Delivering quality education? 10 insights from public primary schools in Tanzania

KiuFunza is a cost-effective program to improve learning that provides cash incentives to public school teachers in Tanzania conditional on the learning outcomes of students in their class. The program is currently improving foundational reading and numeracy skills for over 77,000 children in 265 ow-performing primary schools.

This report provides insights from the 2023 KiuFunza 4 Baseline Survey, which took place in March 2023. The survey randomly selected 125 out of all KiuFunza program schools and added 60 randomly selected control schools, from the same regions and districts (see the Sampling section for more details).

Key Insights

The Learning Poverty rate is 61%. This means that 61 percent of students aged 10-14, who are in school, cannot read and understand a simple text.

- In all regions, teachers do not know or acknowledge the serious learning deficits. On average, they overestimate the pass rates in their classroom by more than 100%.

- One third of classrooms are orphaned, meaning there are students in these classrooms but no teacher is present.

- Teachers are positive about their job perspective: 88% of surveyed teachers say they would choose teaching again if they could start over.

- 95% of teachers support performance-linked payments.

KiuFunza

Twaweza
ni sisi

The baseline survey collected three types of data before the start of KiuFunza 4. First, we organized a learning assessment in grades 1, 2 and 3 in each school in the sample. Five students were sampled randomly in each grade, and for each student an oral learning test was administered (see images below from a grade 2 assessment and assessment in action in Shinyanga). Second, we interviewed the head teacher about his/her work and the facilities in the school. Third, we interviewed all teachers in grades 1, 2 and 3, about their background, motivation and views.

MANENO	KUSOMA SENTENSI
1. roho	1. Chakula kimeiva
2. keti	2. Simba anaunguruma
3. ruhusa	3. Ng'ombe anakula majani
4. daftari	4. Baba ana shoka kali
5. kutumbuiza	5. Ali anafanya usafi wa mazingira

Insight 1: Learning poverty in low-performing schools is at 61 percent

Learning poverty measures the share of 10-year-olds that cannot read and understand a simple text. Learning poverty is seen as an early warning sign for other educational goals and related sustainable development goals in a country. This recent indicator was developed by the World Bank and UNESCO's Institute of Statistics and helps us to understand and communicate how deep the learning crisis is.[1]

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[1] See for details: https://www.worldbank.org/en/topic/education/brief/what-is-learning-poverty. Including out-of-school children, the World Bank and UNESCO estimate that learning poverty is 53 percent in low- and middle-income countries and 80 percent in poor countries.

Learning Poverty

Student can read and comprehend simple text by age 10
(% of students ages 10-14)

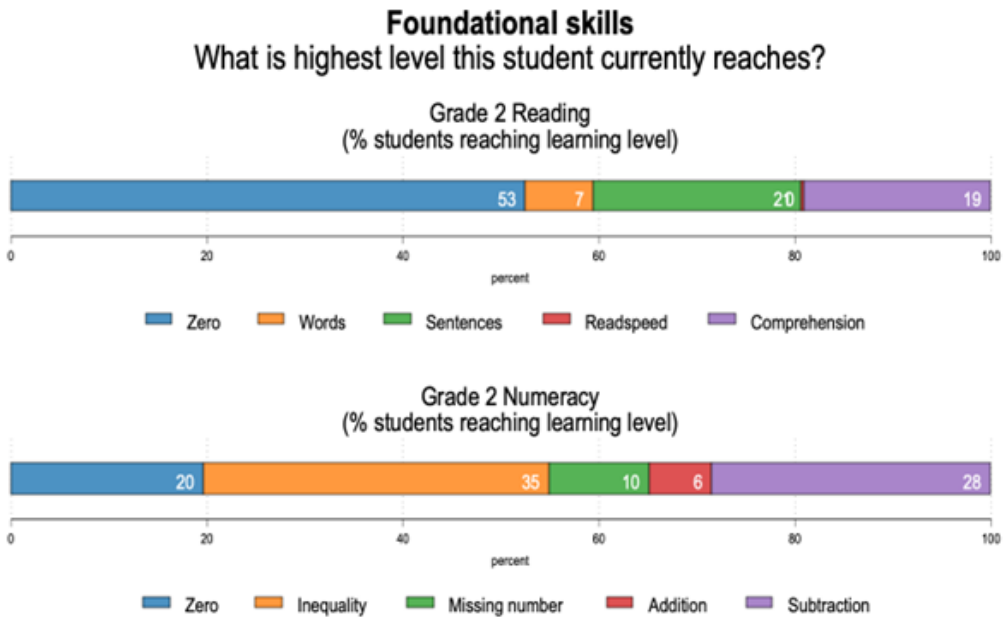| No	Yes
61	39
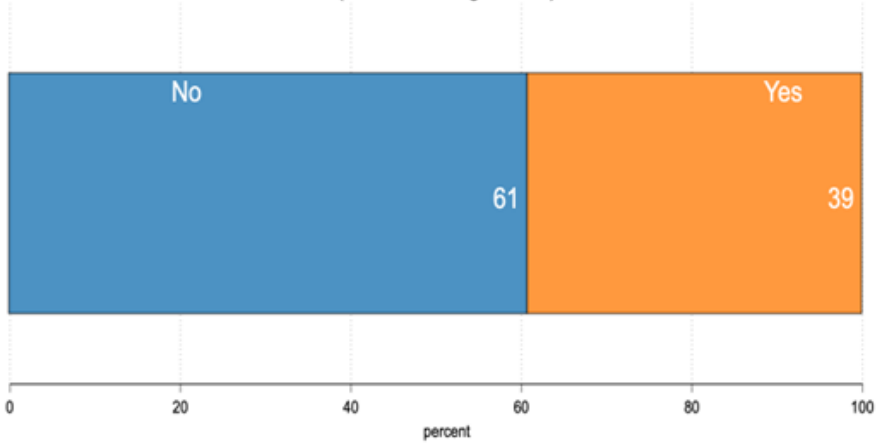
KF4 baseline survey, 2023

In our assessment of at-school children, we find that 61 percent of 10-14 year olds could not read and understand a simple text. These students are in grades 2 and 3. Note that our measure is based on a school survey and does not include students that are out of school; including out-of-school children would likely increase learning poverty

Insight 2: More than half of grade 2 students cannot read words

Foundational skills
What is highest level this student currently reaches?

Grade 2 Reading
(% students reaching learning level)

| 53 | 7 | 20 | 19 |

Zero Words Sentences Readspeed Comprehension

Grade 2 Numeracy
(% students reaching learning level)

| 20 | 35 | 10 | 6 | 28 |

Zero Inequality Missing number Addition Subtraction
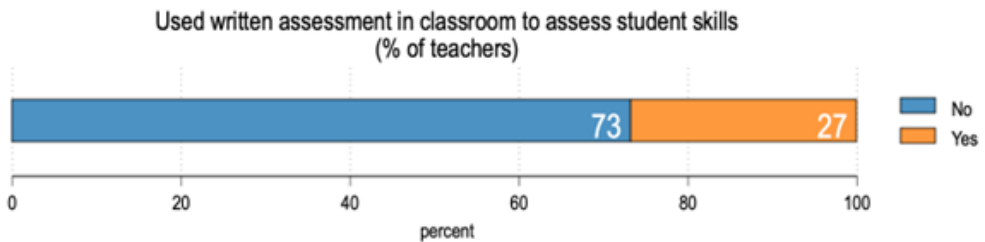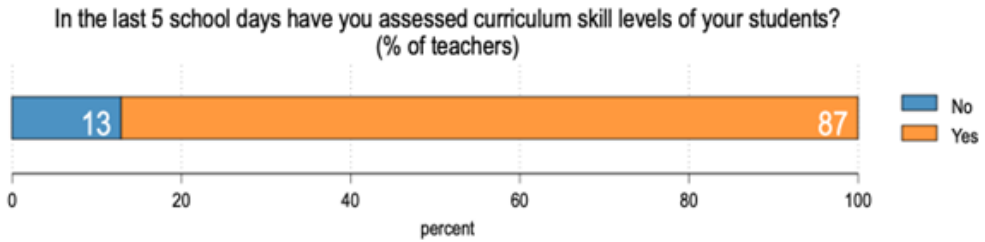
KF4 baseline survey, 2023

This graph shows the highest skill passed by students in the grade 2 assessment. Grade 2 students were assessed on four different curriculum skills. They were asked to read words as the first skill in the assessment. If they can read at least three out of five different words, they pass the Words skill. We find that 53 percent of children in grade 2 do not pass this skill (see the blue segment in the upper graph).

Failing to read words means a student will also fail the subsequent reading skills. As a result he/she is not able to participate in other instruction that involves reading. This problem will keep a student from learning unless teachers find better ways to teach, or to intensify instruction effort, or both.

We find similar problems in numeracy, although a larger share of students can do some numerical operations. For example, 35 percent can tell which of two numbers is larger (inequality) but no higher order skills. 28 percent can do the most difficult grade 2 skill, which is subtraction.

Insight 3: Teachers report assessing curriculum skills …

Student assessments by the teacher

In the last 5 school days have you assessed curriculum skill levels of your students?
(% of teachers)

No	13
Yes	87

Used written assessment in classroom to assess student skills
(% of teachers)
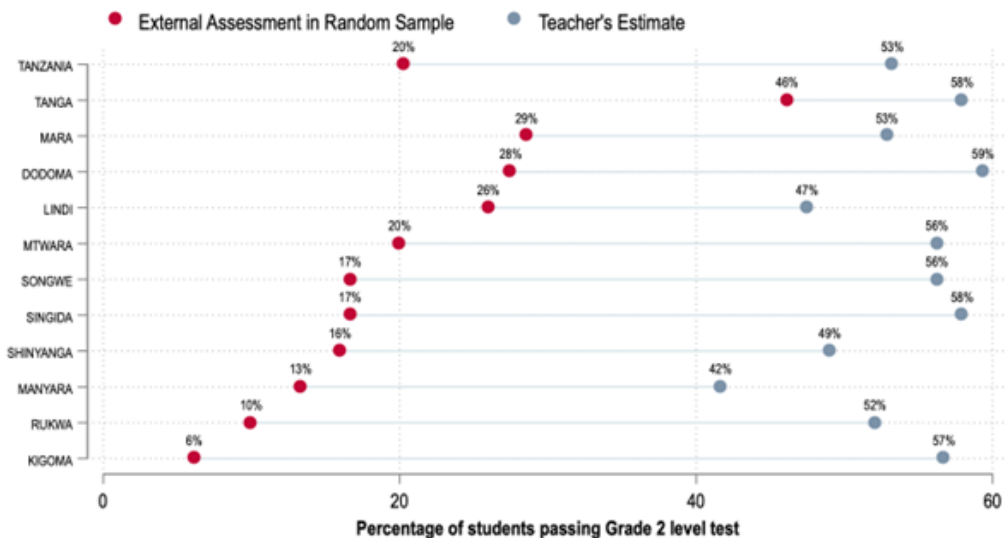
No	73
Yes	27

KF4 baseline survey, 2023

87 percent of early grade teachers report that they have assessed the curriculum skills of their students in the last 5 school days. They report using various types of assessment. Only 27 percent used a written test in the classroom to assess their students' skills. Other teachers used oral assessments in the classroom or assessments through homework assignments.

Insight 4: …but teachers do not know or acknowledge learning deficits of their students

What share of pupils in your class can read Kiswahili at grade 2 level?
Teacher Perceptions versus External Assessments of Foundational Reading
2023 KiuFunza Baseline findings

● External Assessment in Random Sample   ● Teacher's Estimate

Region	External Assessment	Teacher's Estimate
TANZANIA	20%	53%
TANGA	46%	58%
MARA	29%	53%
DODOMA	28%	59%
LINDI	26%	47%
MTWARA	20%	56%
SONGWE	17%	56%
SINGIDA	17%	58%
SHINYANGA	16%	49%
MANYARA	13%	42%
RUKWA	10%	52%
KIGOMA	6%	57%

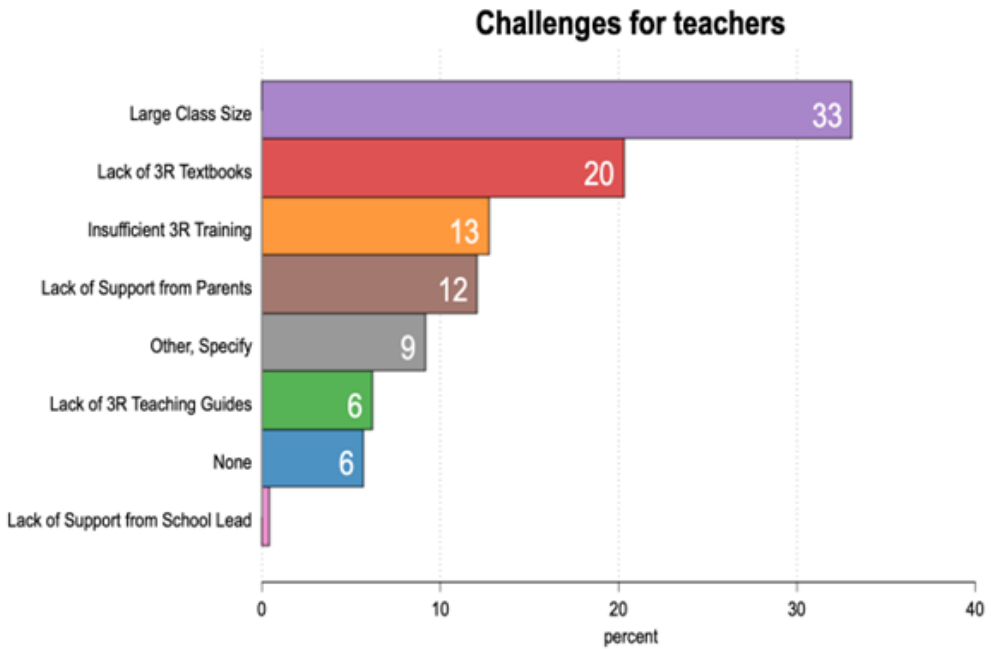Percentage of students passing Grade 2 level test

Are teachers aware that a large share of their students cannot read? We find that either they do not know this, or they do not acknowledge it when asked. In the figure, the red dots show the percentage of grade 2 students that pass the external reading assessment. There is variation across regions, with pass rates ranging from 6 percent in Kigoma to 46 percent in Tanga. Across all regions, 20 percent of grade 2 students can read at their grade level. We asked teachers what share of their students could read Kiswahili at grade 2 level and provide the results in the blue dots in the figure. There is much less variation in these answers, with most teachers saying around 50 percent of their students can read at this level.

The figure above shows a big gap between the reality of foundational reading skills and what teachers think their students can do. The largest gap is found in Kigoma, where the average teacher estimate (57%) is almost 10 times the real pass rate of 6 percent. Across all regions, teachers on average estimate that 53% of students can read at grade 2 level, against an assessed pass rate of 20 percent. Our baseline survey provided similar results for grade 2 numeracy skills.

What explains this very large gap between external and teachers' assessments of learning? Is it that teachers do not know the real situation, or are they hesitant to speak about it? Or do they assess but lack good assessment instruments that reflect what is in the curriculum? This last possibility is plausible, given that only a minority of teachers use written assessments in class.

Insight 5: Teachers' challenges

Challenges for teachers

Challenge	Percent
Large Class Size	33
Lack of 3R Textbooks	20
Insufficient 3R Training	13
Lack of Support from Parents	12
Other, Specify	9
Lack of 3R Teaching Guides	6
None	6
Lack of Support from School Lead	

We asked teachers: what is the main challenge for 3R (reading, writing, arithmetic) curriculum implementation at your school? The challenges identified by most teachers (33%) is the large class size, followed by lack of 3R textbooks (20%) and lack of 3R training (13%).

Other data show that 45% of teachers say they never received 3R training and 80% report they do not have a teacher's guide for the 3R curriculum. Nevertheless, for most teachers the class size is the largest problem they face.
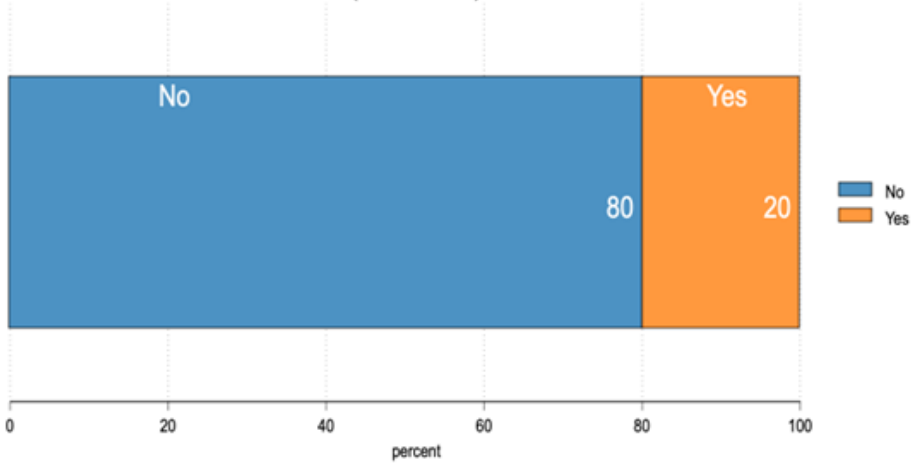
Pedagogy training

Have you ever received training in KKK teaching skills?
(% of teachers)

No	Yes
45	55

Legend: No, Yes

percent (0, 20, 40, 60, 80, 100)
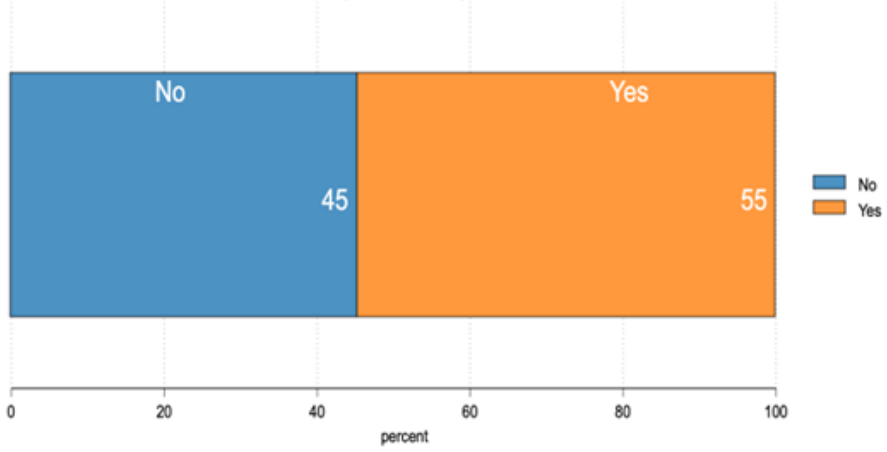
KF4 baseline survey, 2023

Teaching guidance

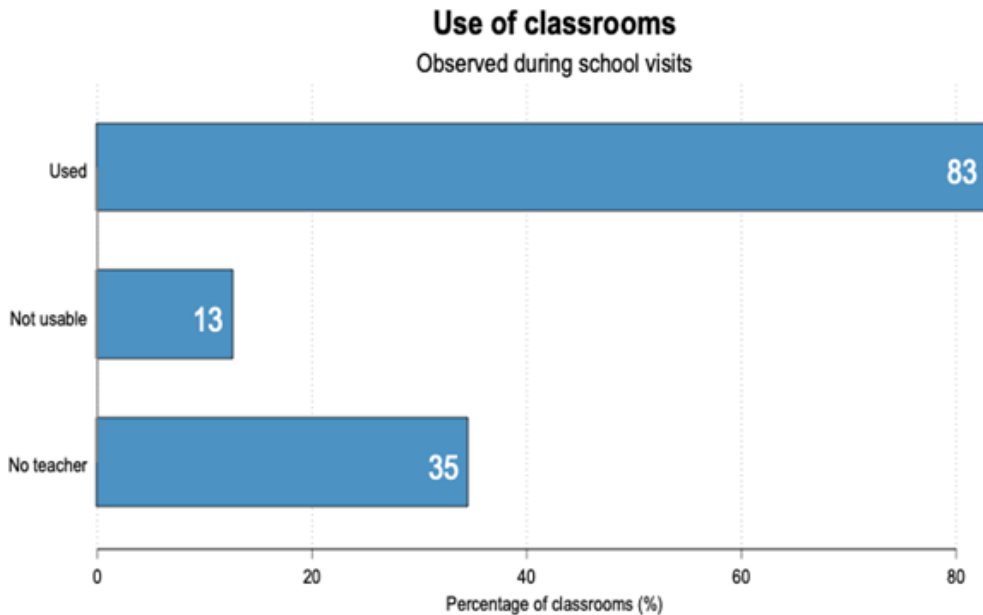Do you have a teacher's guide that reflects the KKK (3R) curriculum?
(% of teachers)

No	Yes
80	20

Legend: No, Yes

percent (0, 20, 40, 60, 80, 100)

KF4 baseline survey, 2023

Insight 6: Early grade students are learning in crowded classrooms

Classrooms are crowded

Number of students per teacher (grades 1-3)

KF4 baseline survey, 2023
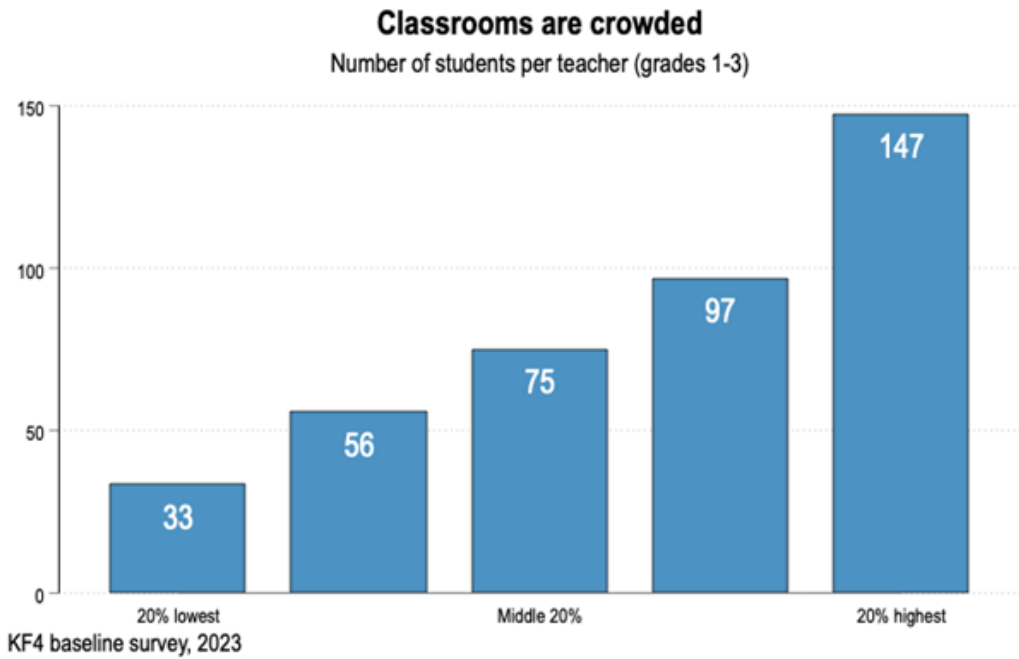
Students in grades 1-2-3 are typically in crowded classrooms. The challenge of large classrooms identified by the early grade teachers comes out clearly from the student enrolment data. The figure presents students per teacher in these three grades, in five size categories. The middle 20% of schools in this distribution have 75 students per teacher, a number much larger than the official guideline of about 50 students per teacher.

Insight 7: 1 out of 3 classrooms are not attended by a teacher

Use of classrooms
Observed during school visits

Used	83
Not usable	13
No teacher	35

Percentage of classrooms (%)

KF4 baseline survey, 2023

What about classroom infrastructure? This figure illustrates findings from reports based on in-person observation by enumerators during school visits. These reports show that about 4 out of every 5 classrooms are in use, i.e. contain pupils during their visit. According to these reports, about 13 percent of classrooms are in too poor a state to be used.

The reports also provide a rare, first-hand account of teacher attendance: 35 percent of the classrooms are "orphaned", that is, they contain students but no teacher is present. Research from a previous KiuFunza phase has shown that our system of teacher incentives can improve teacher classroom attendance.

Insight 8: Many schools provide teacher housing

Do you live in a house that is provided to you by the school, free of charge?
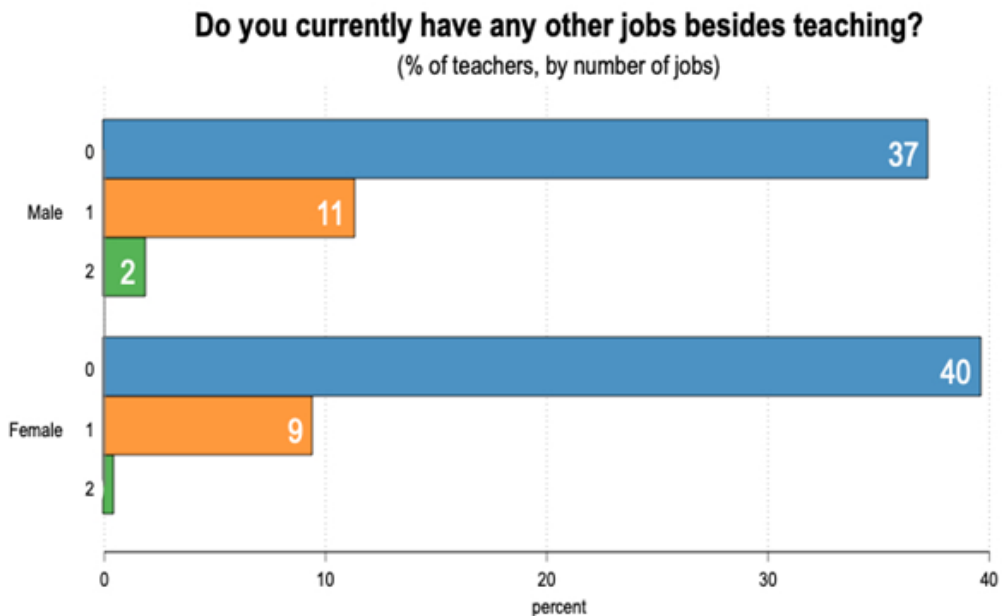(% of teachers)
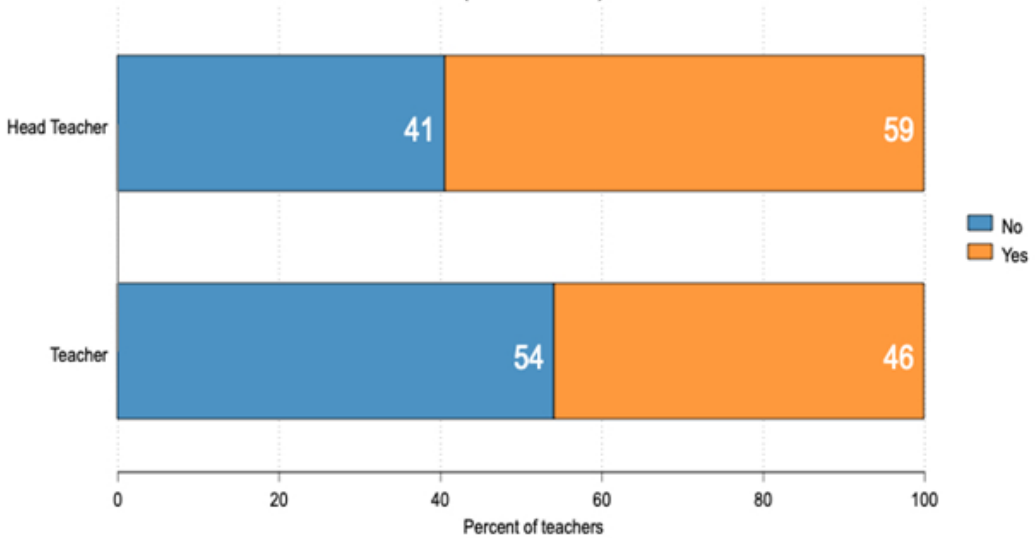
KF4 baseline survey, 2023

46 percent of subject teachers report that they live in a house that is provided to them by the school, free of charge. For head teachers this share is slightly higher, 59 percent. Obtaining good quality housing has been reported as a challenge for teachers, especially in remote areas. These housing numbers can be seen as a response to this challenge, needed to attract and retain teachers to these schools.

Insight 9: 1 in 10 teachers has a job besides teaching

Do you currently have any other jobs besides teaching?
(% of teachers, by number of jobs)
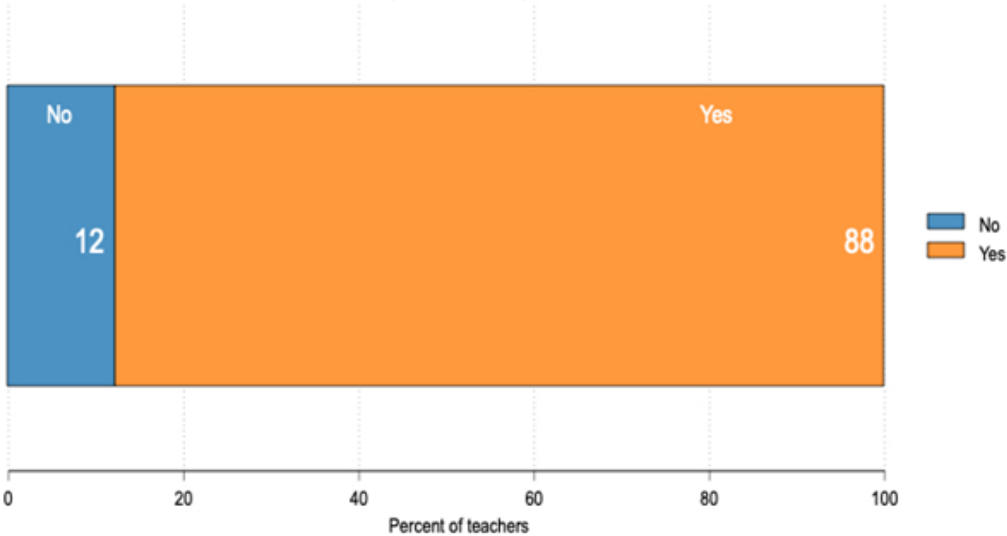

KF4 baseline survey, 2023

Around 1 in 10 teachers report they have a second job, and some even a third. This is a small minority, and other studies have reported a much higher percentage for Tanzania (Bashir et al., 2018, based on labor force survey data). While the number reported here may be an underestimate, it is interesting that these teachers do report about their second jobs.

Second jobs take time and potentially distract from teaching and class preparation time. This phenomenon is important for an incentive program such as KiuFunza, as it links classroom results to bonus payments. In essence, these incentives try to get teachers to spend more time on classroom instruction, and less time on other activities, including non-class time and possibly their second job.

The figure below provides an impression of teacher job satisfaction. We asked teachers: If you could start over, would you choose teaching as a career? We find that a large majority (88%) of teachers in these schools would stay in their job and choose teaching again.

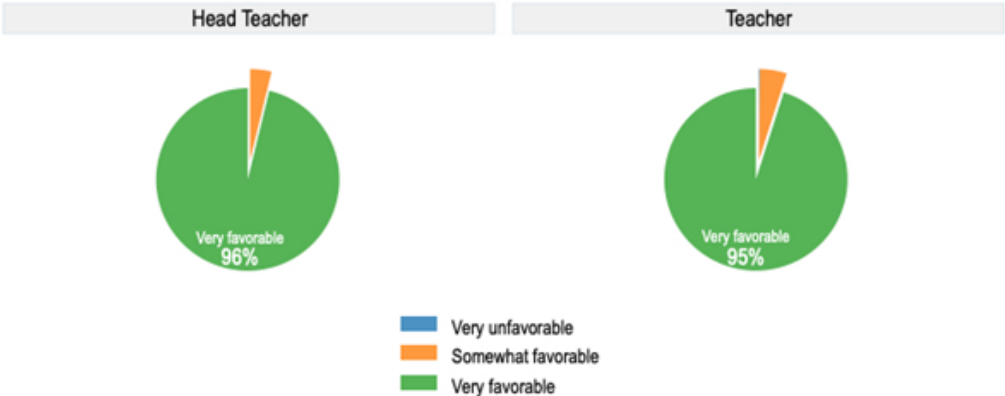## If you could start over would you choose teaching as a career?
(% of teachers)

KF4 baseline survey, 2023

Insight 10: Teachers support performance linked payments

What is your opinion about the idea of providing high-performing teachers with bonus payments on the basis of objective measures of student performance?
(% of teachers)

Graphs by position
KF4 baseline survey, 2023

We asked teachers and head teachers about their views of performance pay, using the question in the above graph: What is your opinion about the idea of providing high-performing teachers with bonus payments on the basis of objective measures of student performance?

The results show an overwhelming support for the program, among both groups. 95% of teachers rate their opinion as "very favorable" (96% of head teachers), and 5% (4%) as "somewhat favorable". Among 610 teachers there is one teacher (0.16%) who reports a "very unfavorable" opinion (difficult to see in the graph). Overall, we conclude that all head teachers and very nearly all teachers have a favorable opinion of the incentives program.

Conclusion

This report highlights a number of findings from the KiuFunza 4 baseline survey. This survey collected data in a sample of low-performing schools, selected from regions and districts that are ranked lowest in terms of their Standard 4 National Assessment results. We summarize four key take-aways.

First, the report highlights very low learning outcomes that are summarized by the headline Learning Poverty rate of 61%. This means that 61 percent of students aged 10-14, who are in school, cannot read and understand a simple text. This finding represents a huge challenge and means that Tanzanian schools are not delivering on the promise of education to their students and families.

Second, the report highlights the fact that teachers - who are the key drivers of instruction - do not acknowledge the serious learning deficits. Teachers overestimate student learning in their own class by a large margin of more than 100%. If the problem of low learning is not acknowledged at the teacher level, and by extension among education administrators at district level, it will remain very hard to address it.

Third, it is clear that early grade teachers face very large classrooms and they see this as a challenge for effective 3R teaching. In addition, we find that quite a number of classes are orphaned, meaning there are students but no teacher present. This may be partly related to teachers having second jobs. Overall, just increasing the number of teachers relative to students - a costly proposition - will not solve the learning problem completely, as long as classes are orphaned.

Fourth, teachers are remarkably positive about their job perspective, saying they would choose teaching again if they could start over. This is a positive job perspective and shows that these teachers feel comfortable in their job, despite the challenges.

What gets measured gets done

We identify learning measurement and incentives for improvement as the key problems. To turn the measurement problem around, Twaweza recommends implementing frequent and low-cost learning assessments at scale. Such learning assessments can be implemented by existing easy-to-use tools and can deliver a data dashboard that is accessible for all stakeholders. Only with high quality measurement can an effective conversation about learning improvement start. In KiuFunza, we measure learning frequently and add small cash incentives for teachers that are linked to these learning outcomes.

Sampling

KiuFunza 4 aimed to target the worst performing public primary schools in Tanzania. To do this we used official assessment data for standard four (2015-2020) to select (a) the ten weakest performing administrative regions, shown on the map; then (b) the three weakest performing districts within these ten regions; and (c) select the KiuFunza program schools (randomly) from the weakest half of the district school population.

The sample for this study consists of 185 schools, of which 125 are in the KiuFunza incentives treatment. 60 are "control" schools where we collect data but do not implement KiuFunza. We will use the control schools to assess our impact as we implement. The control schools were selected in the same way as the intervention schools, and we randomly assigned schools to treatment or control status.

KiuFunza

KiuFunza is a program that provides cash incentives to public school teachers in Tanzania conditional on the learning outcomes of students in their class. The program goal is to improve foundational reading and numeracy skills in grades 1, 2 and 3, while providing inspiration and focus to the teaching staff. KiuFunza has been conceived, implemented and developed since 2013 by Twaweza East Africa, a civil society organization. Randomized evaluations show that KiuFunza improves foundational learning for all types of students (low, middle and high-performing), is highly cost-effective and popular among teachers. From 2023 onwards, Twaweza is implementing KiuFunza 4, a scale-up in 265 primary schools, with support from the Hempel Foundation.