	128
Kenya	Busia	Western	89	Kenya	West Pokot	Rift Valley	129
Kenya	Kakamega North	Western	90	Kenya	Pokot Central	Rift Valley	130
Uganda	Wakiso	Central	91	Tanzania	Kibaha	Coast	131
Kenya	Trans Nzoia East	Rift Valley	92	Tanzania	Kyela	Mbeya	132
Kenya	Rarieda	Nyanza	93	Uganda	Mbarara	Western	133
Tanzania	Mwanga	Kilimanjaro	94	Kenya	Laikipia North	Rift Valley	134
Kenya	Taveta	Coast	95	Tanzania	Kigoma Urban	Kigoma	135
Kenya	Malindi	Coast	96	Kenya	Teso South	Western	136
Tanzania	Hai	Kilimanjaro	97	Tanzania	Newala	Mtwara	137
Kenya	Kyuso	Eastern	98	Tanzania	Dodoma Urban	Dodoma	138
Tanzania	Kilolo	Iringa	99	Tanzania	Ilemela	Mwanza	139
Kenya	Mt Elgon	Western	100	Tanzania	Mtwara Urban	Mtwara	140
Tanzania	Mufindi	Iringa	101	Kenya	Pokot North	Rift Valley	141
Kenya	Kakamega South	Western	102	Tanzania	Simanjiro	Manyara	142
Kenya	Bungoma East	Western	103	Tanzania	Songea Rural	Ruvuma	143
Kenya	Kuria East	Nyanza	104	Tanzania	Lushoto	Tanga	144
Tanzania	Same	Kilimanjaro	105	Tanzania	Kisarawe	Coast	145
Kenya	Migori	Nyanza	106	Tanzania	Manyoni	Singida	146
Kenya	Mutomo	Eastern	107	Uganda	Bushenyi	Western	147
Kenya	Kilifi	Coast	108	Kenya	Samburu Central	Rift Valley	148
Kenya	Kisii South	Nyanza	109	Tanzania	Tabora Urban	Tabora	149
Kenya	Kwanza	Rift Valley	110	Tanzania	Chunya	Mbeya	150
Tanzania	Shinyanga Urban	Shinyanga	111	Tanzania	Korogwe	Tanga	151
Kenya	Narok North	Rift Valley	112	Tanzania	Musoma Urban	Mara	152
Kenya	Igembe	Eastern	113	Uganda	Mityana	Central	153
Tanzania	Njombe	Iringa	114	Kenya	Tana River	Coast	154
Kenya	Trans Mara	Rift Valley	115	Kenya	Isiolo	Eastern	155
Kenya	Bunyala	Western	116	Tanzania	Singida Urban	Singida	156
Tanzania	Moshi Rural	Kilimanjaro	117	Tanzania	Babati	Manyara	157
Tanzania	Ulanga	Morogoro	118	Kenya	Msambweni	Coast	158

Country	District	Region	Rank	Country	District	Region	Rank
Uganda	Kiruhura	Western	159	Uganda	Lyantonde	Central	199
Kenya	Narok South	Rift Valley	160	Kenya	Samburu North	Rift Valley	200
Uganda	Nakaseke	Central	161	Uganda	Kabale	Western	201
Tanzania	Nyamagana	Mwanza	162	Tanzania	Lindi Urban	Lindi	202
Tanzania	Mbeya Rural	Mbeya	163	Tanzania	Masasi	Mtwara	203
Kenya	Bungoma South	Western	164	Kenya	Tana Delta	Coast	204
Tanzania	Hanang	Manyara	165	Kenya	Turkana South	Rift Valley	205
Tanzania	Rungwe	Mbeya	166	Kenya	Lagdera	North Eastern	206
Tanzania	Maswa	Shinyanga	167	Tanzania	Kilwa	Lindi	207
Uganda	Luwero	Central	168	Uganda	Mpigi	Central	208
Tanzania	Mbinga	Ruvuma	169	Tanzania	Kwimba	Mwanza	209
Uganda	Ibanda	Western	170	Tanzania	Muheza	Tanga	210
Uganda	Nakasongola	Central	171	Tanzania	Kigoma Rural	Kigoma	211
Tanzania	Mafia	Coast	172	Uganda	Kalangala	Central	212
Tanzania	Karatu	Arusha	173	Uganda	Kanungu	Western	213
Tanzania	Mvomero	Morogoro	174	Tanzania	Misungwi	Mwanza	214
Uganda	Hoima	Western	175	Tanzania	Urambo	Tabora	215
Uganda	Kabarole	Western	176	Uganda	Jinja	Eastern	216
Tanzania	Mbarali	Mbeya	177	Tanzania	Magu	Mwanza	217
Tanzania	Kilombero	Morogoro	178	Uganda	Gulu	Northern	218
Tanzania	Arumeru	Arusha	179	Uganda	Mukono	Central	219
Uganda	Rukungiri	Western	180	Tanzania	Igunga	Tabora	220
Tanzania	Kiteto	Manyara	181	Uganda	Kasese	Western	221
Tanzania	Nachingwea	Lindi	182	Tanzania	Rufiji	Coast	222
Tanzania	Mbulu	Manyara	183	Tanzania	Karagwe	Kagera	223
Tanzania	Kondoa	Dodoma	184	Tanzania	Biharamulo	Kagera	224
Tanzania	Ludewa	Iringa	185	Tanzania	Morogoro Rural	Morogoro	225
Uganda	Masaka	Central	186	Uganda	Rakai	Central	226
Tanzania	Kasulu	Kigoma	187	Uganda	Isingiro	Western	227
Tanzania	Mkuranga	Coast	188	Tanzania	Kilosa	Morogoro	228
Uganda	Mbale	Eastern	189	Tanzania	Uyui	Tabora	229
Tanzania	Mpanda	Rukwa	190	Uganda	Kitgum	Northern	230
Tanzania	Singida Rural	Singida	191	Uganda	Busia	Eastern	231
Tanzania	Bukoba Rural	Kagera	192	Tanzania	Geita	Mwanza	232
Tanzania	Bukombe	Shinyanga	193	Tanzania	Sikonge	Tabora	233
Tanzania	Bagamoyo	Coast	194	Tanzania	Lindi Rural	Lindi	234
Tanzania	Bunda	Mara	195	Tanzania	Iramba	Singida	235
Uganda	Ntungamo	Western	196	Tanzania	Handeni	Tanga	236
Tanzania	Liwale	Lindi	197	Kenya	Wajir East	North Eastern	237
Tanzania	Namtumbo	Ruvuma	198	Tanzania	Ngorongoro	Arusha	238

Country	District	Region	Rank	Country	District	Region	Rank
Tanzania	Ngara	Kagera	239	Uganda	Oyam	Northern	280
Tanzania	Ruangwa	Lindi	240	Kenya	Turkana Central	Rift Valley	281
Uganda	Manafwa	Eastern	241	Tanzania	Mtwara Rural	Mtwara	282
Kenya	Wajir West	North Eastern	242	Uganda	Kaberamaido	Eastern	283
Tanzania	Mbozi	Mbeya	243	Uganda	Adjumani	Northern	284
Tanzania	Tandahimba	Mtwara	244	Tanzania	Serengeti	Mara	285
Uganda	Kisoro	Western	245	Uganda	Abim	Northern	286
Tanzania	Dodoma Rural	Dodoma	246	Uganda	Bukedea	Eastern	287
Uganda	Moyo	Northern	247	Uganda	Sembabule	Central	288
Uganda	Kapchorwa	Eastern	248	Uganda	Mubende	Central	289
Tanzania	Sumbawanga Urban	Rukwa	249	Uganda	Nebbi	Northern	290
Tanzania	Nzega	Tabora	250	Uganda	Katakwi	Eastern	291
Uganda	Kiboga	Central	251	Tanzania	Kibondo	Kigoma	292
Tanzania	Sengerema	Mwanza	252	Uganda	Pallisa	Eastern	293
Tanzania	Monduli	Arusha	253	Uganda	Butaleja	Eastern	294
Kenya	Wajir North	North Eastern	254	Uganda	Iganga	Eastern	295
Uganda	Sironko	Eastern	255	Uganda	Bududa	Central	296
Uganda	Bukwo	Eastern	256	Tanzania	Kilindi	Tanga	297
Tanzania	Kongwa	Dodoma	257	Uganda	Mayuge	Eastern	298
Tanzania	Shinyanga Rural	Shinyanga	258	Tanzania	Meatu	Shinyanga	299
Tanzania	Muleba	Kagera	259	Tanzania	Ukerewe	Mwanza	300
Uganda	Arua	Northern	260	Tanzania	Mpwapwa	Dodoma	301
Uganda	Kamwenge	Western	261	Uganda	Nyadri	Northern	302
Tanzania	Sumbawanga Rural	Rukwa	262	Uganda	Apac	Northern	303
Uganda	Kyenjojo	Western	263	Uganda	Yumbe	Northern	304
Uganda	Pader	Northern	264	Uganda	Koboko	Northern	305
Uganda	Kumi	Eastern	265	Uganda	Tororo	Eastern	306
Kenya	Ijara	North Eastern	266	Uganda	Budaka	Eastern	307
Tanzania	Nkasi	Rukwa	267	Kenya	Samburu East	Rift Valley	308
Uganda	Masindi	Western	268	Uganda	Kamuli	Eastern	309
Uganda	Soroti	Eastern	269	Tanzania	Bariadi	Shinyanga	310
Tanzania	Tunduru	Ruvuma	270	Uganda	Amuru	Northern	311
Tanzania	Musoma Rural	Mara	271	Uganda	Dokolo	Northern	312
Tanzania	Tarime	Mara	272	Uganda	Bundibugyo	Western	313
Uganda	Lira	Northern	273	Uganda	Bugiri	Eastern	314
Uganda	Amuria	Eastern	274	Uganda	Kaliro	Eastern	315
Uganda	Kayunga	Central	275	Uganda	Amolatar	Northern	316
Tanzania	Kishapu	Shinyanga	276	Uganda	Nakapiripirit	Northern	317
Uganda	Kibaale	Western	277	Uganda	Moroto	Northern	318
Tanzania	Kahama	Shinyanga	278	Uganda	Kaabong	Northern	319
Uganda	Buliisa	Western	279	Uganda	Kotido	Northern	320

This report compiles, compares and presents the headline findings of the 2011 Uwezo national assessments in Kenya, Uganda, and Tanzania (mainland). About 350,000 children across the three countries were tested in their ability to perform basic numeracy and literacy tasks at the Standard 2 level.

The Uwezo methodology, sampling frame, tools and processes have been developed in consultation with national and international experts, and are subject to rigorous scrutiny. Comprehensive information on the methodology and the full datasets are also publicly available.

The principal finding is that despite significant gains in expanding access to primary schooling, actual literacy and numeracy outcomes remain significantly deficient across the region. Although children are now enrolled in school in unprecedented numbers, they are not learning core skills expected at their age and grade level.

While the findings paint a grim picture of education in East Africa, there are reasons to be hopeful. First, the schools and districts that perform relatively better constitute a potential source of solutions on how to improve children's learning. Second, there is a marked shift in the public debate towards focusing on quality and learning outcomes, and asking sharper questions on how to achieve greater value from existing investments. Third, globally there is increased experimentation on innovations to spur learning that can benefit East Africa, should we choose to pay attention.

The opportunity to help every child learn in East Africa is there. This report seeks to help inform that opportunity.



Uwezo East Africa at Twaweza

Lenana Rd, ACS Plaza 3rd Floor,
P.O Box 19875 00200 Nairobi, Kenya

T: +254 20 3861372/3/4

E: info@uwezo.net

www.uwezo.net