

Uwezo: Monitoring children's competencies in East Africa

Uwezo, meaning 'capability' in Kiswahili, is an initiative in which the competencies of school-aged children in Kenya, Tanzania and Uganda are measured to obtain information that encourages changes in educational policy and practice (Twaweza, 2013; Uwezo, 2009, 2011, 2013c). Uwezo began as a four-year initiative (2009–2013) and it is envisaged that it will run for at least another five-year period (Uwezo, 2011).

Origins and context

Uwezo started in 2009 as an initiative aiming to improve education quality through citizen engagement. Its founders, a group of educators, researchers and leaders from East Africa, were motivated by their concern that, despite increasing public investment in education and the major reforms in the sector, children in the region continued to demonstrate low levels of literacy and numeracy (Twaweza, 2008; Uwezo, 2009).

At Uwezo's foundation is the belief that citizens must be informed and engaged in order to hold their governments accountable and exert pressure for change. Uwezo collects data on children's education levels and provides citizens with the information so they can act.

To achieve its purpose, Uwezo based its methodology on ASER – an education survey developed by Pratham in India (ASER Centre, 2014; GEM Centre, 2014) – but adapted it so it was suitable for use in the East African context. Each year, Uwezo conducts a household-based survey focusing on children's competency levels. This repeated administration allows comparison of results over time. To engage citizens in the data collection process and raise awareness

about education levels, Uwezo recruits partner institutions whose volunteers administer the survey in each village. In addition, parents must be present during the assessment and receive instant feedback on their children's competencies.

Currently, Uwezo is housed and managed by Twaweza, a citizen-centred organisation in East Africa that is supported by the Humanist Institute for Cooperation (Hivos) (Twaweza, 2008; Uwezo, 2011).

Uwezo's regional office monitors the implementation of the program in Kenya, Tanzania and Uganda to ensure that they comply with the articulated budget and quality standards. The regional office also organises management meetings with the country heads and is in charge of producing the regional report. Until 2012, within each country, a host organisation had the legal and implementation responsibility of the survey. After 2012, all country activities came together under the supervision of Twaweza, but the separate country offices remain, and they are responsible for producing their national reports (S. Ruto, personal communication, 31 August 2014; Uwezo, 2009, 2011, 2013c).

The work of Uwezo and Twaweza is funded by a consortium of donors including the William and Flora Hewlett Foundation, Britain's Department for International Development (DFID), the Swedish International Development Agency (SIDA), Hivos, the World Bank, and the Children's Investment Fund Foundation (Uwezo, 2013c).

The Uwezo initiative overall is guided by Twaweza's Advisory Board, which is composed of academics and practitioners from the

region and further abroad, including the director of the ASER survey in India. In each of Kenya, Tanzania and Uganda, there is also a Uwezo Advisory Committee, which includes government representatives (from the Ministry of Education and Bureau of Statistics), country-based donors, the education coalitions, and a communications expert.

Purpose of the assessment

Uwezo’s goal is to contribute to the improvement of the quality of education. Annual household surveys are implemented to assess the basic literacy and numeracy competencies of school-age children across Kenya, Tanzania, and Uganda. Uwezo believes that this information will raise public awareness about education levels, and will trigger actions aiming to improve them.

Measurement objectives

Cognitive domains

Uwezo’s literacy and numeracy assessments are aligned to the Grade 2 curriculum in each country (Hoogeveen & Andrew, 2011; Uwezo, 2012a, 2013c). Due to different emphases in the national curricula, the Uwezo tests are similar but not the same across the three countries.

Grade 2 was chosen because, according to international standards, after two years of schooling a student is expected to have acquired the basic competencies in literacy and numeracy that are essential for learning in all other subjects in later years (Hoogeveen & Andrew, 2011).

In the three countries, the literacy test is administered in English; in Kenya and Tanzania an additional literacy test is also administered in Kiswahili. In Uwezo’s third and fourth round (2012 and 2013), Uganda administered additional literacy tests in four local languages.¹

In the literacy test children are asked to recognise letters/syllables, read words, read a paragraph, and read a short story and answer questions about it. In the numeracy test children are asked to recognise numbers and count, and to perform basic calculations. Table 1 and table 2 present the specific literacy and numeracy tasks in each country.

To prevent a child in the household from overhearing the responses of another child, four different test forms of equivalent difficulty are used to assess each cognitive domain. For the literacy assessment, each assessed language also has four different test forms of equivalent difficulty (Uwezo-Tanzania, 2013).

Each year, countries may include in the assessment one additional task of their choice. To give some examples, bonus tasks have addressed telling the time (Uganda, 2011), knowledge of public personalities (Tanzania, 2011), knowledge of names of parts of the body (Kenya, 2011), knowledge of the national flag (Kenya and Tanzania, 2012), and knowledge of the names of animals (Tanzania 2013).

¹ Ateso, Leblango, Luganda and Runyoro.

Table 1: Tasks in the Uwezo survey’s literacy tool, ordered by difficulty level

Task	Description
Letter/syllable recognition	From a set of 10 different letters/syllable, select any five of them and read them aloud
Read words	From a set of 10 common words, select any five of them and read them aloud
Read a paragraph	From two paragraphs, consisting of four sentences each, select any of them and read the text aloud
Read a short story	Read a text aloud that consist of six to 14 sentences
Comprehend a short story	Answer two questions about the text that was read

Table 2: Tasks in the Uwezo survey's numeracy tool, ordered by difficulty level

Task	Description
Count	From a set of eight different numbers of objects (numbers from 1 to 9), select any five of them and indicate the number of objects aloud ^a
Recognise numbers from 10 to 99	From a set of eight different two-digit numbers, select any five of them and say them aloud.
Greater than	From a set of eight different pairs of two-digit numbers, select any five pairs and say aloud the higher number in each pair ^b
Addition	From a set of eight different two-digit additions, select any three of them and calculate the answers ^c
Subtraction	From a set of eight different two-digit subtractions, select any three of them and calculate the answers ^d
Multiplication	From a set of eight different one-digit by one-digit multiplications, select any three of them and calculate the answers ^e
Division	From a set of eight different one-digit/two-digit by one-digit divisions, select any three of them and calculate the answers ^f

a In Kenya, the child is shown numbers 1 to 9 and asked to match each number with the number of objects shown in each drawing.

b Only assessed in Uganda.

c In Tanzania this task includes some additions that require carrying.

d In Tanzania this task includes some subtractions that require borrowing

e In Tanzania, there are some two-digit by one-digit multiplications in this task.

f Not assessed in Tanzania.

Source: Compiled by the author based on the test tools from the 2013 round of Uwezo (obtained from the Uwezo country offices)

Contextual information

In addition to the cognitive information, Uwezo's volunteers collect data about the participant children, their households and villages. One government primary school in each village is also visited to collect information about schooling conditions.

Contextual information collected in Uwezo tends to be similar across all countries; the differences are due to the inclusion of some items relevant only for local purposes.

For each child within the target population living in the household, volunteers record information about the child's gender, the education level of the child's parents, and whether the child attends school. If the child is attending school, volunteers also enquire about the type of school attended (government/private) and the child's grade level,

whether the child attends the surveyed school, and whether the child is attending private tuition.

In each surveyed household, the head of the household is interviewed to collect information about home facilities and possessions (such as the main source of lighting, possession of a television, and availability of potable water), type of house construction material, main language spoken in the household, parents' involvement in their children's learning (such as frequency of visiting the school in which children are enrolled), and awareness about Uwezo.

Village data are obtained either by interviewing a representative of the local council or a group of community members, or through volunteer's observation. Information collected about the village may include number of inhabitants, available

transportation, main economic activities, presence of schools, education interventions currently in place, sources of potable water, electricity facilities and health facilities. The person who supplies the village information is also asked about his or her knowledge of Uwezo.

During their visit to a public school, volunteers interview the teacher in charge to collect information about school facilities, enrolment and number of streams, teachers' qualifications, grants received by the school, and student and teacher absenteeism. Volunteers also perform a head count in each class to get information about attendance. In addition, in each school a Grade 2 classroom is observed to record information about the availability of classroom teaching and learning resources. In some years background data about the Grade 2 teacher have also been collected.

Target population and sampling methodology

Uwezo surveys target school-aged children from six to 16 years old, irrespective of whether they are attending school or not.²

The survey is administered to a sample that aims to be representative at the national and district level. The sample is selected using a two-step sampling process: Enumeration Areas (EAs) are selected from districts, and then households are selected from the selected EAs.

An EA is a group of households in a determined geographical area. In Kenya, in a rural area an EA corresponds to a group of about 50 households, and in an urban area it corresponds to about 150 households (Uwezo, 2013a). In Uganda, an EA may be a complete local council, a part of it or even a larger area (Uwezo, 2013b).

To date, four Uwezo surveys have been implemented (in 2009/2010, 2011, 2012 and 2013) and countries have made an effort to increase the number of participating districts each year. In the

² The target age range is 7–16 years old in Tanzania. (The lower bound is linked to the age at which children start school.) Kenya also collects information on children aged 3 to 5 years but does not assess them.

third round (2012), Kenya tested in 99 per cent of its districts, Tanzania tested in 95 per cent of its districts, and Uganda tested in all of its districts. This means that in 2012 the assessment reached more than 340 000 children across the three countries (Uwezo, 2014a).³

Within a selected district, 30 EAs are visited in total. There is a rotating panel of EAs that mimics the rotating panel in ASER, so that a set of ten EAs spends three years on the panel and then is replaced. In any year the panel is made up of ten EAs that joined the panel two years previously, ten EAs that joined the panel one year previously, and ten newly sampled EAs. The newly sampled EAs are sampled with probability proportional to size.

Within each EA, 20 households are selected following a systematic sampling approach, which involves selecting the participant households from a household listing and then sending volunteers the list of households to survey in their EAs (Uwezo, 2012a).

Within each selected household, all children in the target age range are tested, regardless of whether they attend school or not.

In each EA, one public primary school is visited to collect school-based data. The Uwezo standards manual states that when there is more than one public primary school with Grades 1–8, the largest school should be selected, and if the multiple eligible schools are of similar size, then one should be selected randomly (Uwezo, 2012b).

Assessment administration

The survey is administered by volunteers trained using a cascade training model: master trainers are first trained by personnel from the Uwezo regional office, they then train the district coordinators who in turn train the volunteers. Volunteers come from partner institutions recruited by the Uwezo country offices. These partner institutions do not have to

³ In Tanzania participation rates can be lower than 100% because Uwezo is not granted permission to undertake its survey in some districts. Final participation rates can also be lower than 100% because district-level data are removed from the final database because too few children were tested or because of integrity issues (Ruto, S., personal communication, 31 August 2014).

be focussed on education in their own work, but they must have an interest in improving education. They must also have a belief in citizen agency and a local presence in the districts in which they will be administering Uwezo.

There are two survey manuals, one for the master trainers and another for volunteers. Two volunteers are responsible for surveying each selected EA.

The administration normally starts on a Friday morning. On the first day, volunteers visit the chairperson of the local council or the village chief to collect village information. During the same day, volunteers should visit the public school. During the visit, school data are collected and children are introduced to the volunteers, which facilitates the subsequent household visits. (Uwezo, 2011, 2013a, 2013b).

Household visits are conducted once the village and school information has been collected and outside school times, usually on a Friday evening or Saturday morning. During the household visit the first task for the volunteers is to interview the head of the household to obtain basic information about living conditions. After obtaining consent from parents, the volunteers then proceed with test administration (Uwezo, 2013a, 2013b).

The tests are administered orally, on a one-on-one basis. In Kenya and Tanzania, the tests are administered in a manner similar to adaptive testing, starting with a mid-range difficulty task (that is, reading a paragraph in the literacy test and doing subtraction in the numeracy test) and moving up or down depending on whether or not the child completes the task to a satisfactory standard.⁴ In Uganda the tests start from the easiest task (that is, reading letters/syllables in the literacy test and counting in the numeracy test) and proceeds through the tasks in order of increasing difficulty, terminating when the child cannot successfully complete a task or after the child has attempted the most difficult task.

⁴ This form of administration means that no child is administered the full set of tasks.

In each test, children are categorised according to the highest level attained, and it is assumed that 'children marked at a particular level are also able to complete all previous levels' (Uwezo-Tanzania, 2013, p. 24). For instance, in the literacy test, if a child reads the paragraph correctly but cannot read the story, he or she will be placed in the 'paragraph' category, and even though the easier tasks of recognising and reading letters and words were not administered, it is assumed that he or she would have been able to complete them successfully. Children are considered to have 'passed' the test if they correctly answered all questions they attempted.

After administering the tests, the volunteers provide instant feedback about performance to children and their parents/guardians.

Reporting and communication

Uwezo results are compiled in a regional report and three national reports, and communicated as broadly as possible through mass media and mobile phones (Uwezo, 2011).

As it is expected that all students attending Grade 3 and above correctly answer the entire set of questions in each test, the regional report analyses and compares student performance across countries in terms of 'pass rates' (ie percentages of children correctly answering all attempted questions) (Hoogeveen & Andrew, 2011; Uwezo, 2012a, 2014a).

Comparisons between countries and with previous rounds of Uwezo are based on pass rates per test or a combined pass rate for both tests. Over the years reported pass rates have also been disaggregated by factors such as gender and school type (in 2012), and socioeconomic status (in 2012 and 2013).

Based on a mean combined pass rate, the highest and lowest performing districts in the region and within each country are identified in the regional reports. A table containing all districts ranked according to their mean combined pass rates is presented at the end of the report.

The regional reports also include a small amount of school-level information.

National reports focus on national results.

Children's performance is analysed in terms of competency levels, corresponding to the tasks assessed by each country (see Table 1 and Table 2). Results are presented as the percentage of children attaining each competency level, disaggregated by grade. For instance, Figure 1 presents results from Kenya in Uwezo's third round, where 17 per cent of children in Grade 5 could read a Grade 2-level paragraph but not a story. National reports may also compare children's competency levels between boys and girls, school type (government/private), and regions/counties. Tanzania also reports results using the pass rate concept used in the regional reports.

In the national reports, the level of detail about other educational indicators varies across countries. For instance, countries that include information about enrolment rates emphasise the information about out-of-school children, by region/district and compare these rates with previous Uwezo rounds.

Information about schooling conditions typically reports on the percentage of visited schools that have a specific facility or service (for example, potable water), or percentage of children attending a school where a specific condition was observed (such as children sitting on the floor). Information about the ratio of students per teacher is always included in the report.

Household information is also included with different levels of detail in the national reports. Sometimes it is included only as secondary information, for example by presenting the percentage of parents indicating they visited schools to talk to teachers about their children's learning. Other times an attempt is made to relate children's competencies and family background. When this is the case, the percentage of children passing the test is disaggregated by parents' education or household poverty level.

The strategy for the communication of results starts at the household level. Right after administering the test, volunteers provide feedback about performance to children and parents, and

Figure 1: Uwezo Reading level reporting, Kenya 2012

Level	Nothing	Letter	Word	Paragraph	Story	Total
Class 1	17.2	49.2	21.9	5.8	6.0	100
Class 2	7.9	31.2	32.4	14.9	13.6	100
Class 3	4.6	17.7	28.3	21.9	27.5	100
Class 4	2.2	8.1	15.8	24.3	49.5	100
Class 5	1.7	4.0	8.8	16.9	68.6	100
Class 6	1.1	2.3	4.3	10.7	81.6	100
Class 7	1.2	1.1	2.4	5.7	89.6	100
Class 8	0.9	0.9	1.9	3.3	93.1	100
Average	4.9	15.5	15.7	13.7	50.2	100

Source: (Uwezo-Kenya, 2013)

also give them materials with practical steps to improve learning.

At the national level, results are released in a national conference and communicated through printed reports in English and Kiswahili, newspapers, radio talk shows, and TV adverts and news. To give visibility to the survey and its results, the host organisations in each country have developed documentaries narrating the Uwezo process, and sent SMS messages giving Uwezo's findings and urging action in response to those findings to people in a 'friends of education' database (Uwezo, 2011).

Additionally, Uwezo distributes materials reproducing the tests for self-administration, either using flyers or printing the tests in the inside cover of exercise books.

Influence

A considerable effort is made to give the Uwezo assessment a strong media presence. Moreover, disseminating Uwezo results through the media is an important aspect of the roles of key Uwezo representatives, so they are often interviewed for newspapers and radio shows, giving the survey good visibility in the region.

Radio is Uwezo's preferred medium for reaching out to parents and teachers. Radio briefings have featured on seven key stations in the region. When radio stations learnt of the issue of children attending school but not learning, they agreed to grant Uwezo representatives some free airtime to debate the learning agenda (Uwezo, 2014c).

In addition, a group of journalists from television and the print media were invited to go into the field during the 2014 round of Uwezo in Kenya, so they could observe first-hand what a survey implementation involves, and what it can reveal about the learning levels of children. Many of the journalists subsequently prepared extended pieces about Uwezo for their media outlets (Uwezo, 2014b).

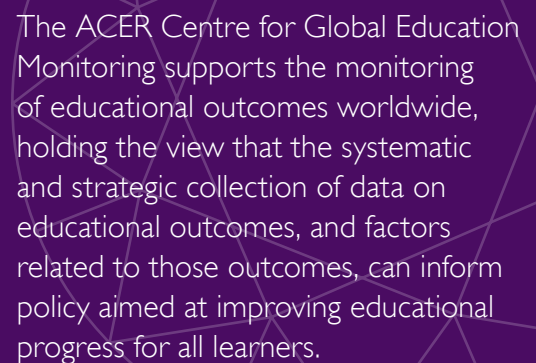
Uwezo results are also featured in local newspapers and their data have been used for research purposes (Uwezo, 2013c).

The story of the Ikhoba Girls Primary School in Kenya provides an example of how Uwezo has triggered action to improve education. This school is in the Masindi district. Uwezo 2011 highlighted the poor performance of this district and prompted representatives from the District Education Office to visit schools. In response to this visit, the teachers at Ikhoba Girls Primary School redoubled their efforts to improve learning levels, and their school performed better in Uwezo and in the Primary Leaving Examination in subsequent years (S. Ruto, personal communication, 31 August 2014).

The actions of Kennedy Nyamura, the district coordinator based in Homa Bay Town in Kenya serve as another example of how Uwezo has triggered and supported action to improve education. Kennedy used the connections that were established through Uwezo implementations, and the awareness about learning levels that arose from Uwezo results, to encourage the establishment of a number of Village Education Committees (VECs) in his district. VECs are community groups that facilitate better communication between families, school management staff and teachers (S. Ruto, personal communication, 31 August 2014).

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