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Promoting critical knowledge, skills and qualifications for sustainable development in Africa: How to design and implement an effective response by education and training systems

Sub-theme 1
Common core skills for lifelong learning and sustainable development in Africa

Are our children learning? Assessment of learning outcomes among children in Tanzania, Kenya and Uganda

by Suleman Sumra and John Mugo
UWEZO

Working Document

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Association for the Development of Education in Africa (ADEA)
African Development Bank (AfDB)
Temporary Relocation Agency (ATR)
13 avenue du Ghana
BP 323
1002 Tunis Belvédère
Tunisia
Tel: +216/ 71 10 39 86
Fax: +216/ 71 25 26 69
adea@afdb.org

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Acronyms and abbreviations

GDP Gross Domestic Product

PCR Pupil Class Ratio

PTR Pupil Teacher Ratio

UNESCO United Nations Educational, Scientific and Cultural Organization

UPE Universal Primary Education

1. ABSTRACT

1. This paper attempts to compare learning levels of children in Tanzania, Kenya and Uganda, based on the Uwezo Report titled: *Are Our Children Learning? Numeracy and Literacy Across East Africa.* This report bases on learning assessment of children in reading and comprehension of English (in the 3 countries), reading and comprehension of Kiswahili (In Tanzania and Kenya) and numeracy (in the 3 countries). A total of 145,730 children were assessed in the 3 countries, based on class 2 syllabus for the respective countries. This paper highlights three key findings.

2. Primary enrolment is high, but not universal. Enrolment in lowest in Tanzania, and highest in Uganda. The graph furthermore. In Kenya, a larger proportion of older children attend primary school, boosted by the fact that primary education in Kenya lasts 8 years, against 7 years in Tanzania and Uganda. Further to this, enrolment in primary school is unequal and depends largely on household wealth.

3. Learning levels in literacy and numeracy are low in the three countries. On average, less than a third of children in class 3 have acquired the class 2 competences. Learning levels are highest in Kenya, and lowest in Uganda. Like enrolment, learning levels are shaped by household wealth. Kenya posts the highest inequalities of learning levels across different wealth quintiles, while Tanzania has lowest inequalities.

4. There are large differences in quality among schools. Defining quality by using a set of simple indicators (pupils per teacher, pupils per class, and pupils per toilet) illustrates great variance in quality among the three countries, across districts within countries, and within schools found in the same districts. Schools in Kenya are generally better equipped than schools in Uganda and Tanzania; schools in Uganda are particularly poor. Only a weak association was found between school quality and performance on the Uwezo tests. However, *This should caution those who believe that performance in schools will improve by reducing pupil:teacher or pupil:classroom ratios.*

5. Private school attendance varies greatly in East Africa, with as many as one in four pupils attending private schools in Uganda, to as few as one in 50 in Tanzania. As expected, mostly children from the wealthiest families attended private schools, though in Uganda access was more equally distributed across wealth classes. Children in private schools demonstrate higher learning levels than children in public schools.

6. Gender inequity is often noted across many socio-political spheres. This was not the case for primary education, at least in terms of enrolment or performance in basic literacy and numeracy; boy and girl students functioned almost at par. In Kenya, female students did slightly worse both in enrolment and on the Uwezo tests. For Uganda and Tanzania the results were mixed, and it would be fair to conclude that overall girls and boys performed at par.

2. EXECUTIVE SUMMARY

7. The governments of Tanzania, Kenya and Uganda have over the last decades subscribed to Universal Primary Education (UPE), and have made immense investments in expanding access to primary education. The adoption of free primary education has followed the assumption that this will facilitate enrollment and schooling of all children of eligible age, and that all enrolled children will become literate and numerate.

8. To achieve this end, immense investments to fund primary education have been made. Large amounts of money have been and continue to be invested into primary. For instance, in 2009/10, Tanzania's government allocated 14% of its budget (or 4% of GDP) to primary education alone. Kenya and Uganda spends similarly high amounts, and in each country the budgets for education have risen significantly in absolute terms in the last decade.

9. While evidence exists, on the expansion of enrolment at primary school level, questions have been raised, whether the ultimate end of literacy and numeracy is being achieved. Indeed, many studies have tended to equate schooling to learning, but this is often not the reality. Uwezo East Africa poses the question: *Are Our Children Learning?,* as provocation to governments and citizens to focus on schooling rather than learning.

10. This paper presents findings of the Uwezo Learning Assessment in the three countries. The learning assessment is household based, and targets all children aged 5-16 years in Tanzania, Kenya and Uganda. Children are assessed in literacy (reading and comprehension of English in the 3 countries, and reading and comprehension of Kiswahili in Tanzania and Kenya) and numeracy. The findings in this paper are based on learning assessment of 145,730 children.

11. According to the findings, children in all three countries perform poorly compared to established curriculum levels. Among countries, Kenya's primary schools learn the most. In all three tests- Kiswahili, English and numeracy- Kenya's pupils came out on top, followed by pupils in Uganda. Children in Tanzania have lowest levels even in Kiswahili, a language which children in Tanzania are more exposed to than children in Kenya. While Kenyan children had acquired better numeracy and literacy skills, they did far from well. In Standard 3, roughly two out of three children failed to pass the Uwezo tests for English, Kiswahili and numeracy. These results are cause for concern, as the expectation is that 100% or all children in Standard 3 should be able to satisfactorily complete a Standard 2 test. Only when pupils reached Standard 7 did almost all of them acquire basic Standard 2 numeracy and literacy skills, though in Tanzania half of Standard 7 pupils were still unable to do the Standard 2 English test.

12. Schools in Kenya were found to be of better quality (in terms of pupils per teacher or class, or pupils per toilet) than those in Uganda and Tanzania. However, an important finding given the enormous resources invested in recent years in improving school infrastructure, was that school quality was weakly associated with literacy and numeracy levels. Children in areas with better school infrastructure did not perform better than in lower quality schools or more crowded classrooms.

13. Inequalities are worst in Kenya, as compared to Tanzania and Uganda. Only 74% of children among poorest families were enrolled in Kenya, as compared to 82% in Tanzania and 86% in Uganda. Poor Kenyan children were more likely to attend a low quality school than poor children in Uganda or Tanzania. Poor Kenyan children were more likely not to attend primary school and drop out of school than their Ugandan and Tanzanian peers. Despite this, however, in terms of

learning outcomes, *children from poor families in Kenya stood a better chance of doing well on the Uwezo tests than children from wealthiest households in Tanzania and Uganda*. In Kenya, the percent of children from poor households in Standard 3 passing the numeracy test was 31%, as compared to 28% percent of children from the wealthiest households in Uganda who passed this test. The percent of Kenyan children from the poorest households passing the English test was 19%, compared to 16% of children from the wealthiest households in Tanzania who passed this test.

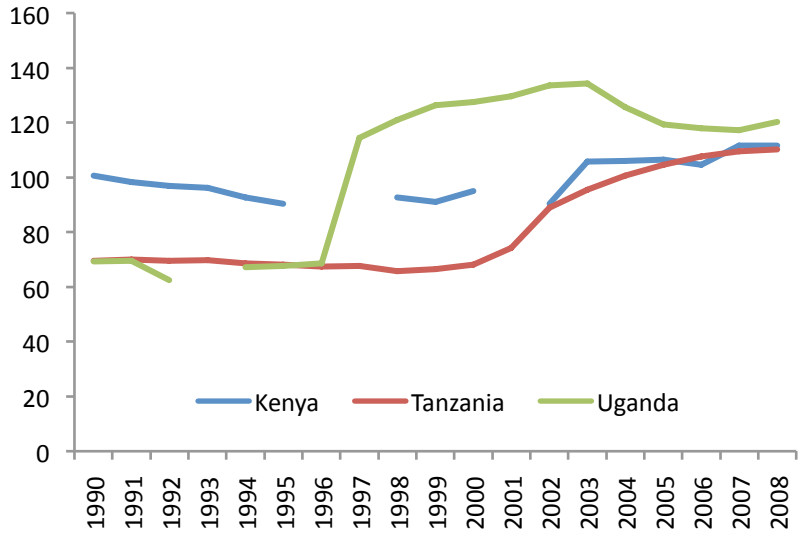
14. Children attending private schools did better than those attending public schools. The study affirmed that mother's education mostly impacted child performance when mothers obtained at least a secondary education. Gender differences in enrolment or school performance were insignificant.

3. INTRODUCTION

15. The governments of Tanzania, Kenya and Uganda have over the last decades subscribed to Universal Primary Education (UPE), and have made immense investments in expanding access to primary education. The adoption of free primary education has followed the assumption that this will facilitate enrollment and schooling of all children of eligible age, and that all enrolled children will become literate and numerate. To achieve this end, immense investments to fund primary education have been made. Large amounts of money have been and continue to be invested into primary. For instance, in 2009/10, Tanzania's government allocated 14% of its budget (or 4% of GDP) to primary education alone. Kenya and Uganda spends similarly high amounts, and in each country the budgets for education have risen significantly in absolute terms in the last decade.

16. In each of the three countries the (re-) introduction of free primary education was followed by significant increases in the number of children going to school. This is illustrated by the gross enrolment ratios shown in Figure 1 (the gross enrolment ratio is the total number of children attending primary school over the age group of children that are expected to attend primary school). In Uganda, where free primary education was reintroduced first in East Africa in 1997, gross enrolment went up from slightly less than 70% in 1997 to over 120% in 2000. In Tanzania, after the abolishment of school fees in 2001, gross enrolment went up from around 70% to about 110%. In Kenya the increase was less pronounced, mostly because enrolment was already high, but here too gross enrolment rose to about 105% following the re-introduction of free primary education in 2003. Impressive progress in enrolment has allowed attention to shift from providing access to focusing on learning. Do all these children who now go to school indeed become numerate and literate? Do the significant investments governments make in primary education yield the return policy makers and parents expect?

Figure 1: Gross enrolment in primary schools 1990-2008



Source of data: UNESCO Institute for Statistics[1]

[1] http://stats.uis.unesco.org

17. The main finding is that performance across the three countries was poor. Very poor in fact. The majority of children in Standard 3, who should all have acquired Standard 2 level literacy and numeracy skills, were unable to complete the Uwezo tests. A comparison of the three countries demonstrates that children in Kenya performed best and those in Tanzania worst. The analysis also shows that in Kenya and Uganda pupils who reached Standard 7 were almost universally competent at *the Standard 2 level*. This was less the case in Tanzania, where only between 50% and 80% of pupils in Standard 7 managed to successfully complete the Standard 2 level Uwezo assessment tests. This report considers other aspects as well. It compares access to primary school across the three countries, and considers differences by school quality and household wealth. The remainder of the report is organized as follows:

In section 4, the resent expansion in enrolment that has taken place in the three countries is discussed. In section 5, the findings of the Uwezo assessment will be discussed. Section 6 the quality of schools will be discussed. In section 7, factors that explain the differences in learning are discussed, and in section 8 conclusions emerging from the study are discussed.

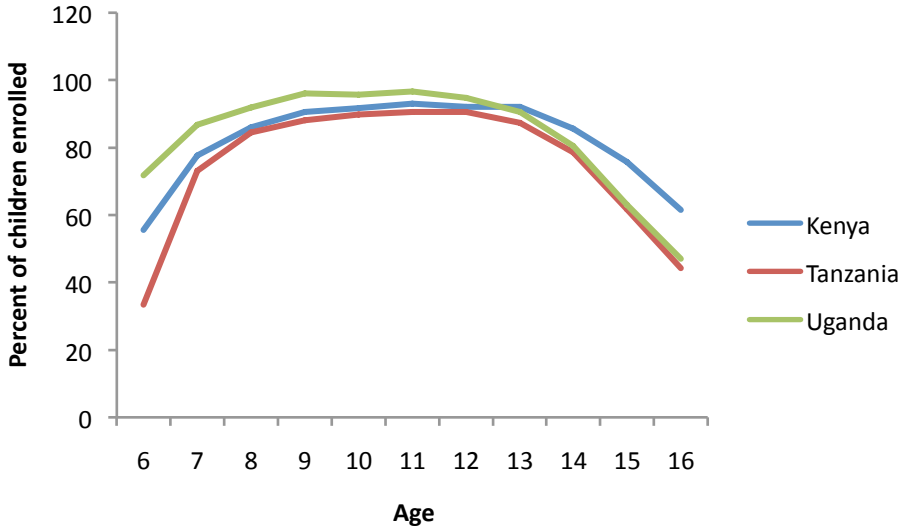
4. ACCESS TO EDUCATION

4.1 Primary School enrolment is high but not universal

18. Figure 2 presents school enrolment by age for the three countries[2]. The graph reflects differences in the education systems among the countries. In Kenya, primary school lasts eight years with children expected to attend school between the ages of six and 13. In Tanzania and Uganda, primary school takes seven years. In Uganda, children start by the age of six and complete when they are 12 while in Tanzania they start when they are seven and complete when they are 13. The figure, however, includes children outside the official age brackets.

19. The graph demonstrates how enrollment is lowest in Tanzania. Irrespective of age, a smaller fraction of children go to school in Tanzania than in the other countries. The graph furthermore illustrates how in Uganda, and relative to Kenya, more children are enrolled in primary school by six years of age. In Kenya, in part because the curriculum lasts an additional year, a larger fraction of older children (those aged 14-16) attend primary school.

Figure 2: Enrolment in primary school by age



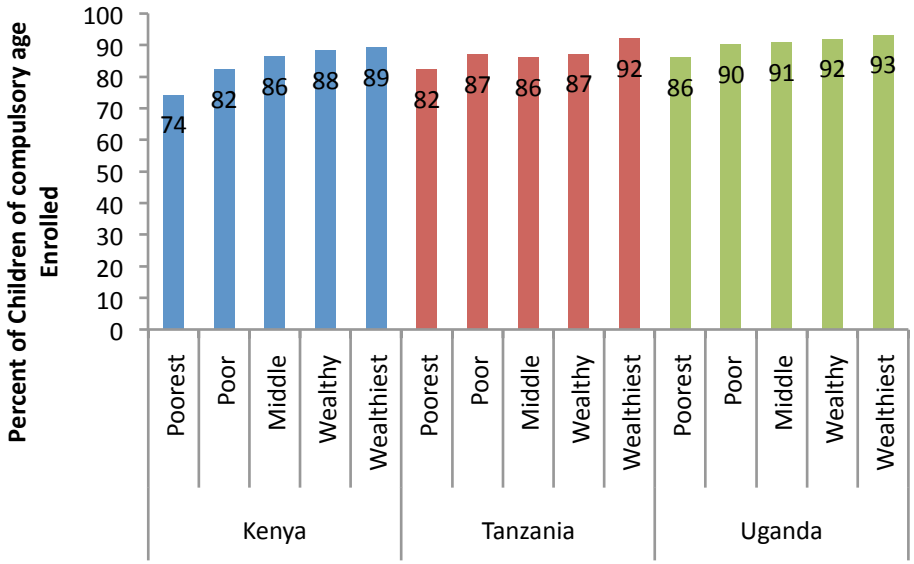
Source of Data: Uwezo East Africa

[2] This section draws upon questions asking parents about school enrolment. As a consequence we use the term "school enrolment", even though it is plausible that parents understood the question as one about attendance. The latter is borne out by the fact enrolment rates calculated from the Uwezo data correspond very closely to attendance rates as reported by DHS surveys (see for instance the stats compiler at www.measuredhs.com).

4.2 Opportunities for education remain unequal and depend on household wealth

20. Figure 3 considers how enrollment within a country varies by wealth of the child's household. Five wealth categories (quintiles) are distinguised: very poor, poor, those in the middle, wealthy and very wealthy with each quintile comprising 20% of households. The wealth quintiles were constructed using country specific data, implying that it is possible that poor households in Kenya are better off than those in the middle quintile in Tanzania. This figure restricts itself to enrollment of children within the official school going age in each country. Enrollment rates are lowest in Kenya (around 84%) and highest in Uganda (around 90%). The graph furthermore illustrates that children from very poor households are least likely to be enrolled. These difference are more distinct in Kenya and and less so in Uganda and Tanzania.

Figure 3: Enrolment of children of compulsory school going age(*) by wealth quintile



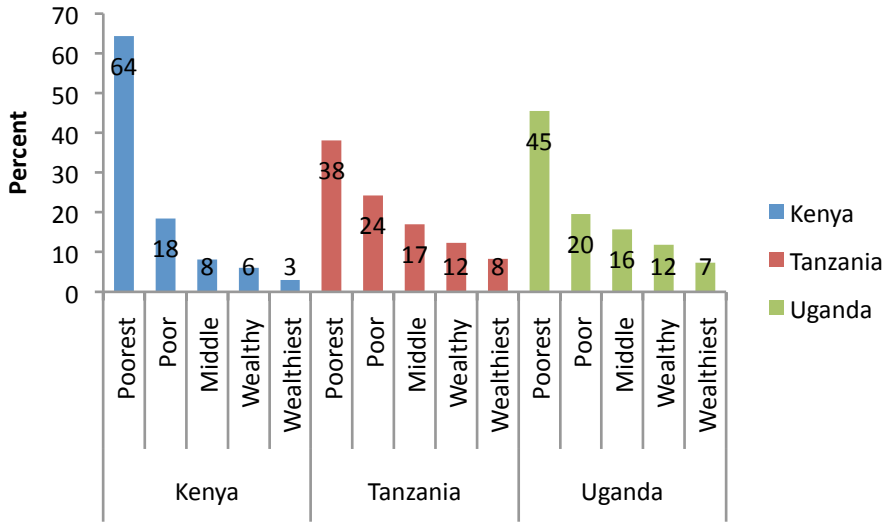
(*) In Kenya compulsary school going age is 6-13; in Tanzania 7-13 and Uganda 6-12.

Source of data: Uwezo East Africa

21. Another way to highlight the plight of children from very poor households is by considering children who never attended primary school. As Figure 4 makes clear, children from the poorest wealth quintile are seriously disadvanataged. In Kenya 64% of children aged 6-16 years who never enrolled are from the poorest wealth quintile while in Uganda and Tanzania it stands at 45% and 38% respectively.[3]

[3] For Tanzania the age range is 5-16.

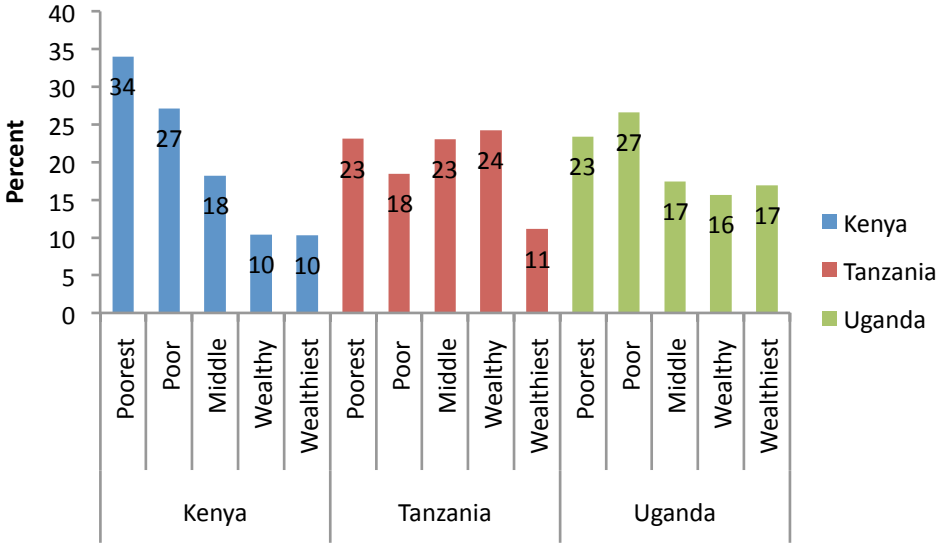
Figure 4: Percent of children aged 5-16 who never attended primary school, by wealth quintile



Source of data: Uwezo

22. As is the case with non-enrollment, drop out rates are higher for children from poor and very poor households, though differences are smaller than for non-enrollment. Among those who dropped out of school, 61% are from poor or very poor households in Kenya compared with 50% and 41% respectively in Uganda and Tanzania.

Figure 5: Children aged 5 to 16 who dropped out of school, by wealth quintile



Source of data: Uwezo East Africa

5. LEARNING COMPETENCES

23. The main objective of the Uwezo test was to assess literacy and numeracy competency. As the tests reflect what pupils should have mastered by the end of Standard 2, all children in Standard 3 and above should be capable of achieving the highest levels of a Standard 2 test. As will be demonstrated in this section, this is not the case. Even amongst children who have advanced to Standard 7, many have not acquired Standard 2 numeracy and literacy skills.

24. Uwezo, in the three countries of East Africa, carried out a large scale scale to find out the lietarcy and numeracy competencies of children between the ages of 5 and 17. The survey covered 38 distircts in Tanzania, 70 in Kenya and 27 districts in Uganda. Similar processes were used to identify villages and households for survey. In all three countrie national bureaus of statistics were consulted to arrive at a sample. Each country used ennumeration areas (EAs) as unit of sampling. In each district 30 EAs were identified, using Proportion to Population Sampling (PPS). A list of all the households residing within an EA was prepared of which 20 households were selected randomly. In each household, all the children between the ages of 5 and 16 were assessed.

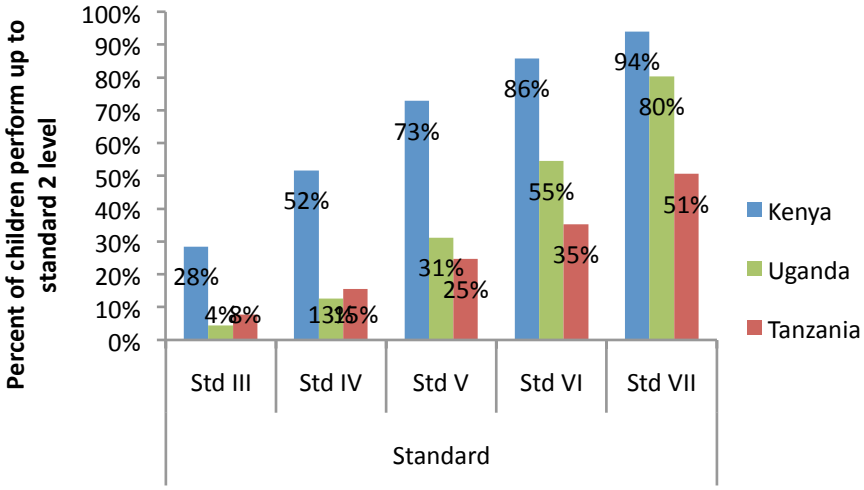
25. In all, 145,730 children were assessed; 42,033 in Tanzania, 68,945 in Kenya and 34, 752 in Uganda.

5.1 Learning Levels in Kiswahili, English and Numeracy

26. Figure 6 presents performance on the English test for the three countries while distinguishing between different grades. The Figure demonstrates how in each of the countries few children in Standard 3 achieve Standard 2 level competency in the English literacy test. In Kenya only 28% of pupils in Standard 3 completed the test succesfully, meaning they are able to read the story with ease. In Uganda and Tanzania pass rates were worse and stood at 4% and 8% respectively. Children in higher grades progressively do better on the Uwezo tests, as should be expected. In Kenya 94% of children in Standard 7 possessed Standard 2 level competencies in reading a story in English. Competency improved with the grade level in Uganda and Tanania as well. Irrespective of standard, the percent of children in Kenya who were at the highest level is higher than that of their peers in Uganda and Tanzania. In Tanzania results were particularly discouraging; only 51% of children in Standard 7 passed the Standard 2 test.

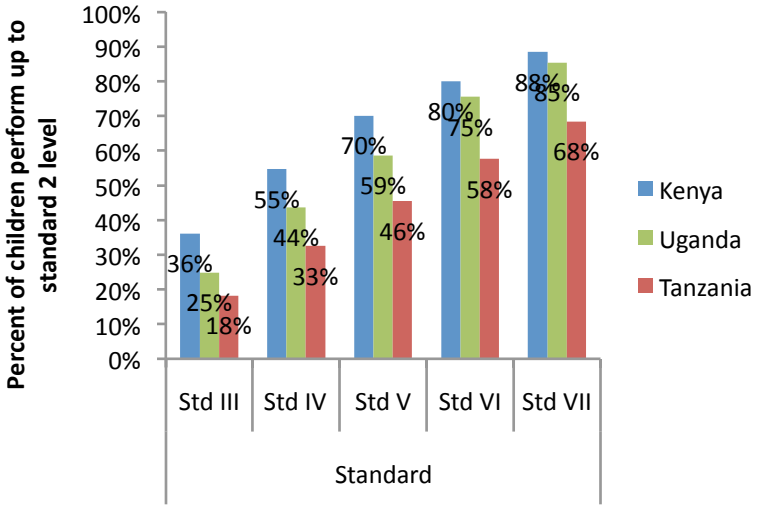
27. Over time the gap between Kenya and Uganda in the percent of children who have acquired Standard 2 level competencies gradually closes. Whereas in Standard 4 the difference in pass rate is 39%, by Standard 7 the difference closes to 14%. For Kenya and Tanzania this does not hold and almost twice as many children in Kenya passed the English test in Standard 7 as in Tanzania.

Figure 6: Performance on Uwezo English test, by standard



For numeracy the pattern is comparable to that for English, with children in Kenya doing better (but far from well) compared with those in Uganda and Tanzania. Tanzania is again the worst performer. Like in English, childrens' abilities improve with standard and once they reach Standard 7 most are numerate and posses competencies expected by the end of Standard 2. But even in Kenya, the country with the best performance, 12% of children in Standard 7 failed to reach the Standard 2 level. In Uganda, 15% and in Tanzania a disturbing 32% of children in Standard 7 failed to perform numeracy tasks expected at the Standard 2 level.

Figure 7: Performance on Uwezo numeracy test, by standard

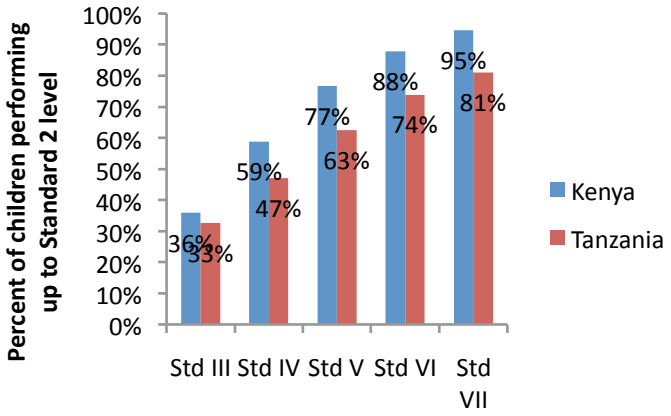


Source of data: Uwezo East Africa

28. Compared to English literacy, the gap in performance on the numeracy test between Tanzania on the one hand and Kenya and Uganda on the other, is smaller. Possibly, though this is a speculation, the larger gap for English than for numeracy reflects that children in Kenya and Uganda live in environments where English is more widely spoken. As a consequence they have an advantage over Tanzanian children who outside school are rarely exposed to English and whose teachers also have little experience speaking English. The gap in numeracy test scores demonstrates however that this is not the only explantion for the poorer performance of children in Tanzania. As the performance on both tests is worse in Tanzania, it seems highly plausible that children in Tanzania learn less while in school than their peers in Kenya and Uganda.

    This conclusion is supported by the performance on the Kiswahili test. This test was conducted only in Kenya and Tanzania. The earlier pattern of poor performance by Standard 3 pupils and gradual catch-up in later standards is repeated. Children in Kenya perform better than children in Tanzania. The gap in performance between Tanzania and Kenya for Kiswahili is smaller than that for English and numeracy (this is likely a reflection of the fact that Kiswahili is more widely spoken in Tanzania than in Kenya), but it is still there. So even on a test which children in Tanzania ought to have an advantage over children in Kenya, Tanzanian children performed worse. Figure 8 gives further details on performance in Kiswahili, by grade level, in Kenya and Tanzania.

Figure 8: Performance on Uwezo Kiswahili test, by standard

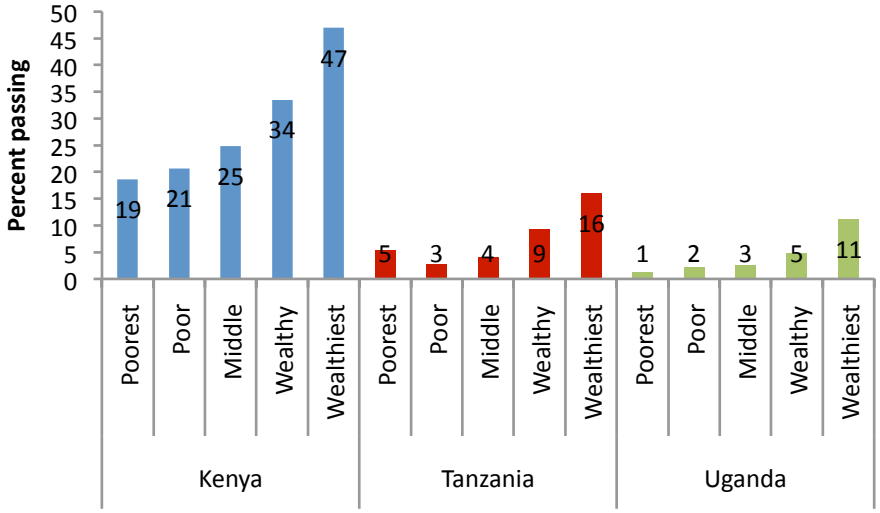


Source of data: Uwezo East Africa

5.2 Differences in Learning Levels by Household Wealth

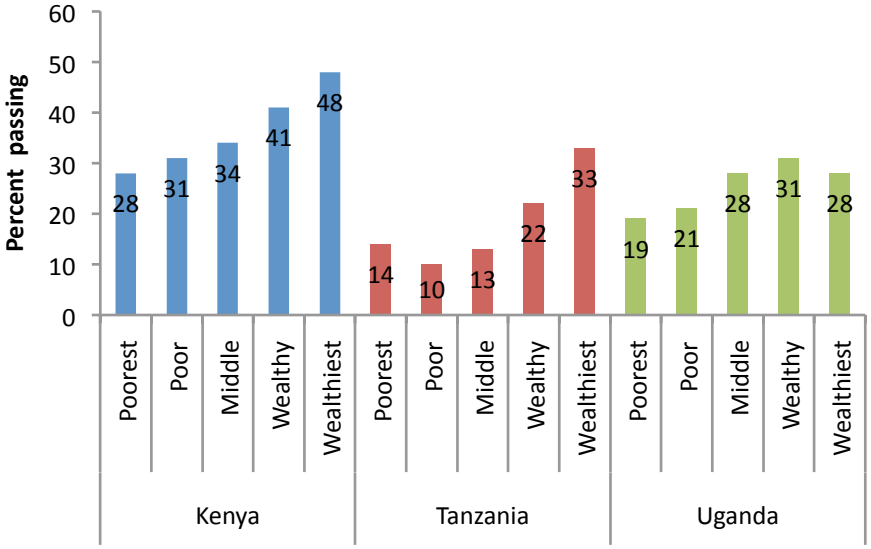
29. Household characteristics also matter with regards to performance. Figures 9 and 10 below demonstrate how differences in household wealth are associated with performance. Children from the wealthiest households did significantly better on the Uwezo tests than children from less wealthier households. In Kenya for instance, almost half (47%) of the Standard 3 children from households in the wealthiest quintile attain Standard 2 English literacy skills, as opposed to only 19% of children from the poorest households. Likewise, 48% of children from the wealthiest households in Kenya passed the numeracy test, as opposed to only 28% of children from the poorest households.

Figure 9: Performance of Standard 3 children on Uwezo English test, by wealth quintile and country



Source of data: Uwezo East Africa

Figure 10: Performance of Standard 3 children on Uwezo numeracy test, by wealth quintile and country



Source of data: Uwezo East Africa

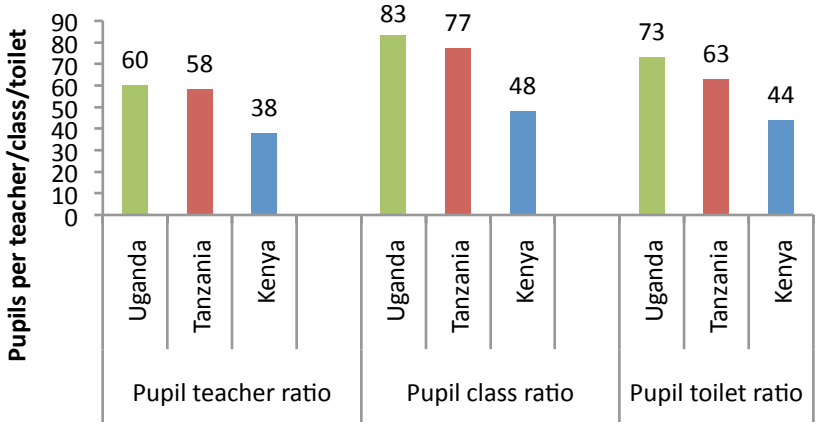
30. Children from the poorest households in Kenya were much less likely to pass the numeracy and English tests than children from wealthier Kenyan households. The chances of success are still higher if a child comes from a very poor Kenyan household than if they come from a very wealthy Ugandan or Tanzanian household. For instance, 19% of children from a household in the poorest wealth quintile in Kenya passed the English test, compared to 16% and 11% of children from the wealthiest households in Uganda and Tanzania. For numeracy, similar results hold, except that children from the poorest quintile in Kenya perform at par with their peers from the wealthiest of households in Uganda and Tanzania.

6. QUALITY OF SCHOOLS

6.1 Differences in Learning Levels by Household Wealth

31. One explanation for differences in district performance may be that the quality of schools or quality of teaching differs. Whereas the Uwezo survey does not contain information about the quality of teaching, information from the school questionnaires allow basic observations on quality of schools. For each of the three countries the Uwezo school questionnaire collected information from which number of pupils per teacher, pupils per class, and pupils per toilet can be calculated.
Country comparisons show that Kenyan schools have smaller pupil:teacher ratios (PTR), pupil:class ratios (PCR), and fewer pupils per toilets than schools in Uganda and Tanzania. The difference with Tanzania and Uganda is quite large. For instance, in Tanzania there were 60 pupils per teacher, in Kenya 38. In Uganda there were 83 pupils per class, in Kenya 48. Overall, Kenya's school quality indicators are closer to existing norms on PTR and PCR than those for Uganda and Tanzania.

Figure 11: School quality indicators for Kenya, Uganda and Tanzania



Source of data: Uwezo

32. Within countries large differences exist. This can be seen from Table 6 presenting a district ranking of school quality based on the three ratios. The overall ranking is produced after ranking the districts on each of the three indicators separately and assigning districts the corresponding rank number. The summation of the three rank numbers gives the overall rank, according to which districts are ranked from highest to lowest in Table 1.
The Table shows that district averages vary considerably: from as low as 25 pupils per teacher in Imenti South district, Kenya to as high as 91 per teacher in Muleba district, Tanzania. Similarly pupil per class ratios varies from as low as 23 in again Imenti South, to as high as 173 in Buliisa district, Uganda. The pupils per toilet ratio exhibit similar variations, from a low of 14 pupils per toilet in Nyeri South, Kenya to a high of 110 pupils per toilet in Kamuli, Uganda. These are district averages implying that they mask differences between schools. For individual schools and classes the variation that is found is much higher. For instance, in the Kenya Uwezo data set there were schools with PTR as low as 10 to one, but also schools with over 200 pupils per teacher.

33. Another observation that can be inferred from the district ranking is that Kenyan districts top the ranking, while Tanzanian and Ugandan districts, and just a few Kenyan districts, are found at the bottom of the ranking. In the East African Uwezo ranking, Kenyan districts occupy the first 24 positions. The first non-Kenyan district is from Tanzania in the 25th position, while the first Ugandan district is only found in 44th place.

Table 1: Best and worst performing districts on a combined pupil:teacher ratio, pupil per class and pupil per toilet rating

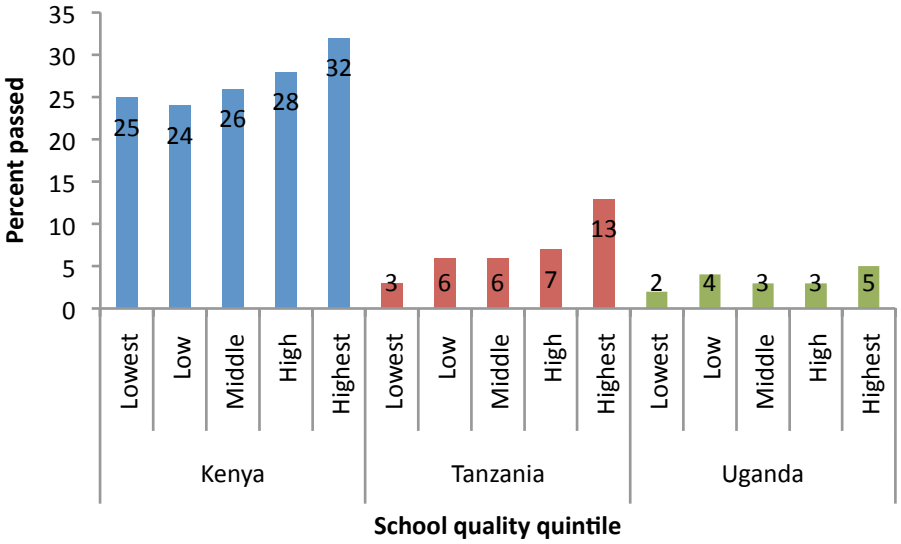
Rank	District name	Pupils per teacher	Pupils per class	Pupil per toilet
Top 10 districts				
1	Imenti South	25	23	14
2	Mbeere	27	28	17
3	Meru south	28	25	17
4	Imenti north	28	29	23
5	Nyeri South	33	28	14
6	Kericho	28	35	30
7	Nyandarua North	35	33	17
8	Kikuyu	35	31	25
9	Tharaka	29	29	39
10	Wareng	31	35	31
Bottom 10 districts				
126	Muleba	91	83	79
127	Kamuli	66	86	110
128	Mayuge	64	99	100
129	Urambo	86	110	69
130	Amuru	70	117	76
131	Amuria	69	100	89
132	Budaka	69	101	87
133	Geita	83	108	92
134	Buliisa	67	173	112
135	Ilemela	87	140	107

(*) Note: Kenyan districts in blue, Ugandan districts in green, Tanzanian districts in red.
Source of data: Uwezo East Africa

34. A school quality index can be constructed using the same approach as was used to construct a wealth index for households.[4] Five school quality quintiles, each comprising 20% of the schools visited, were established per country. The quintiles are not strictly comparable across the three countries as different variables are used to construct each country index. Within countries one notes that performance of Standard 3 pupils on the Uwezo tests do not vary much with school quality quintile. Only in Kenya and in Tanzania is performance better on the English test for children attending a school in the top quality quintile.

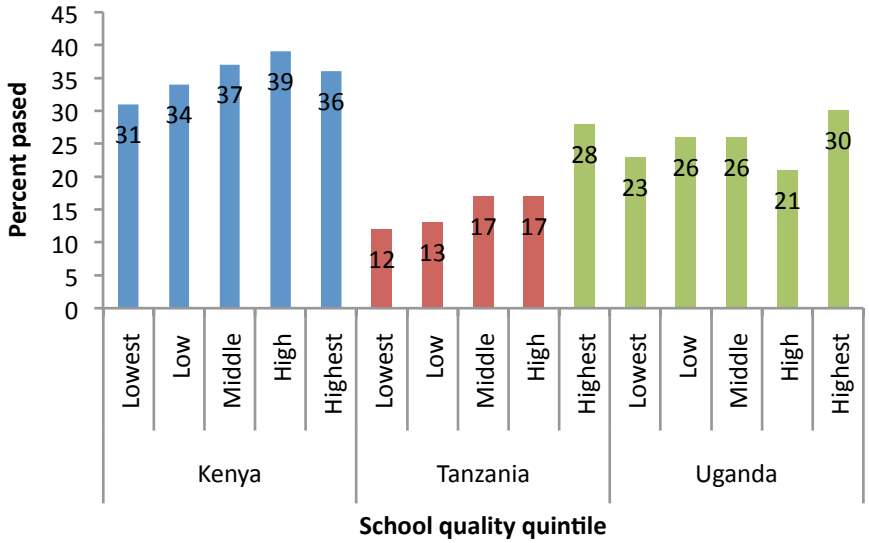
[4] See for instance Filmer D and Pritchett LH. *Estimating wealth effect without expenditure data – or tears: an application to educational enrollments in states of India. Demography 2001; 38:115-32.*

Figure 12: Standard 3 children with Standard 2 English literacy skills, by school quality quintile



Source of data: Uwezo East Africa

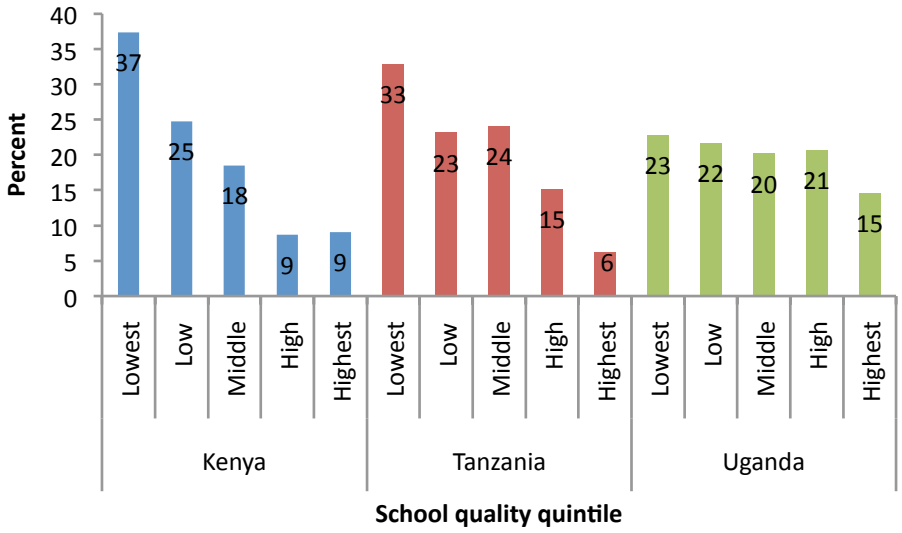
Figure 13: Standard 3 children with Standard 2 numeracy skills, by school quality quintile



Source of data: Uwezo East Africa

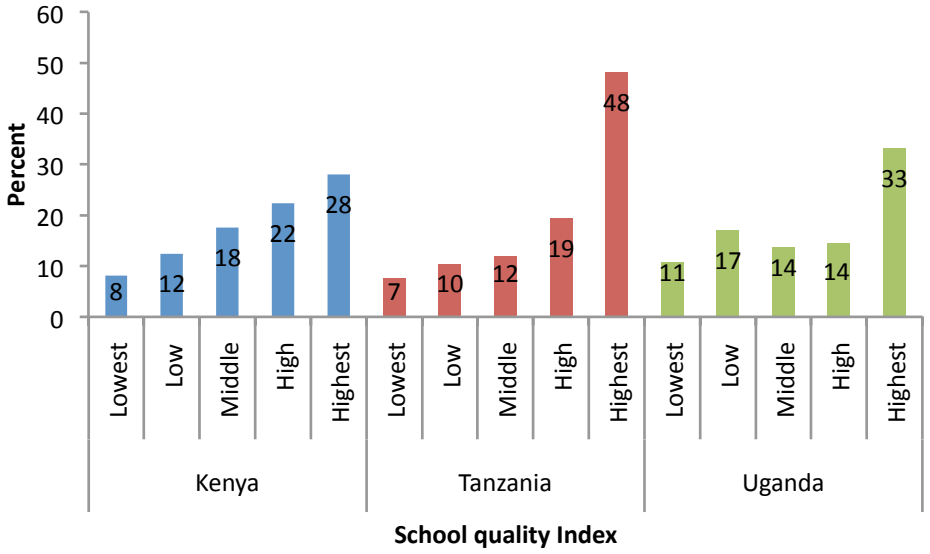
35. Figures 14 and 15 present the quality of schools attended by children from the bottom and top wealth quintiles. One notes that, generally, children from poor families attend worse schools, while children from better off families attend higher quality schools. In Kenya, differences are most pronounced and 37% of children from the poorest 20% of families attend the worst schools, while only 9% attend the best schools. In Uganda, the distribution is most equal, with Tanzania taking an intermediate position.

Figure 14: Quality of schools attended by children from the poorest wealth quintile



Source of data: Uwezo East Africa

Figure 15: Quality of schools attended by children from the top wealth quintile



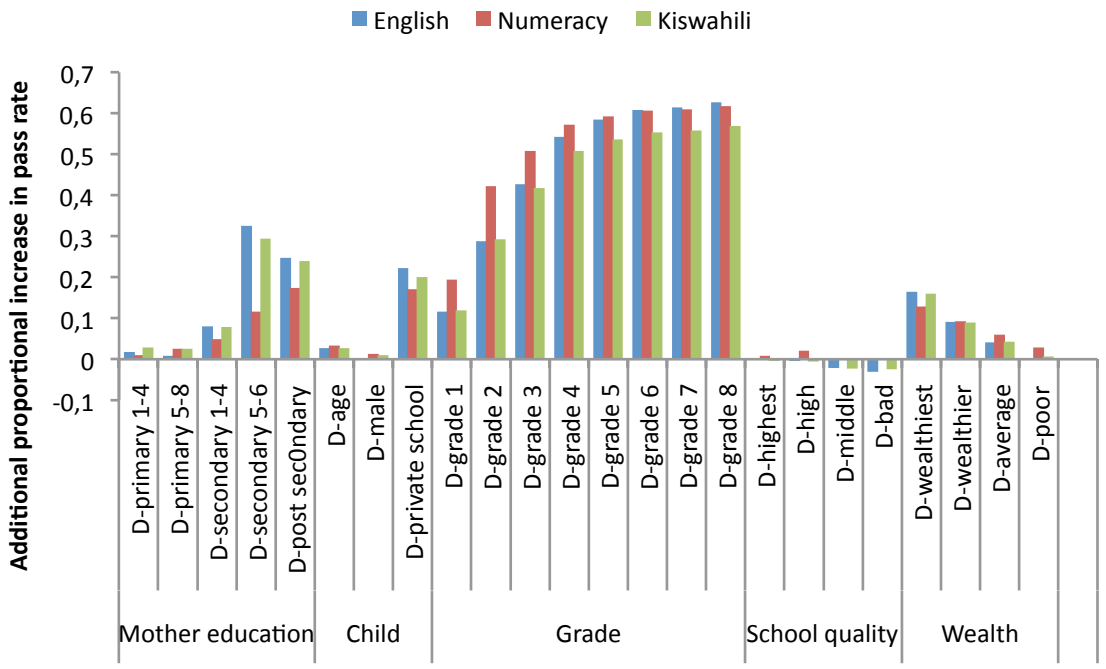
Source of data: Uwezo East Africa

7. FACTORS THAT EXPLAIN LEARNING LEVELS

36. The paper thus far demonstrates that basic numeracy and literacy skills that are closely associated with the grade level a child is in, if they originate from a wealthy household. Basic numeracy and literacy skills are not as closely tied with school quality and gender. Since students that attend lower quality schools are also more likely to face other challenges such as low household income, it is difficult to untangle the effect of school quality on achievement. In this section we explore the associations with school performance in combination and include some other factors that may also be associated with performance such as the level of mother's education or a child's age. Through regression analysis we attempt to estimate the individual impact of each of these factors on performance, while holding constant all other factors.
    We present the results by country as the Uwezo data sets allow the incorporation of different variables in different countries. In Uganda for instance, questions about mother's education are not asked, while they are asked in Tanzania and Kenya.

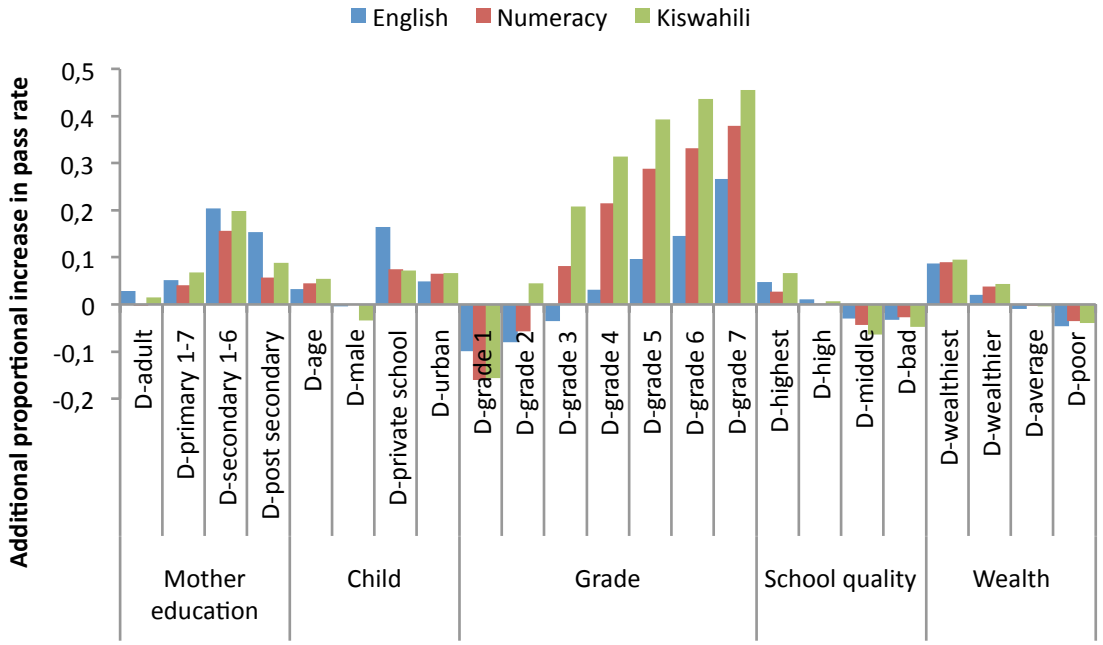
37. Across the three countries and for the three different tests, very similar patterns emerge. The grade level of a child is by far the most determining factor of the likelihood of a child having acquired basic numeracy and literacy skills. Mother's education also has a large effect on skill attainment but, and this is noteworthy, mostly for mothers with secondary education and higher. When mothers have primary education or less, the positive impact on their child's school performance is limited. Household wealth and attending a private school have considerable positive impact on school performance. Gender and school quality variables have very limited impact.

Figure 16: Marginal effects of different factors on Uwezo test performance: Kenya



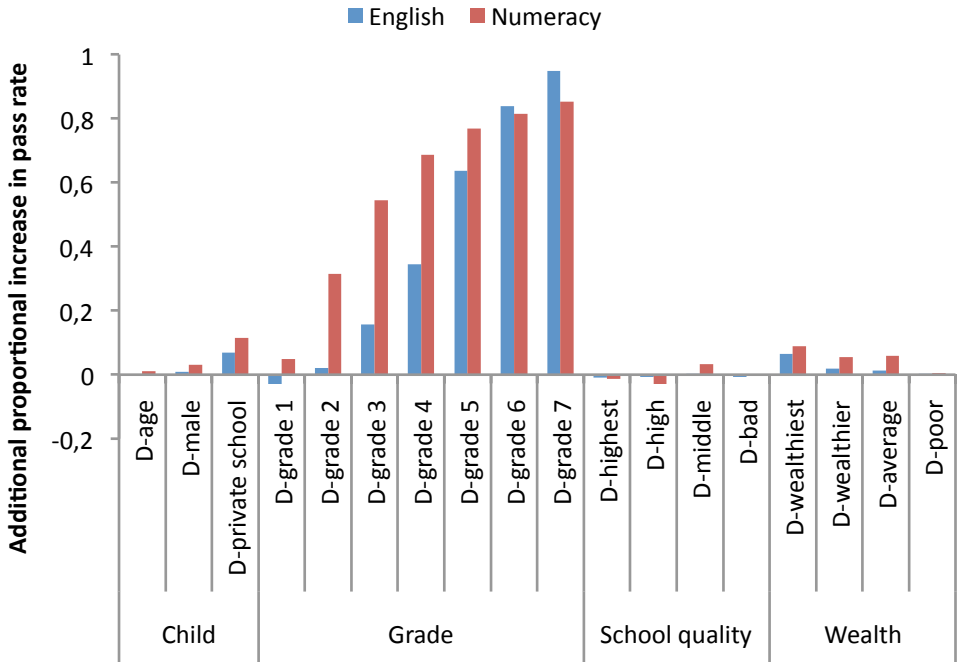
Source of data: Uwezo East Africa

Figure 17: Marginal effects of different factors on Uwezo test performance: Tanzania



Source of data: Uwezo East Africa

Figure 18: Marginal effects of different factors on Uwezo test performance: Uganda



Source of data: Uwezo East Africa

8. CONCLUSION

38. This report assessed numeracy and literacy competency of tens of thousands of children of primary school going age (between 6 and 16) in Kenya, Tanzania and Uganda using the Uwezo tests administered in 2009/2010. According to the findings, children in Kenya's primary schools learn the most. In all three tests- Kiswahili, English and numeracy- Kenya's pupils came out on top, followed by pupils in Uganda. Children in Tanzania performed worst even in the Kiswahili test, a language which children in Tanzania are more exposed to than children in Kenya.

39. While Kenyan children have acquired better numeracy and literacy skills, they do far from well. In Standard 3, roughly two out of three children failed to reach the highest level of the Uwezo tests for English, Kiswahili and numeracy. These are grave results, as the expectation is that 100%, or close to 100%, of children in Standard 3 should be able to satisfactorily complete a Standard 2 test. Only when pupils reached Standard 7 did almost all of them acquire basic Standard 2 numeracy and literacy skills.

40. Schools in Kenya were found to be of better quality (in terms of pupils per teacher or class, or in terms of pupils per toilet) than those in Uganda and Tanzania. Kenya is also the country in which inequalities were largest. Among the poorest families, fewer children of compulsary school going age were enrolled in primary school in Kenya (74%) than in Tanzania (82%) and Uganda (86%). Poor Kenyan children were more likely to attend a low quality school than poor children in Uganda or Tanzania. Poor Kenyan children were more likely not to attend primary school at all and, when attending, they were more likely to drop out of school than their Ugandan and Tanzanian peers.

41. Despite all this, and in terms of learning outcomes, children from poor families in Kenya stood a better chance of passing the Uwezo tests than children from wealthy households in Tanzania or Uganda. In Kenya the percent of children from poor households in Standard 3 passing the numeracy test was 31%, in Uganda 28% percent of children from the wealthiest of households passed this test. The percent of Kenyan children from the poorest households passing the English test was 19%, in Tanzania 16% of children from the wealthiest households passed this test.

42. In Uganda, children performed particularly poorly in lower standards but in higher standards they achieved Standard 2 skill levels. By the time they reached Standard 7, performance was almost at par with performance in Kenya. This is not the case for children in Tanzania whose poor performance in lower standards was only partially made up. As a consequence, only 51% of Tanzanian children in Standard 7 passed the Uwezo English test and only 68% in Standard 7 passed the numeracy test.

43. Reflecting on these results one cannot but note the enormous challenge East African governments, teachers and parents face in making sure that children acquire basic numeracy and literacy skills. The situation in Tanzania is most acute, but results for Kenya and Uganda provide little comfort too. Renewed efforts are urgently needed to address non-attendence and drop out rates. In addition much more attention needs to be given to the fact that children should not only go to school, they should also learn while in school.

44. Bad results inevitably lead to the question, what next? The Uwezo results offer limited guidance on what should be done, though some insights have been gained. First, the fact that pupil:teacher and pupil:classroom ratios are only weakly correlated with learning is valuable information, as it puts into question whether additional inputs and money will offer a solution to the existing crisis. This seems like a good time to focus on the quality of teaching and teacher incentives and motivation. After all, one explanation why children who attend school learn so remarkably little may be that teacher incentives are weak, with teachers often having high rates of absence. Evidence from Tanzania demonstrates that 23% of teachers are not in school on any given day and when in school, teachers spend half their time outside the classroom. As a consequence children are only taught two hours and four minutes a day, instead of an expected five hours.[5]

45. Differences in performance among districts within each of the three countries, and between public and private schools, suggest that certain schools have 'figured out' how to achieve better results within the existing constraints. Investigating why certain districts, and within districts certain schools, do so much better than others could provide important clues about what matters most for improved learning. A simple and affordable approach could start with identifying which schools do significantly better (or worse) than expected with the resources availed, visiting these schools to identify what might explain their outcomes, and from these visits, derive commonalities.

46. Other approaches can also be followed. A wide range of existing experimental evidence, much of it from Kenya, demonstrates for instance that programs that increased school inputs were largely ineffective. Providing additional textbooks and flipcharts, for example, had no effect on average performance, and reducing class sizes by adding new teachers was similarly ineffective.[6] Interventions that increased student performance were those that changed incentives for teachers in meaningful ways. Paying for teacher attendance or exam scores had mixed results, and giving parents information about school conditions was ineffective. However, a program that enabled schools to hire additional teachers on short term contracts and that gave local school committees authority over these teachers was successful in increasing student achievement. Experimenting with new approaches would be one way to elicit how to improve learning in schools.

47. There is a crisis of learning in schools in Kenya, Tanzania and Uganda. Quick fixes are not possible, given the complexity of the underlying issues. Urgent action is needed to ensure that schools become a source of learning for children, inspiring new generations of active citizens. Only when children grow up as literate and numerate citizens can it be claimed that the billions of shillings invested in primary education is money well spent.

[5] World Bank Service Delivery Indicators: Education and Health Care in Africa, presented at REPOA, March 4, 2011.

[6] "Improving Education in the Developing World: What Have We Learned from Randomized Evaluations?" Michael Kremer and Alaka Holla, November 10, 2008, accessed at http://www.economics.harvard.edu/faculty/kremer/files/Annual_Review_081110%20-%20NO%20TRACK%20CHANGES.pdf.

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