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USAID Integrated Child and Youth Development Activity

Cohort 2 Baseline Early Grade Reading Assessment

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ACRONYMS

CCT	Coordinating Center Tutor
CLSPM	Correct Letter Sounds per Minute
CWPM	Correct Words per Minute
DQA	Data Quality Assurance
EGR	Early Grade Reading
EGRA	Early Grade Reading Assessment
ICYD	Integrated Child and Youth Development
LARA	Literacy Achievement and Retention Activity
LOI	Language of Instruction
MoES	Ministry of Education and Sports
MGLSD	Ministry of Gender, Labour, and Social Development
ORF	Oral Reading Fluency
OVC	Orphans and Vulnerable Children
SES	Socioeconomic Status
SHRP	School Health and Reading Program
SMC	School Management Committee
STS	School-to-School International
USAID	U.S. Agency for International Development

EXECUTIVE SUMMARY

EVALUATION PURPOSE AND EVALUATION QUESTIONS

The USAID-funded Integrated Child and Youth Development (ICYD) Activity provides support and services to Ugandan children and youth, especially the most vulnerable, to help them lead resilient, healthy, and productive lives. In March 2022, ICYD conducted a baseline evaluation to measure the reading abilities of learners in ICYD-supported schools, instructional factors affecting learning, and drivers of vulnerability to dropout and nonenrolment. The purpose of the baseline was to measure the reading outcomes of learners in ICYD catchment areas, to report against contractual indicators, and to inform ICYD intervention design to improve project performance.

EVALUATION QUESTIONS, DESIGN, METHODS, AND LIMITATIONS

The research questions for the baseline were as follows:

> RQ 1: What are the reading outcomes of P2 learners in the Lusoga-speaking zones covered by ICYD?
>
> RQ 2: Which factors are associated with stronger reading performance?
>
> RQ 3: What are the drivers of vulnerability to dropout and nonattendance?

The baseline assessed a sample of learners both in their local language of Lusoga and in English using an EGRA adapted from versions used by two predecessor programs—the School Health and Reading Program (SHRP) and the Literacy Achievement and Retention Activity (LARA). The assessment consisted of five subtasks—letter sound identification, invented word reading, oral reading fluency (ORF), reading comprehension, and vocabulary (only in English). The assessment was accompanied by learner, teacher, and head teacher questionnaires, as well as a school inventory survey, to capture contextual factors associated with teaching and learning.

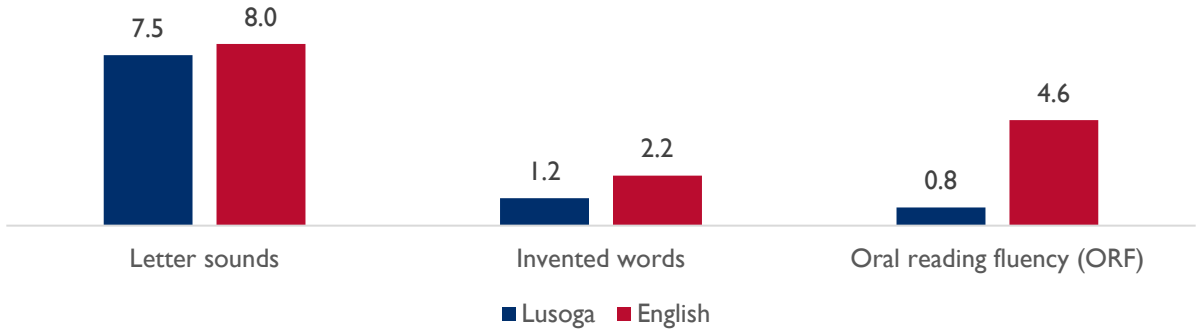
A total of 1,393 P3 learners were assessed, including 694 boys and 699 girls, in 70 government schools at the beginning of the P3 academic year as a proxy for end-of-P2 performance. All mean scores and fluency rates were weighted, as well as the percentages of learners obtaining zero scores, reading with comprehension, and meeting the benchmark. These sampling weights minimize bias on the estimates conducted in the sample of learners.

FINDINGS AND CONCLUSIONS

RQ 1: What are the reading outcomes of P2 learners in the Lusoga-speaking zones covered by ICYD?

Learners' scores on the letter sound identification, invented word reading, and ORF subtasks were low in both languages. On the ORF subtask, learners read on average 0.8 correct words per minute (CWPM) in Lusoga and 4.6 CWPM in English, as illustrated in Figure 1, far from the benchmark of 21 CWPM established by previous early grade reading projects in Uganda, including SHRP and LARA, as the minimum proficiency level for the end of P2. Only 1.0 percent of learners met the ORF benchmark in Lusoga and 7.0 percent in English.

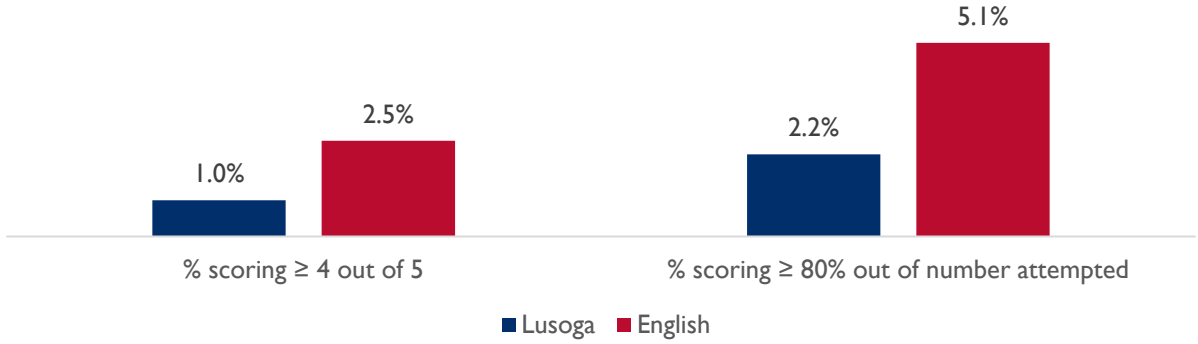
Figure 1: Fluency rates by subtask and language



Numbers indicate numbers of correct letter sounds, invented words, or oral reading words per minute.

Learners also struggled to comprehend what they read. Only 2.2 percent of learners were able to answer at least 80 percent of the reading comprehension questions correctly that they attempted in Lusoga, and only 5.1 percent did so in English, as presented in Figure 2. Comprehension rates were lower when calculated as the proportion of learners who were able to answer at least four of the five overall questions correctly.[1]

Figure 2: Comprehension rates by subtask and language

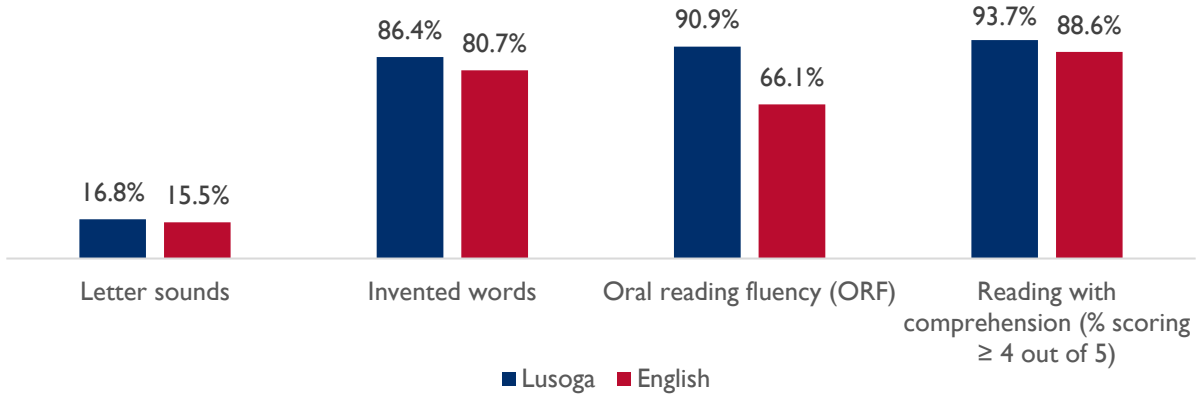


Percentages indicate proportion of learners reading with comprehension—answering at least 80 percent of questions correct.

Rates of zero scores, which are calculated as the percentage of learners unable to answer any items correctly on a subtask, were high on invented word reading, ORF, and reading comprehension in both languages. Zero scores for Lusoga ranged from 86.4 percent in invented word reading to 93.7 percent in reading comprehension, as shown in Figure 3, and from 66.1 percent in ORF to 88.6 percent in reading comprehension for English.

[1] For this EGRA, comprehension was calculated in two ways. Although the learner can be asked a maximum of five questions, the subtask only allows learners to answer questions relative to the amount of text they were able to read. First, the number of questions each learner answered correctly was divided by five. Second, the number of questions each learner answered correctly was divided by the number of questions they attempted.

Figure 3: Percentage of zero scores by subtask and language



Learners struggled least on the letter sound identification subtask, but their ability to identify letters was limited. Only 16.8 percent of learners were unable to identify any letters in Lusoga and 15.5 percent in English. Still, learners on average identified only about 8 letters per minute correctly in both Lusoga and English.

Subgroup results

Girls performed better than boys on most subtasks in both languages. Girls' scores were significantly higher on the invented word and ORF subtasks and on all timed subtasks in English. Although the proportion of girls reading with comprehension was slightly higher than boys in both English and Lusoga, the differences were not statistically significant, likely due to the small numbers of learners in each group.

Although learners' scores were poor, they were higher than those on a previous Lusoga EGRA conducted with a comparable population. A comparable population of learners in Lusoga schools—those finishing P2 in a treatment group—participated in an EGRA in October 2016 for an endline study for SHRP.[2] Learners in the ICYD Cohort 2 baseline scored higher on ORF in Lusoga than those in 2016—0.8 CWPM to 0.45 CWPM—and had lower proportions of zero scores on the subtask—90.9 percent to 93.0 percent. Still, in both cases, scores were extremely low.

RQ 2: Which factors are associated with stronger reading performance?

Correlations between subtasks

Correlations between letter sound identification and other subtasks were much stronger in Lusoga than English. In both languages, strong correlations were found between scores on invented word reading, ORF, and reading comprehension, but the correlations between letter sound identification scores and other subtasks, including invented word reading and ORF, was strong in English, but only moderate in Lusoga.

Predictors of stronger performance

Regression analyses were conducted to identify which variables predicted stronger performance in all subtasks but invented word reading. As displayed in Table 1 and Table 2, the following variables emerged as the top predictors of stronger EGRA performance—as measured by the greatest difference in the number of items read per minute or reading comprehension questions answered:

- **If English was the school's language of instruction (LOI):** Although Lusoga is supposed to be the LOI of every school in Lusoga-speaking areas, head teachers and teachers at some

[2] For further information, see Performance & impact evaluation (P&IE) of the USAID/Uganda School Health Reading Program: Result of the USAID/Uganda school health and reading program: Result 1 school level interventions. Impact evaluation, final report. NORC, 2017.

schools reported that another language was the LOI, including English. The top predictor of stronger performance on the English EGRA was if a learner was taught in English, according to the head teacher or teacher.

- **If the school has a library:** One of the top predictors for stronger EGRA performance on both the Lusoga and English EGRA subtasks was if a learner attended a school with a library. It was the top predictor of stronger performance for reading comprehension in Lusoga, and the second-best predictor of performance for Lusoga letter sound identification and all three English subtasks.
- **If the learner was wearing shoes on the day of the assessment:** While administering the EGRA, assessors observed if learners were wearing shoes as a proxy for economic hardship. This variable was the top predictor of stronger performance in Lusoga ORF and the second-best predictor of stronger performance on reading comprehension in Lusoga.
- **If a teacher was teaching at the same school as 2020:** If a teacher remained at the same school as 2020 was the top predictor of stronger performance in two Lusoga subtasks—ORF and letter sound identification.

Table 1: Top variables predicting stronger Lusoga EGRA performance, by subtask

Variable	Subtask	Difference
Learners wearing shoes	ORF	0.90 additional corrects words per minute (CWPM)
	Reading comprehension	0.18 more questions (Qs) answered correctly
Teacher teaching in the school in 2020	Letter sound fluency	5.95 additional correct letter sounds per minute (CLSPM)
	ORF	0.88 additional CWPM
School has a library	Letter sound fluency	5.93 additional CLSPM
	Reading comprehension	0.19 more Qs answered correctly

Table 2: Top variables predicting stronger English EGRA performance, by subtask

Variable	Subtask	Difference
School is an English language school	Letter sound fluency	7.25 additional CLSPM
	ORF	7.83 additional CWPM
	Reading comprehension	0.61 more Qs answered correctly
School has a library	Letter sound fluency	9.42–11.46* additional CLSPM
	ORF	11.56–12.29* additional CWPM
	Reading comprehension	0.88–0.97* more Qs answered correctly

Note: An astricks (*) notes that first score based on head teacher response, and second is based on teacher response.

Other findings from questionnaires

Responses to questions indicating learners' socioeconomic status (SES) were mixed. Although most learners reported having electricity (67.0 percent) in their homes, as well as having a mobile phone (65.4 percent) or a radio (63.1 percent) at home, a slim majority of learners were not wearing shoes at the time of the assessment (53.6 percent), which was used a proxy for SES, and said they had last eaten the previous evening (52.9 percent).

The proportion of learners repeating P3 was notable. More than one in six learners (17.5 percent) said they were repeating P3.

The proportion of learners who mostly speak Lusoga at home did not match the proportion of learners taught in Lusoga. While 81.3 percent of learners said they mostly speak Lusoga at home, only 63.3 percent reported that their teacher taught in the language. Nearly the same proportion of teachers—78.1 percent—said their mother tongue is Lusoga.

Most learners said that they and their teacher had been absent at least once the previous week. Five in nine learners (55.5 percent) said they had been absent at least once the previous week, and 57.4 percent of learners said their teacher had missed at least one day the previous week.

The vast majority of teachers reported school officials observed them in the classroom. Nearly nine in 10 teachers (89.1 percent) reported someone observed them teaching, with half saying the observations happened at least once a week. Nearly half (48.4 percent) also reported their coordinating center tutor (CCT) observed them teaching.

RQ 3: What are the drivers of vulnerability to dropout and nonattendance?

Orphanhood was identified as the most prevalent driver of vulnerability. Teachers and head teachers both reported that orphanhood was the most prevalent driver of vulnerability in their schools and communities, with 66 percent and 62 percent, respectively, reporting that many orphans (more than 10) were enrolled at their school.

Poor academic progress was identified as the driver of vulnerability being addressed the most. Teachers and head teachers also reported the extent to which actors in the school community were addressing drivers of vulnerability. Poor academic progress was the driver cited as being addressed the most by both teachers and head teachers, while poor school quality was the driver being addressed the least, according to both parties.

Teachers and head teachers reported that violence and abuse were prevalent drivers of vulnerability in communities, but not schools, and one of the drivers being addressed the least. Although 41 percent of teachers and 48 percent of head teachers said violence and abuse, including school-related gender-based violence (SRGBV), were prevalent to a great extent in their communities, only 3 and 9 percent, respectively, said they were prevalent to a great extent in their schools. In addition, 61 percent of teachers and 59 percent of head teachers said they were not at all prevalent in their schools. Teachers and head teachers also cited abuse and violence as one of the drivers being addressed the least, with 46 and 40 percent, respectively, saying they were not being addressed at all.

Discussion. The following patterns identified in the baseline findings deserve closer scrutiny.

- **Why is the association between letter sound fluency and other reading skills weaker in Lusoga than English?** While this assessment found strong correlations between EGRA scores on letter sound identification and the other subtasks in English, the correlation between letter sound identification and other subtasks in Lusoga was only moderate. Why might this be? First, unlike English, Lusoga is a tonal language, so linkages between letter sounds and other reading skills in Lusoga might be weaker than in English due to their complexity in Lusoga.

Second, like other Bantu languages, Lusoga is agglutinative, which may be one reason learners read fewer words per minute in Lusoga than in English. Additional information from EGRAs in Lusoga and other Bantu languages might confirm or refute these hypotheses.

- **Certain variables associated with stronger reading performance are within ICYD's control**. While some variables associated with stronger reading performance are beyond the control of a project like ICYD, such as learners wearing shoes, the project may be able to have an impact on other predictors of stronger reading performance through direct intervention or policy initiatives. Possible intervention ideas include the following:
    - ***Teachers remaining at the same school***. One of the top, albeit modest, predictors for stronger performance in Lusoga letter sound identification and ORF was having a teacher who reported being in the same school as 2020—a measure of low teacher turnover. This measure of workforce stability predicted even greater gains on the English EGRA. Such consistent evidence suggests that when teachers remain at their schools, learners' performance increases, perhaps because consistency enables teachers to gain a greater understanding of their learners, to build relationships, and to become better literacy teachers.
    - ***School libraries***. Having a library at the school was perhaps the biggest predictor of stronger performance on both the Lusoga and English EGRAs, constituting one of the top two predictive variables for two of the Lusoga subtasks and three English ones. Such a finding makes a strong case for direct intervention and/or policy initiatives prioritizing the establishment or use of libraries in schools as a key strategy for improving learning outcomes.
- **ICYD has an opportunity to build on existing observation practices**. Based on teacher and head teacher interview responses, a substantial base of in-school teacher support appears to exist in ICYD schools included in this EGRA. In most cases, head teachers or other school officials review teachers' lesson plans, and half of all teachers reported being observed by a head teacher or another school official at least once a week. In addition, CCTs provide additional observation support. Such practices constitute a foundation of in-school support upon which schools could build to reinforce teachers' instructional skills in literacy.

Recommendations. The Cohort 1 Midline conducted by ICYD in October and November 2021 listed several recommendations that are pertinent to this baseline study as well. Notably, that the validity of the ORF benchmark should be evaluated in light of the different linguistic feathers of Ugandan languages and English, that the nature of language mismatches and their effects on teaching and learning should be investigated, and teachers' and head teachers' perspectives on drivers of vulnerability should be triangulated with other sources.

In addition to those recommendations, the following are proposed based on the findings from the 2022 Cohort 2 baseline.

1. **Focus on the variables on which ICYD can have an impact.** As noted above, this EGRA found a number of variables upon which it is unlikely that a project like ICYD can have an impact in the near term, including learners' SES and schools' LOI. But ICYD can act on several predictors of stronger EGRA performance, such as low teacher turnover and the presence of school libraries, either in terms of direct intervention or advocating for policy initiatives.
2. **Examine how English is used in Lusoga-speaking schools and analyze results by school type—Lusoga LOI vs. English LOI.** Learners' stronger performance on English subtasks, and English language schools being predictors of stronger performance, suggest two things: (1) that English language use in Lusoga-speaking schools reinforces learning and, in some instances, may constitute more instructional time than instruction using Lusoga; and (2) English

language schools comprise higher performing schools. ICYD would benefit from a greater understanding of these two situations in order to optimize interventions for learners studying in different contexts.

3. **Examine the role played by letter sound fluency in Lusoga.** Performance on the English letter sound identification subtask strongly correlated with performance on other subtasks, but the correlations were only moderate for Lusoga. This difference may provide clues about the role letter sound knowledge plays in Lusoga in preparing learners for decoding, ORF, and reading comprehension. Does it a play a minor role, and therefore should not comprise a large portion of reading instruction? This assumption may be true if letter sound knowledge does not prepare learners for reading in tonal languages the way it does in nontonal languages like English. Or is letter sound knowledge in fact foundational for later learning but simply not taught sufficiently well at this time? Further examination may provide clues concerning the amount of time that should be spent on teaching letter sounds or, if it is indeed foundational for learning other reading skills in tonal languages, how it could be taught more effectively.

PROJECT BACKGROUND

The USAID-funded Integrated Child and Youth Development (ICYD) Activity provides support and services to Ugandan children and youth, especially the most vulnerable, to help them lead resilient, healthy, and productive lives. ICYD delivers basic education in 50 target districts and services for orphans and vulnerable children (OVC) in 73 districts in Uganda.

The ICYD Activity has three mutually reinforcing objectives: 1) Children and youth have improved learning outcomes; 2) Children and youth are protected, safe, and healthy in their homes, communities, and learning environments; 3) Youth practice positive behaviors and make informed decisions about their lives and relationships.

ICYD Activity interventions that contribute to the attainment of the three goals fall in five main tasks:

> **Task 1:** Build on the recent Early Grade Reading (EGR) support to the Ministry of Education and Sports (MoES).
>
> **Task 2:** Address primary school retention through a combination of family, community, and school-based interventions that address known critical drivers of school dropout.
>
> **Task 3:** Provide critical OVC services directly for up to two years while building local partners' capacity to transition to prime awards with USAID/Uganda.
>
> **Task 4:** Provide technical assistance and coordination to OVC service providers in service delivery districts.
>
> **Task 5:** Deliver effective technical assistance and support to the Ministry of Gender, Labour, and Social Development (MGLSD), MoES, and other public/private institutions and organizations to progressively transition OVC service delivery and education improvement from donor support.

The ICYD Activity promotes improved coordination and collaboration across sectors and other USAID-supported programs. The Activity seeks to strengthen systems for better communication and planning at national, district, and municipal levels of government and between government and nongovernmental institutions that serve children and youth.

School-to-School International (STS) was subcontracted to provide technical assistance to the Activity's learning agenda, monitoring, and evaluation activities, including the measurement of improvements in reading ability in primary school in alignment with Objective 1. This report presents the results of one of these measurements—an Early Grade Reading Assessment (EGRA) conducted in March 2022.

ASSESSMENT PURPOSE & EVALUATION QUESTIONS

PURPOSE

Reading outcomes in primary schools in Uganda are inadequate. Exams administered by the Uganda National Examinations Board have found that only a small percentage of P3 learners passed reading and writing at an "adequate level"—20 percent in 1999 before the Universal Primary Education act and 38 percent in 2005 after the act was implemented.[3] In order to address these inadequacies, USAID, in collaboration with the Ugandan MoES, has implemented programs, including School Health and Reading Program (SHRP), Literacy Achievement Reading Activity (LARA), and ICYD, to improve children's reading abilities in the early grades.

In March 2022, ICYD assessed learners' reading abilities in ICYD-supported schools in Lusoga-speaking areas—the second cohort to be supported by ICYD (hereafter called Cohort 2). Learners were assessed at the beginning of the P3 academic year as a proxy for end-of-year P2 performance.

The objective of this assessment was to measure the reading abilities of Cohort 2 learners to understand the extent to which ICYD interventions targeting improved teaching and learning were achieving their desired results, as expressed by two indicators—ES 1-1 and ES 1-48; (percentage of learners targeted for USG assistance who attain a minimum grade level proficiency in reading at the end of grade 2 and percentage of learners targeted for USG assistance with an increase of at least one proficiency level in reading at the end of grade 2, respectively). Results will be used to report these indicators during the Activity's five-year period. ICYD will also use the results of the Cohort 2 baseline EGRA assessment to determine how best to target interventions.

RESEARCH QUESTIONS

Two research questions (RQs) focus on learners' reading abilities and the factors associated with stronger performance. While not directly related to reading outcomes, a third research question is posed to gather information on drivers of vulnerability so ICYD can better understand how to meet its goal of providing support and services to Ugandan children and youth, especially the most vulnerable, to help them lead resilient, healthy, and productive lives.

RQ 1: What are the reading outcomes of P2 learners in the Lusoga-speaking zones covered by ICYD?

RQ 2: Which factors are associated with stronger reading performance?

RQ 3: What are the drivers of vulnerability to dropout and nonattendance?

[3] Abiria, Doris Maandebo, Margaret Early, and Maureen Kendrick. 2013. "Plurilingual Pedagogical Practices in a Policy-Constrained Context: A Northern Ugandan Case Study." *TESOL Quarterly* 47 (3): 567–90. https://doi.org/10.1002/tesq.119.

METHODS & LIMITATIONS

RESEARCH DESIGN

This study assessed a sample of learners both in Lusoga and in English. The assessment consisted of five EGRA subtasks measuring pre-reading and reading skills adapted into the targeted languages—Lusoga and English—as presented in Table 3.

Table 3: EGRA subtasks and reading skills assessed

EGRA Subtask	Reading skill	Demonstrated via	Assessed in
Letter sound identification	Letter sound knowledge (alphabetic principle)	Ability to provide SOUND of letters	Lusoga and English
Invented word reading	Decoding	Ability to link graphemes and phonemes in novel combinations	Lusoga and English
Oral reading fluency (ORF)	Oral passage reading	Ability to read connected text based on a measure of correct words (read aloud) per minute	Lusoga and English
Reading comprehension	Comprehension	Ability to answer questions about a passage read by the learner	Lusoga and English
Vocabulary	Receptive vocabulary[4]	Ability to point to body parts and objects	English only

The assessment was orally administered to each learner in approximately 15 minutes, followed by a learner context questionnaire that collected data on learner characteristics (e.g., the learner's age, sex, home language and reading environment, socioeconomic variables) and behaviors associated with the ability to learn (meals eaten the day of the assessment and attendance). Assessors also observed if children were wearing shoes on the day of the assessment—a proxy for economic hardship.

Assessors also administered a teacher questionnaire to collect information on teachers' education, experience, and demographics; the amount of support they received for reading instruction; and the drivers of vulnerability in the school and community. Assessors also interviewed head teachers to learn about their education, experience, and demographics; school enrollment and support structures, including the school management committee (SMC); and the drivers of vulnerability in the school and community. Assessors also completed a school inventory survey to collect data about school facilities and the availability of electricity and water.

All questionnaires were brief and closed-ended. No interviews were audio-recorded.

The research design and all tools were reviewed and approved by the Research and Ethics Committee at the Makerere University School of Social Sciences, Kampala.

[4] Ability to respond to prompts to demonstrate understanding of spoken words, in contrast to being required to respond with words (productive vocabulary).

SAMPLE

Target sample

The Cohort 2 baseline was conducted in schools in Lusoga-speaking zones. First, 70 schools were randomly sampled from among this population of schools, and then at each school, 10 P3 girls, 10 P3 boys, one P3 reading teacher, and one head teacher were targeted to be randomly selected.

Achieved sample

A total of 1,393 P3 learners were assessed, including 694 boys and 699 girls. In addition, 63 P3 teachers and 68 head teachers were interviewed, and 70 school inventory surveys were completed. The numbers of learners assessed by district and gender were as follows:

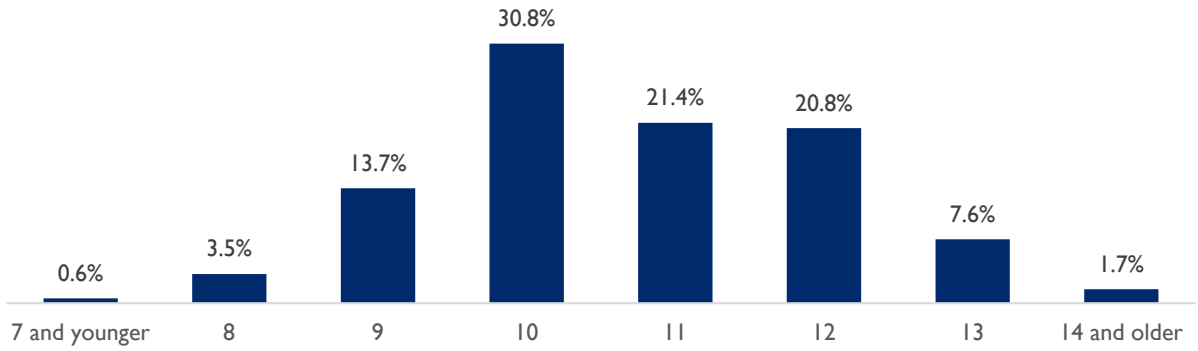
Table 4: Achieved sample, learners

District	Schools	Learners		Teachers		Head Teachers	
		Male	Female	Male	Female	Male	Female
Bugiri	8	79	80	2	5	4	4
Bugweri	5	50	50	1	4	4	1
Iganga	13	128	132	4	8	6	6
Jinja	11	110	110	2	9	6	5
Kamuli	15	148	145	4	8	9	5
Mayuge	11	109	111	5	5	8	3
Namayingo	7	70	71	3	3	7	0
Total	70	694	699	21	42	44	24
		1393		63		68	

Characteristics of the sampled population

While learners' ages primarily ranged from 8 to 13 years old, most were 10 to 12, as shown in Figure 4. Given that the expected age range for P3 is 8 or 9 years old, 82.2 percent of learners were found to be overage.

Figure 4: Learners' ages in years



ASSESSOR TRAINING

ICYD recruited all personnel through an open and competitive hiring process. Ten EGRA assessors and five supervisors were trained to carry out the EGRA. The ICYD monitoring and evaluation team, with support from an experienced data quality assurance officer, has conducted similar trainings on SHRP and

LARA and trained the assessors and supervisors on EGRA administration protocols from March 7–11, 2022. The training also oriented the data collection team to the ICYD project goals and objectives; the purpose of the baseline assessment; the use of tablets to collect assessment data; learner sampling processes, ethical issues associated with conducting research with children; procedures for child protection and obtaining informed consent; and safeguarding data. All assessors were evaluated using an assessor accuracy quiz. Only those scoring 90 percent or more were retained for data collection.

DATA COLLECTION

The ICYD M&E team supervised field data collection. Data collection was done utilizing Tangerine electronic data collection software on tablets for the EGRA; the learner context, teacher, and head teacher questionnaires; and the school inventory survey.

Field Work

Five assessment teams were deployed for data collection and each consisted of two assessors and one supervisor. The DQA officer, with support from the ICYD M&E team and STS home office staff, provided oversight of the data collection exercise. Teams collected data from March 14–31, 2022. Data collection at each school took one day.

The following measures were taken to ensure that all teams collected quality data:

- A supervisor led each team and conducted spot-checks during fieldwork. Supervisors observed some assessments; reviewed all completed assessments for each of their assessors on a daily basis to identify any errors, inconsistencies, and incompleteness; and made corrections while the team was still in the field.
- A DQA officer and the ICYD M&E team observed assessors during assessments following an observation checklist. They provided instant feedback to the assessor to address any errors.
- At the end of each day, assessors debriefed with the DQA and the ICYD M&E team to review the day's experiences and practice EGRA administration if any tasks were identified as challenging.
- STS home office staff conducted daily data quality checks on uploaded data and provided feedback to the team, flagging and correcting any inconsistencies.

DATA ANALYSIS AND REPORTING

Data from the EGRA and survey tools were collected electronically using Tangerine and uploaded daily to the cloud. Data collection tools were programmed with skip logic and prompts to complete the survey before saving each form. STS cleaned the data to remove extraneous data, such as practice data, duplicates, and outliers; STS also made decisions about missing data, such as incomplete interviews.

Learners' performance on all subtasks was scored by calculating the number of correct responses (accuracy). For all the three timed subtasks (letter sound identification, invented word reading, and oral reading fluency), learners' performance was measured by calculating the rate at which they provided correct responses (fluency). Once individual scores were calculated, means were determined for both accuracy and fluency. Learners' performance was also determined by calculating percentages of learners meeting the benchmark.

All mean scores, fluency rates, and percentages of learners obtaining zero scores, reading with comprehension, and meeting the benchmark were weighted. These sampling weights minimize bias on the estimates conducted in the sample of learners. Random sampling does not account for the fact that some learners have a lower probability of being selected when they are in schools of varying size or represent smaller subgroups within the population; sampling weights allow the analysts to account for these differences in probabilities.

LIMITATIONS

- **Reliability of results**: Methods used to collect data for this baseline provided important information on topics such as the existence of drivers of vulnerability or the extent to which they are being addressed. However, additional data points could corroborate or disconfirm trends identified in this report (see Discussion and Recommendations for more details).
- **Comparison of Lusoga results to English:** As with most EGRA studies, these results do not provide appropriate data for cross-linguistic comparisons; that is, learners' reading skills in Lusoga should not be directly compared with learners' reading skills in English or other Ugandan languages assessed in Cohort 1. Language acquisition and reading development depend on several factors, including the different levels of orthographic transparency, visual complexity, and phonology. The only comparisons across languages are with zero scores because those data measure the proportion of nonreaders in each language group.

FINDINGS

This section presents the results of the Cohort 2 Baseline in response to each of the research questions (RQs) identified in the preceding methods section.

RQ 1: WHAT ARE THE READING OUTCOMES OF P2 PUPILS IN THE LUSOGA-SPEAKING ZONE COVERED BY ICYD?

This section summarizes results on the EGRA by subtask, by sex, and by benchmark results. Note that when statistically significant results are found, they are noted with an asterisk (*); all statistically significant differences are presented at the 0.05 level.

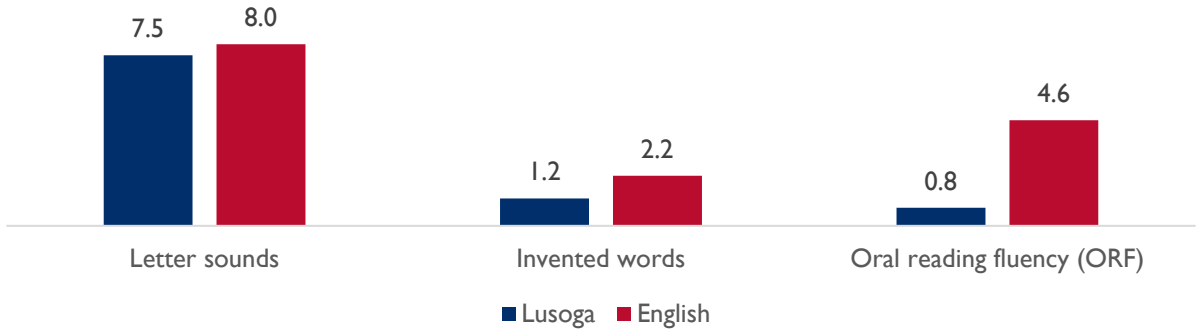
RESULTS BY SUBTASK

Fluency rates

A fluency rate is the average number of correct responses per minute on a timed subtask. In this assessment, three subtasks were timed in both Lusoga and English—letter sound identification, invented word reading, and ORF. Overall, the fluency rates were poor for all three subtasks, as shown in Figure 5. Even on the subtask on which learners struggled least—letter sound identification—learners only identified on average about 8 letters per minute in both Lusoga and English.

A comparison with the Cohort 1 results from the November 2021 ICYD midline shows that the Cohort 2 English results were lower than for Cohort 1 learners. [5]

Figure 5: Fluency rates by subtask and language



Numbers indicate the number of correct letter sounds, invented words, or oral reading words per minute.

Reading comprehension scores

Reading comprehension is the most important measure of a learner's reading ability because the purpose of reading is to derive meaning from text. But what score indicates that a learner understands a text? Reading experts consider 80 percent comprehension to be a minimum indication of adequate comprehension of a text.

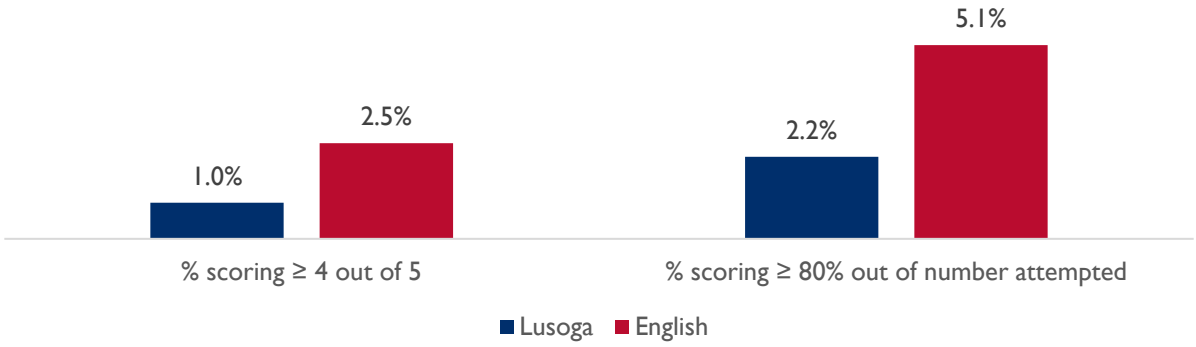
For this EGRA, comprehension was calculated in two ways. First, the reading comprehension subtask consisted of first reading a text, then asking the learner five comprehension questions. Importantly, the EGRA reading comprehension subtask only allows learners to answer questions relative to the amount of text they were able to read. For example, if a learner can only read half the text, she/he would only be asked questions concerning that part of the text—perhaps, two or three out of the five overall. Thus,

[5] See Cohort 1 report.

if she/he was asked three questions and answered them all correctly, her/his score would be **three out of five,** or 60 percent—below the comprehension threshold. All learners' scores were calculated in this manner. But this analysis included a second way of calculating reading comprehension, where the number of questions each learner answered correctly was divided by the **number** of questions they **attempted**. According to this calculation, the learner in the example above would have scored 100 percent because she/he answered all three questions attempted correctly.

The following figure presents both calculations: learners answering at least 80 percent of comprehension questions correctly **out of five** and those answering at least 80 percent of comprehension questions out of the **number attempted**. Naturally, scores for questions attempted are higher than scores out of five. Regardless of the type of calculation, the percentages of learners reading with comprehension are extremely low. As with the timed subtasks, more learners read with comprehension in English than Lusoga.

Figure 6: Comprehension rates by subtask and language

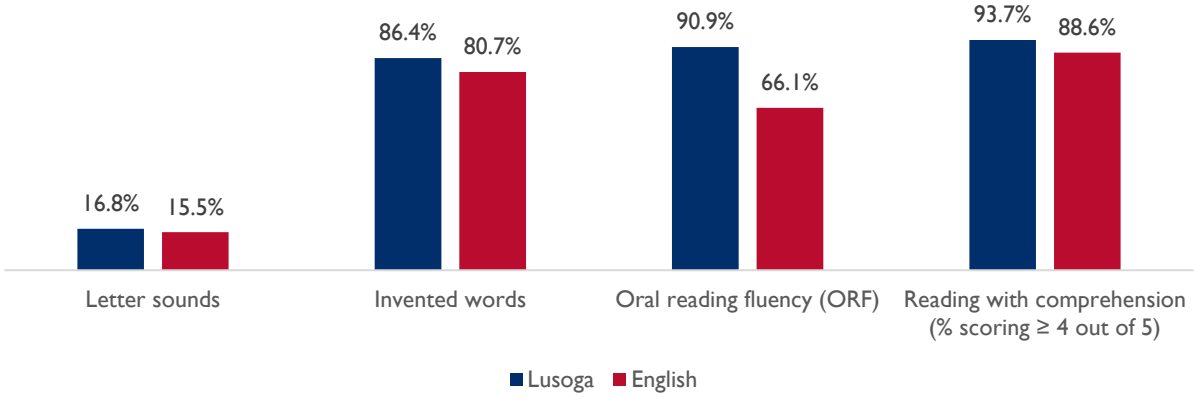


Percentages indicate the proportion of learners reading with comprehension—answering at least 80 percent of questions correctly.

Zero scores

Zero scores indicate that learners cannot answer a single item correctly on a given subtask. Learners struggled least on the letter sound identification subtask, as evidenced by the lowest zero scores of all subtasks, as displayed in Figure 7. In contrast, the vast majority of learners struggled with all three of the other subtasks in Lusoga, with 86.4 percent of learners unable to identify a single invented word, 90.9 percent unable to read a single word in the ORF text, and 93.7 percent unable to answer a single reading comprehension question correctly. Zero scores were slightly lower in English, reflecting relatively stronger performance in English.

Figure 7: Percentage of zero scores by subtask and language

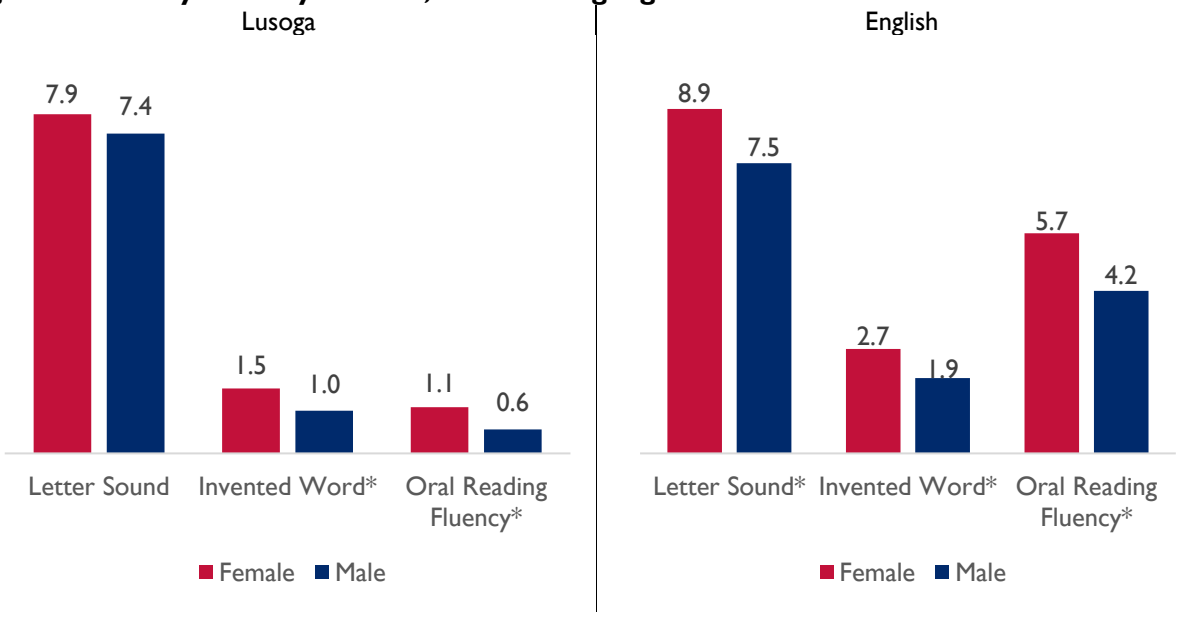


RESULTS BY SEX

Fluency

Although fluency rates were low for both Cohort 2 boys and girls, girls significantly outperformed boys in Lusoga on both the invented word and ORF subtasks and on all subtasks in English, as displayed in Figure 8.

Figure 8: Fluency rates by subtask, sex and language

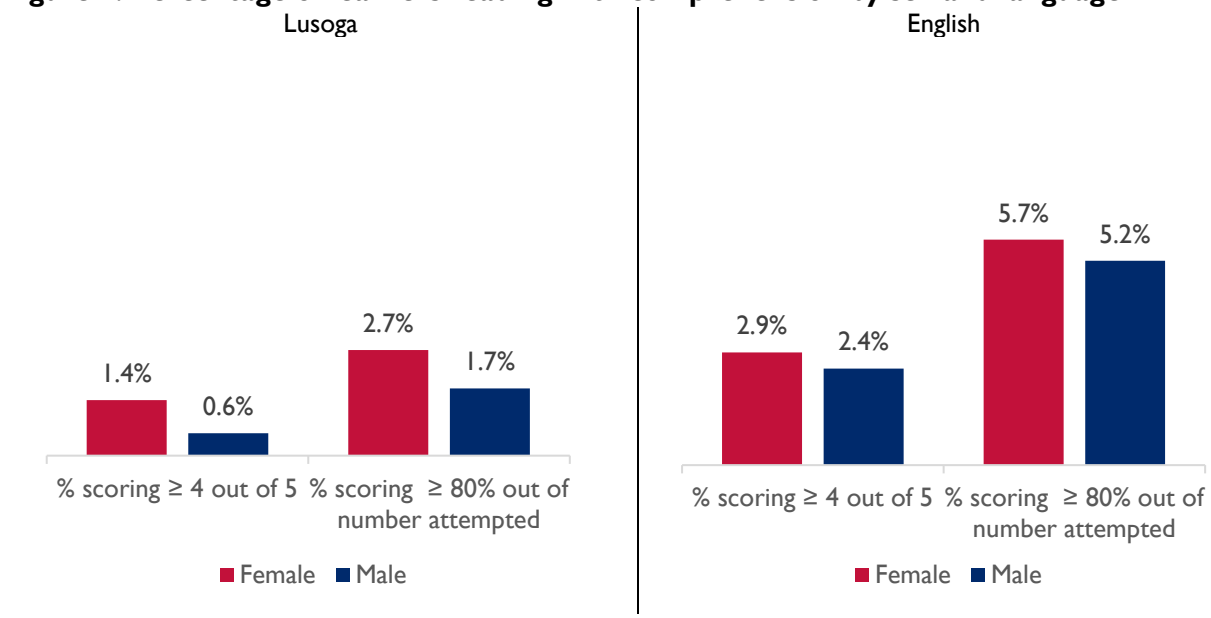


Numbers indicate the number of correct letter sounds identified or invented words and oral reading words read on average. p = ≤ .05

Reading comprehension

As previously explained, the proportion of learners reading with comprehension was slightly higher on the "number attempted" calculation than the "four out of five" calculation. However, for both measures, the proportion of learners reading with comprehension was extremely low, with more than 94 percent unable to correctly answer at least 80 percent of reading comprehension questions. Although the proportion of girls reading with comprehension was slightly higher than boys in both English and Lusoga, the differences were not statistically significant, likely due to the small numbers of learners in each group.

Figure 9: Percentage of learners reading with comprehension by sex and language

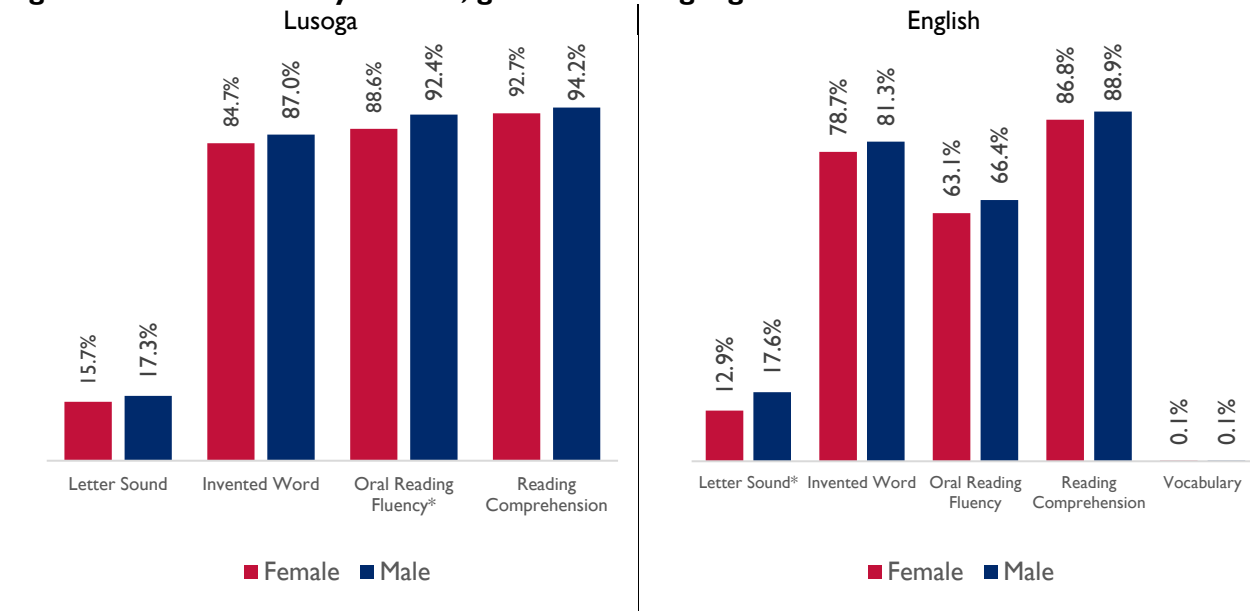


Percentages indicate the proportion of learners reading with comprehension—answering at least 80 percent of questions correctly.

Zero scores

Zero scores by gender were generally comparable, with statistically significant differences in only two of nine subtasks. Girls struggled less than boys on ORF in Lusoga—as indicated by lower zero scores—while in English, boys struggled more than girls in identifying letter sounds.

Figure 10: Zero scores by subtask, gender and language



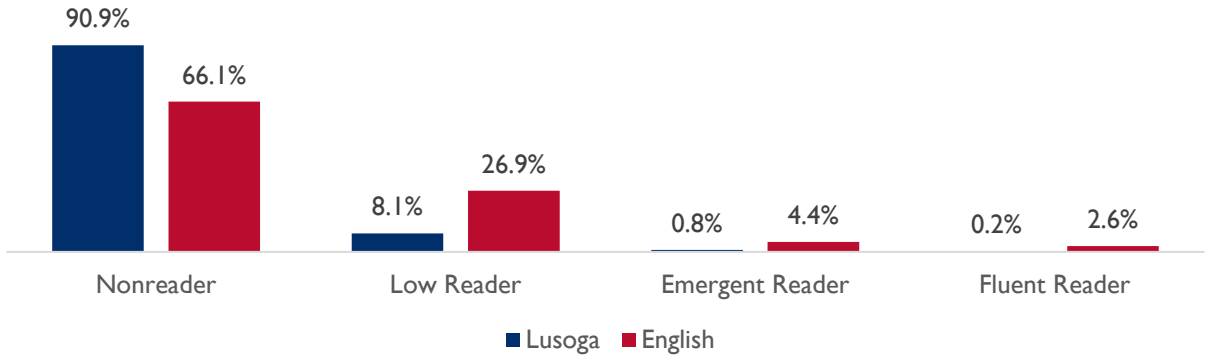
Percentages indicate the percentage of learners on average obtaining zero scores on each subtask, p = ≤ .05

BENCHMARK RESULTS

As with the predecessor project LARA, ICYD uses EGRA results to classify learners into four categories—low readers, emergent readers, fluent readers, and "nonreaders," or learners who were unable to read a single word on the ORF subtask (see box at right). Most learners are classified as nonreaders, as illustrated in Figure 11. Of those who read at least one word, the majority were classified as "low readers," with about one in twelve learners reading between 1 and 20 CWPM in Lusoga and one in four in English.

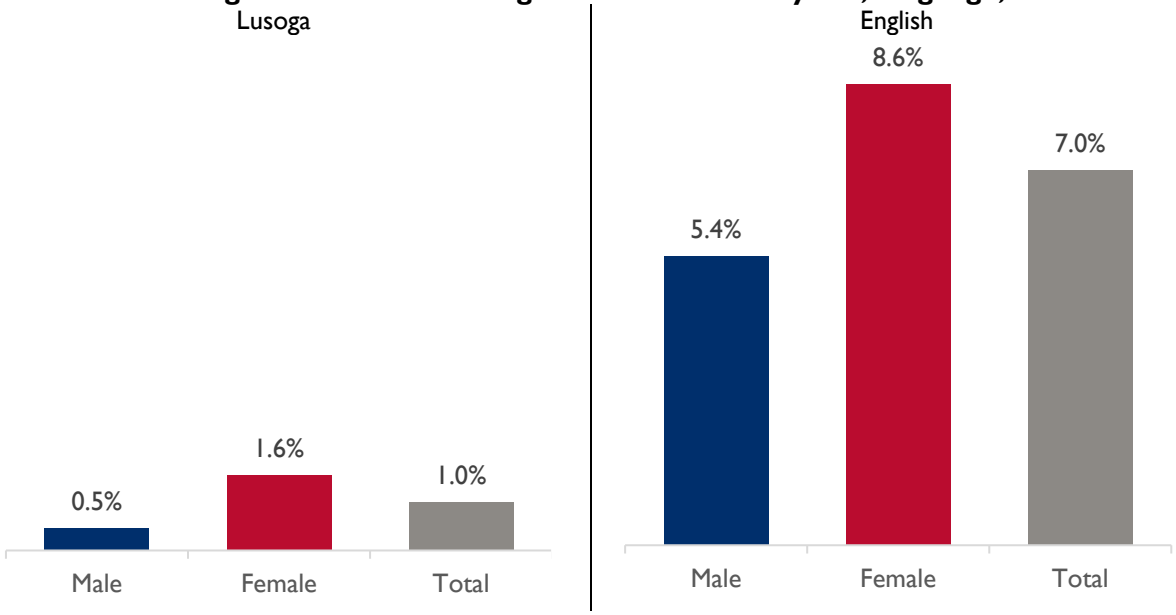
Low readers are able to read 1-20 correct words per minute
Emergent Readers are able to read 21-40 correct words per minute
Fluent Readers are able to read over 40 correct words per minute

Figure 11: Percentage of learners by reading category



ICYD classifies emergent and fluent readers as meeting the minimum proficiency level for reading at the end of P2. In other words, learners who can correctly read 20.5 or more CWPM are considered to be "meeting the benchmark." The proportion of Cohort 2 learners meeting the ORF benchmark is low, as shown in Figure 12. Only 1.0 percent of learners met the benchmark on the Lusoga ORF subtask, and only 7.0 percent of learners did so on the English ORF subtask. A greater proportion of girls than boys reached the benchmark in both Lusoga and English, but these differences were not statistically significant, likely due to the low numbers in each group.

Figure 12: Percentage of learners meeting ORF benchmark by sex, language, and total



CORRELATIONS BETWEEN SUBTASKS

The following tables present correlations between subtask scores or the average number of letter sounds identified, invented words read, words read on the ORF subtask, and comprehension questions answered. All correlations were found to be statistically significant.

Lusoga scores

On the Lusoga EGRA, invented word reading strongly correlates[6] with ORF and reading comprehension. Similarly, ORF strongly correlates with reading comprehension. Importantly, correlations do not indicate a direction between variables, so it is unclear, for example, if higher invented word reading scores contributed to higher ORF scores, if the reverse was true, or if another variable may have influenced them both. Still, because phonics knowledge and fluency are foundational for reading comprehension, it is reasonable to assume that stronger invented word reading and ORF performance played a role in the development of reading comprehension in Lusoga. It is also interesting to note that only **moderate correlations** were found between the letter sound identification subtask and other subtasks, suggesting letter sound knowledge may play a lesser role in developing other skills.

Table 5: Correlations between subtask scores on Lusoga EGRA

Subtask	Letter sound	Invented word	ORF	Reading comp
Letter sound	1.00			
Invented word	0.57	1.00		
Oral reading	0.49	0.90	1.00	
Reading comprehension	0.48	0.80	0.86	1.00

p = ≤ .001

English scores

As with the Lusoga EGRA, invented word reading on the English EGRA strongly correlated with ORF and reading comprehension, and ORF was found to strongly correlate with reading comprehension. Combined, this suggests that both invented word reading and fluency play a role in building English reading comprehension skills. In contrast to the Lusoga EGRA, letter sound knowledge on the English EGRA also strongly correlated with two other subtasks—invented word reading and ORF—suggesting that knowledge of English letter sounds plays a role in helping learners build their ability in invented word reading and oral reading fluency skills. Only moderate correlations were found between vocabulary and the other English subtasks.

Table 6: Correlations between subtask scores on English EGRA

Subtask	Letter sound	Invented word	ORF	Reading comp	Vocab
Letter sound	1.00				
Invented word	0.71	1.00			
Oral reading	0.72	0.85	1.00		
Reading comprehension	0.66	0.77	0.89	1.00	
Vocab	0.49	0.40	0.51	0.47	1.00

p = ≤ .001

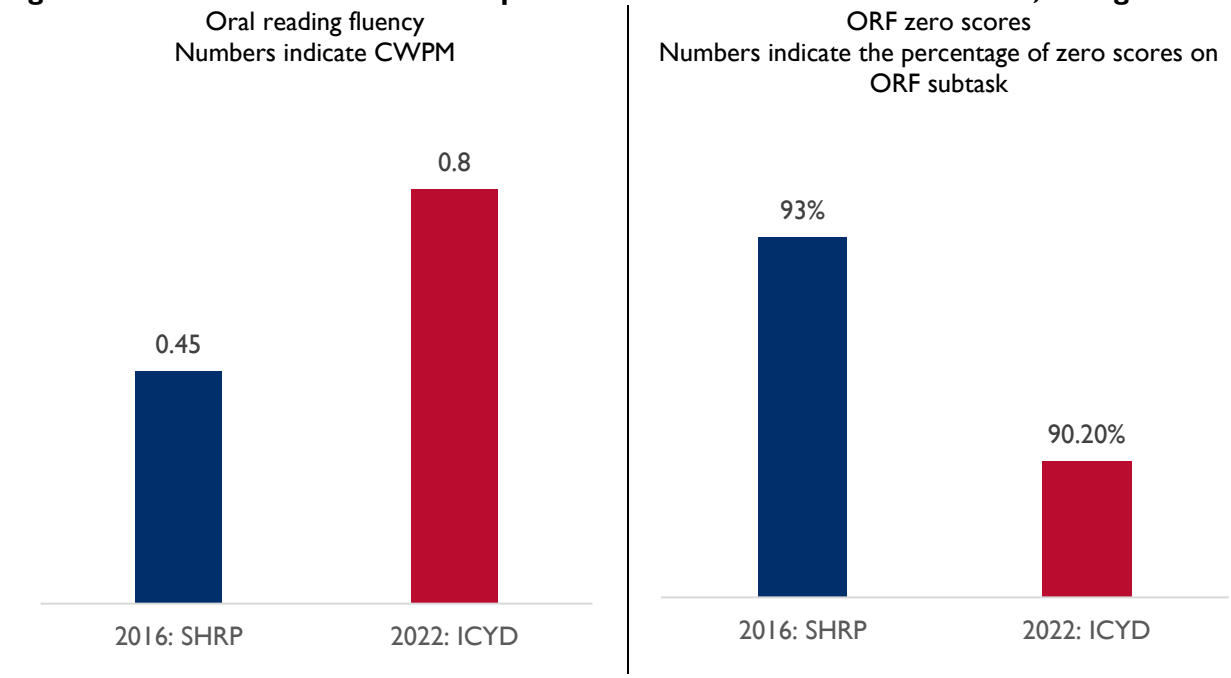
[6] Correlations of greater than 0.7 are considered strong, 0.3 and 0.7 moderate and below 0.3 weak. Source: Sage, 2015.

COMPARISON WITH THE 2016 ASSESSMENT

While the purpose of RQ1 is to capture the performance of Lusoga-speaking learners in P2 in 2022—and not to examine trends over time—it is nevertheless instructive to consider evidence from previous assessments to see how results may have changed over time, especially with the arrival of COVID. In 2016, the USAID-funded project SHRP conducted an endline EGRA with comparable learners—that is, Lusoga-speaking learners at the end of P2. ORF scores from the ICYD Cohort 2 baseline in 2022 (0.8 CWPM) are slightly higher than those of the treatment group from 2016 (0.45 CWPM), and zero scores are slightly lower—90.9 to 93.0 percent, respectively. Nevertheless, in 2022, the ORF rate remains low, and the proportion of learners who did not read a single word remains more than 90 percent. These comparative figures should be viewed with caution, however, because the EGRAs were administered at different time points in the school year and sampling populations and procedures may have varied.[7]

[7] For further information, see Performance & impact evaluation (P&IE) of the USAID/Uganda School Health Reading Program: Result of the USAID/Uganda school health and reading program: Result 1 school level interventions. Impact evaluation, final report. NORC, 2017.

Figure 13: ORF and zero scores compared: SHRP in 2016 and ICYD in 2022, Lusoga EGRA



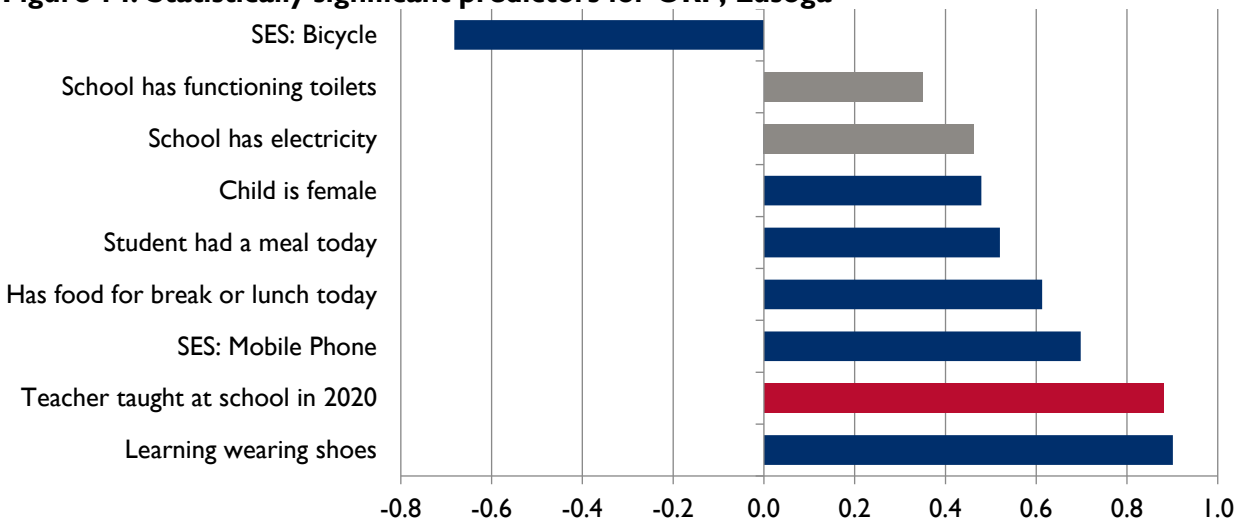
RQ 2: WHICH FACTORS ARE ASSOCIATED WITH STRONGER READING PERFORMANCE?

PREDICTORS OF STRONGER PERFORMANCE

This section presents the results of regressions that identified which variables predicted stronger performance on ORF, reading comprehension, and letter sound identification. These three subtasks were included in order to present as complete a picture as possible. Analyses were run by measuring the strengths of correlations between learner, teacher, head teacher, and school characteristics with learner performance on EGRA subtasks in both Lusoga and English. The graphs present relationships that were found to be statistically significant at the $p \leq .05$ level. Note that results are unweighted in this series.

The first graph shows the extent to which selected variables predicted higher ORF scores on the Lusoga EGRA. As the graph shows, several factors predicted stronger ORF performance, including school conditions, learner characteristics, and socioeconomic status (SES) indicators such as having a mobile phone. The two variables that predicted the greatest difference in performance—that is, predicted reading the most number of words per minute—were learners wearing shoes (0.9 more CWPM) and the teacher teaching in the same school in 2020 (0.88 more CWPM).

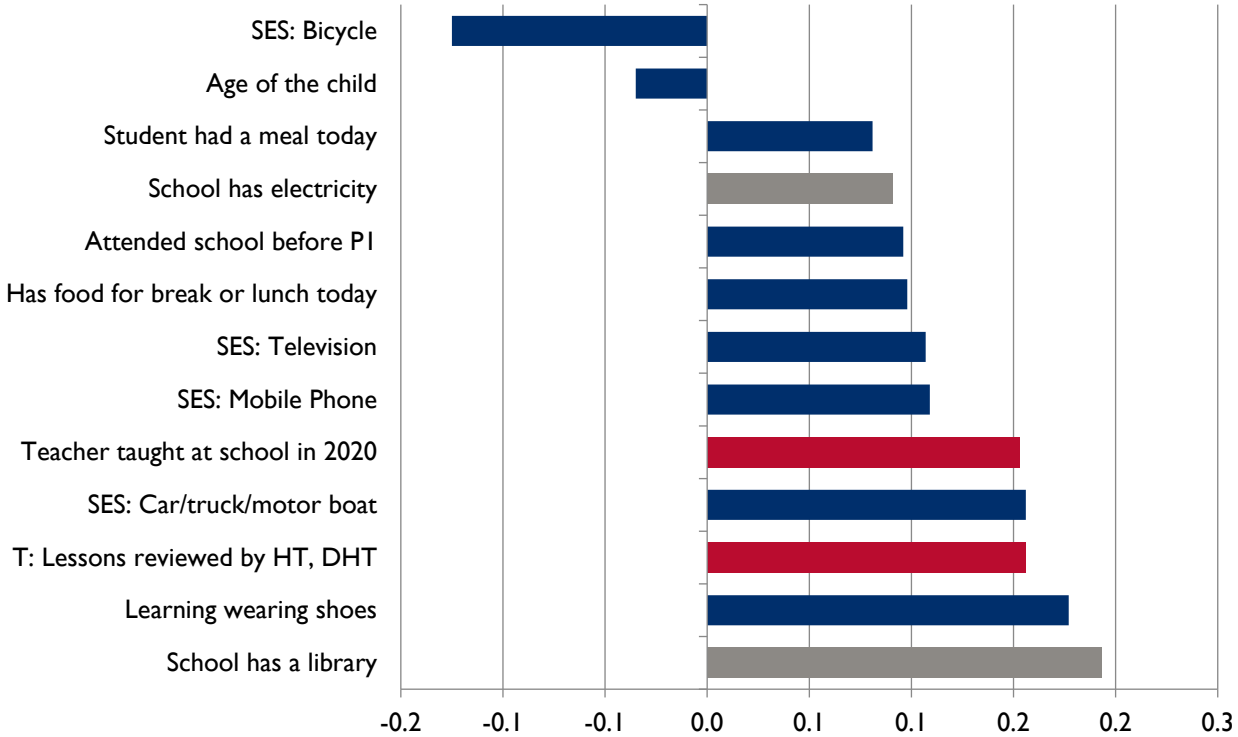
Figure 14: Statistically significant predictors for ORF, Lusoga



Blue refers to the learner survey, red to the teacher survey, and gray to the head teacher survey, p = ≤ .05

As found with the ORF analysis above, certain school conditions, learner characteristics, and SES indicators predicted stronger performance on reading comprehension, as illustrated in Figure 15. The two variables that predicted the biggest difference in reading comprehension were the presence of a school library (+0.19 comprehension questions answered correctly) and learners wearing shoes (+0.18 more reading comprehension questions answered correctly). Although all the variables displayed were found to be statistically significant in predicting differences in performance, the differences were very small, due to the overall poor performance on the subtask.

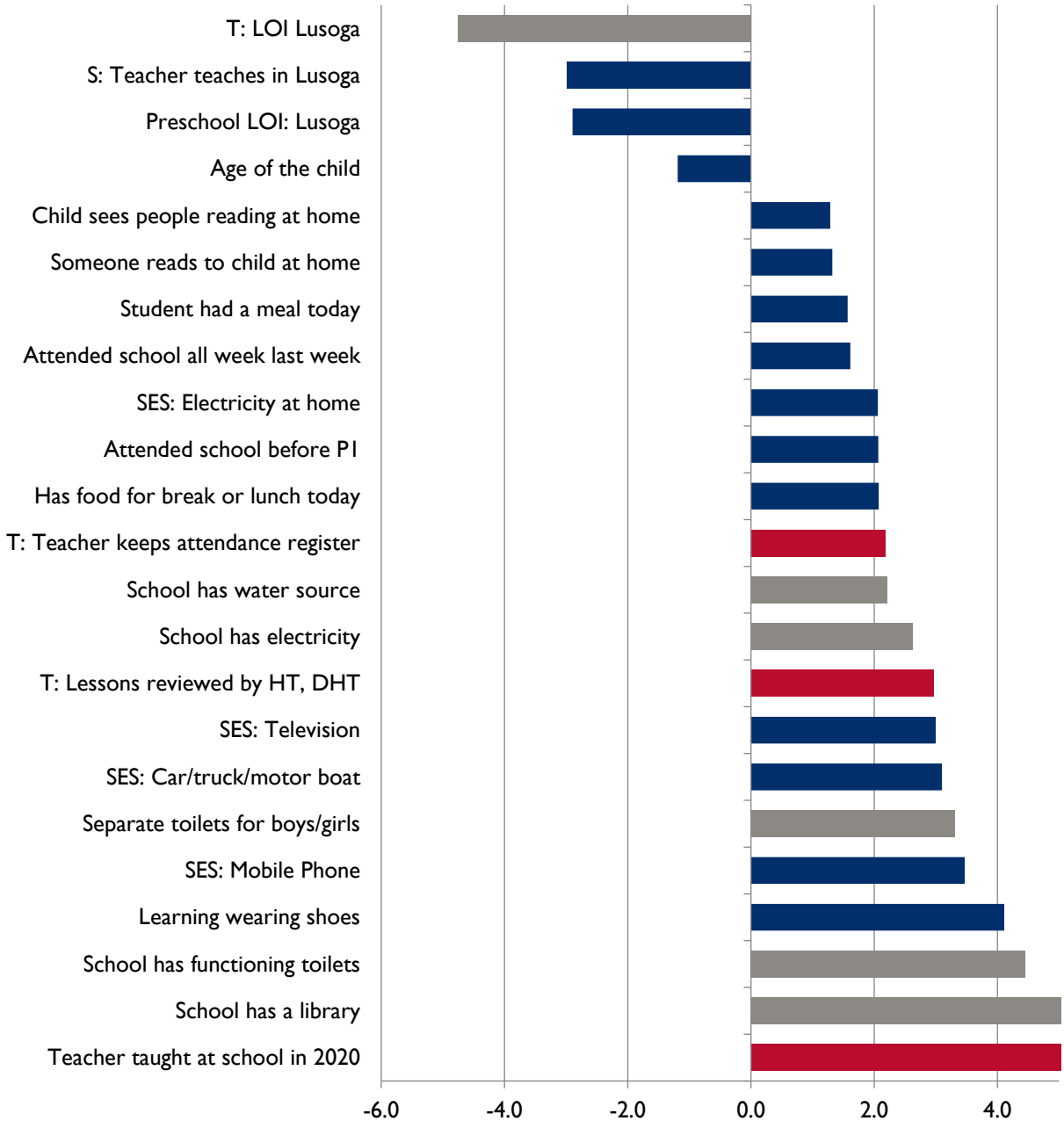
Figure 15: Statistically significant predictors for reading comprehension, Lusoga



Blue refers to the learner survey, red to the teacher survey, and gray to the head teacher survey, p = ≤ .05

As with ORF and reading comprehension, selected school conditions, learner characteristics, and SES indicators predicted stronger letter sound performance, as displayed in Figure 16. In addition, some aspects of the learner's home environment predicted stronger performance on the subtask, including the learner seeing someone read at home or someone reading to the learner at home. The two variables predicting the biggest differences in letter sound knowledge were the teacher teaching at the same school as 2020 (+5.95 letters per minute) and the school having a library (+5.93 letters per minute). Three variables predicted weaker letter sound fluency—the use of Lusoga as the language of instruction (LOI), if the child's preschool language was Lusoga, and the learner's age.

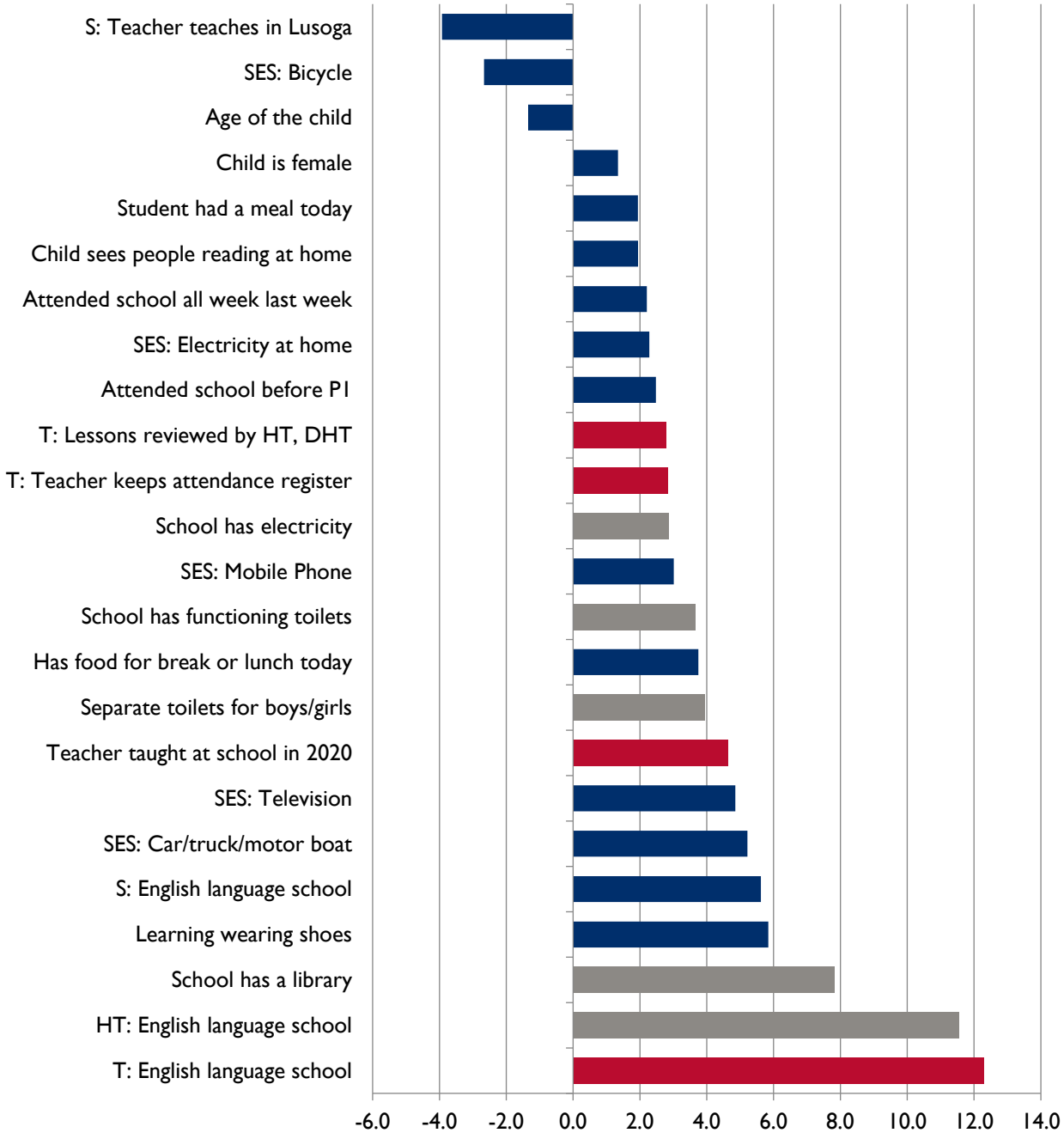
Figure 16: Statistically significant predictors for letter sound fluency, Lusoga



Blue refers to the learner survey, red to the teacher survey, and gray to the head teacher survey, p = ≤ .05

Selected variables also predicted higher scores on English EGRA subtasks. As displayed in Figure 17, the two variables that predicted the greatest increase in ORF performance were the school being an English language school (+11.56 CWPM when reported by the head teachers, +12.29 CWPM when reported by a teacher) and the school having a library (+7.83 CWPM). Although Lusoga is supposed to be the LOI of every school in Lusoga-speaking areas, head teachers and teachers at some schools reported that another language was the LOI, including English. Other variables reflect the same patterns found with the Lusoga EGRA, including weaker performance predicted when the teacher taught in Lusoga, as well as the learner's age.

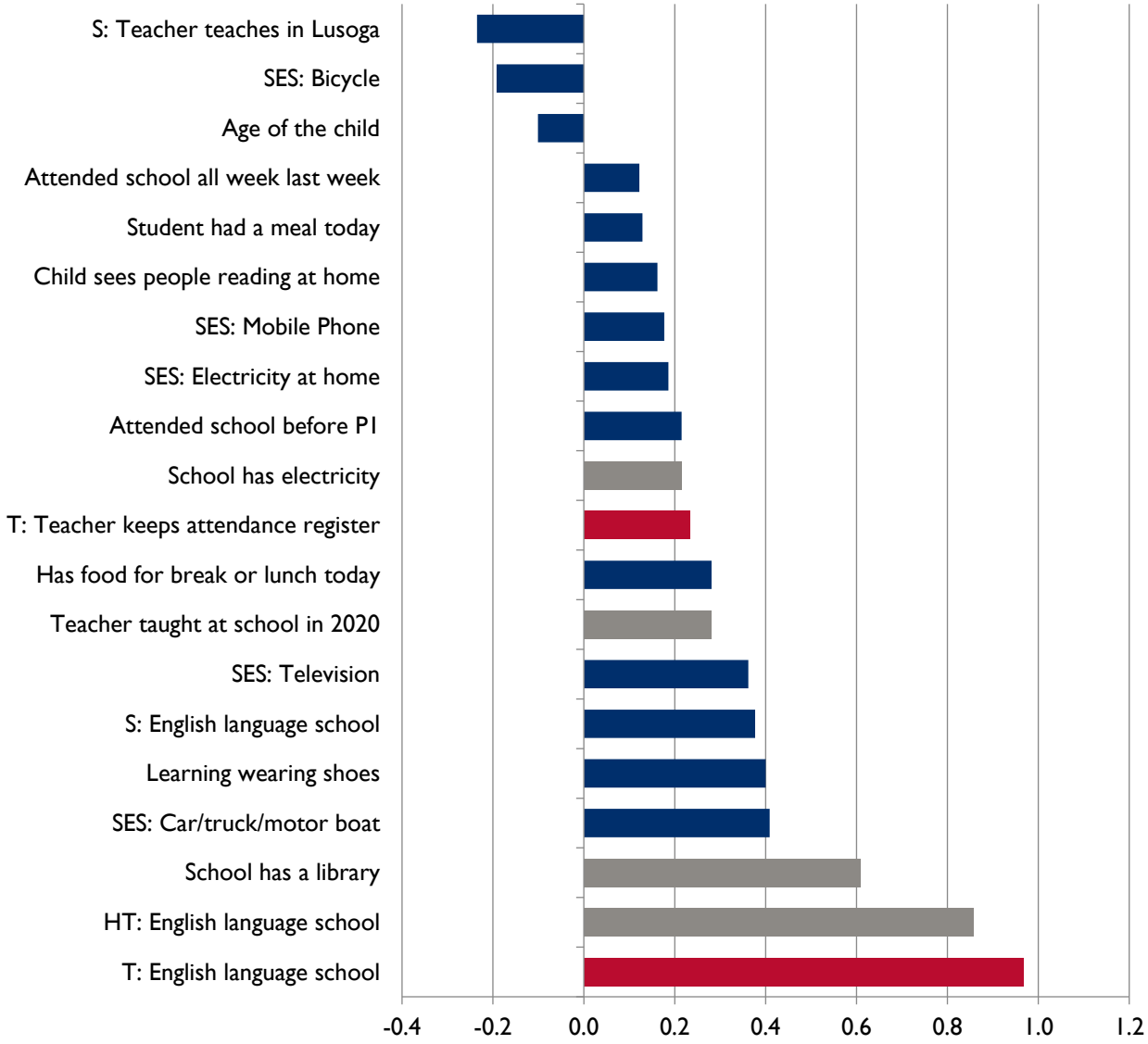
Figure 17: Statistically significant predictors for ORF, English



Blue refers to the learner survey, red to the teacher survey, and gray to the head teacher survey, p = ≤ .05

Certain variables predicted stronger performance on the English reading comprehension subtask, as shown in Figure 18. As with English ORF, the two variables predicting the biggest increase were the school using English as the language of instruction (+0.97 more questions answered correctly when reported by a teacher, +0.86 when reported by a head teacher) and the school having a library (+0.61 more questions answered correctly). Other variables reflected the same patterns found with the Lusoga EGRA, including weaker performance predicted when the teacher taught in Lusoga, as well as the learner's age. As with the Lusoga reading comprehension subtask, although all the variables displayed were found to be statistically significant in predicting differences in performance, the differences were very small, due to the overall poor performance on the subtask.

Figure 18: Statistically significant predictors for reading comprehension, English

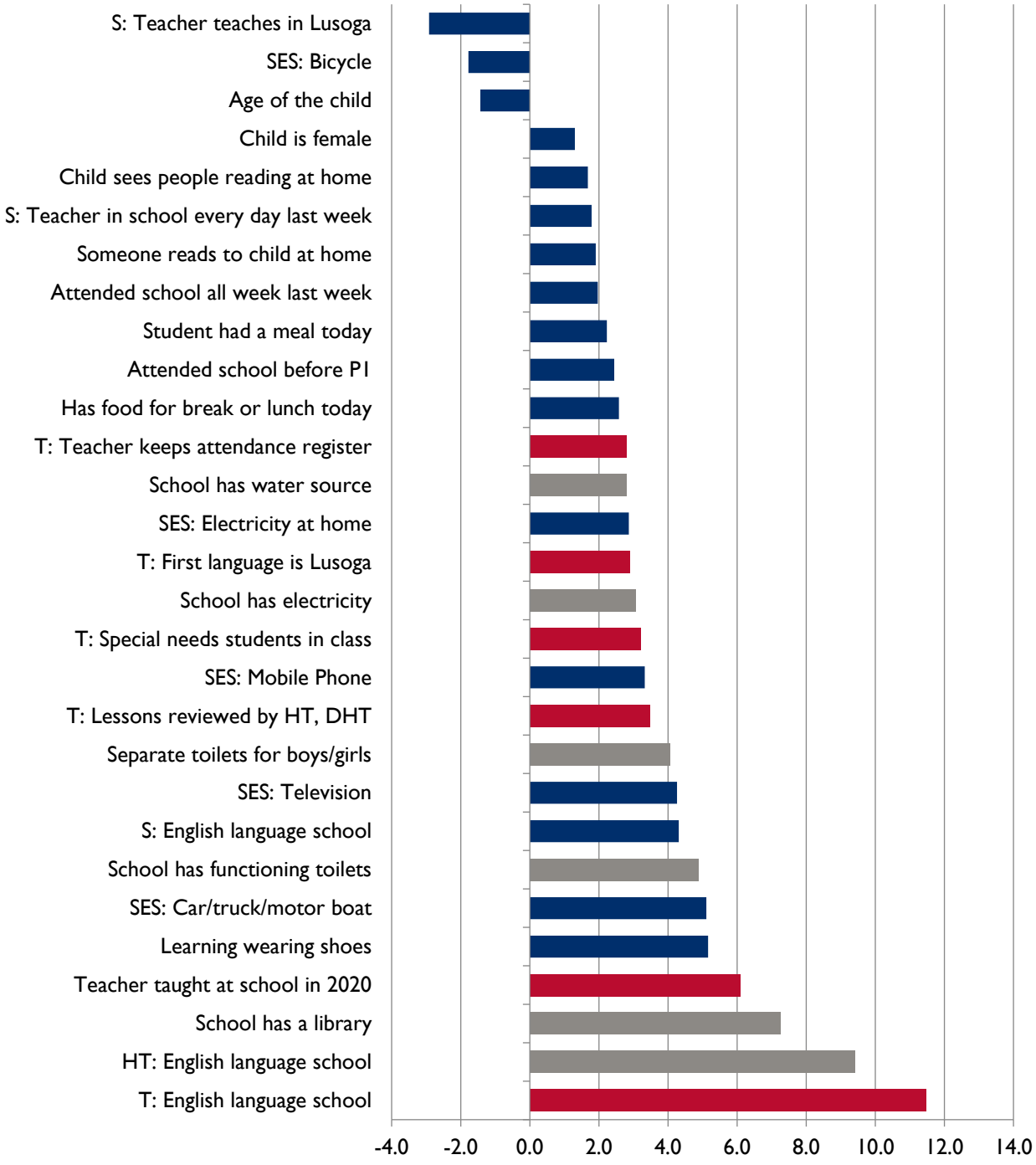


Blue refers to the learner survey, red to the teacher survey, and gray to the head teacher survey, p = ≤ .05

Similar trends emerged for the variables predicting stronger performance in English letter sound knowledge, as presented in Figure 19. The two variables predicting the biggest positive difference were the school using English as the language of instruction (+11.46 more letters per minute when reported

by a teacher, +9.42 when reported by a head teacher) and the school having a library (+7.26 more letters per minute). Again, other variables reflected the same patterns found with the Lusoga EGRA, including weaker performance predicted when the teacher taught in Lusoga, as well as the learner's age.

Figure 19: Statistically significant predictors for letter sound fluency, English



Blue refers to the learner survey, red to the teacher survey, and gray to the head teacher survey, p = ≤ .05

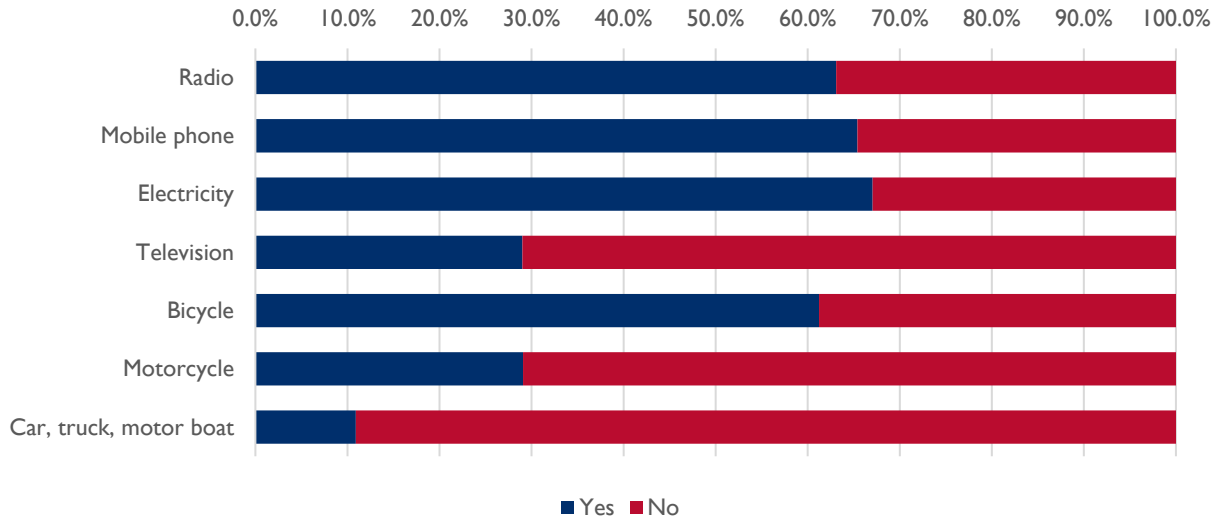
OTHER LEARNER AND TEACHER CHARACTERISTICS

This section presents additional findings from the C2 baseline that may have played a role in learners' reading ability.

Learner poverty

One measure of poverty is a learner's SES, which this assessment measured by asking about the types of objects typically found in higher-income homes. The majority of learners reported having electricity (67.0 percent) in their homes, as well as a mobile phone (65.4 percent) and radio (63.1 percent), which are all typical indications of higher SES, as shown in Figure 20. However, on the day of the assessment, more than half of the learners (53.6 percent) were observed not wearing shoes, which is a proxy for higher poverty. Another measure of poverty is hunger, measured by asking learners when they last ate. More than half of learners (52.9 percent) said the last time they ate a meal or food was the prior evening, and 39.1 percent of learners said they did not pack a meal to eat at school or get food at school.

Figure 20: Percentage of learners with select items in their household



Learners' prior learning

More than two of three learners—69.0 percent—reported that they had attended nursery school or some other type of school before P1. As for repetition, 17.5 percent of learners said they had been in P3 the previous year, while 72.0 percent said they were in P2 the previous school year.

Language match

Learners reported the language they speak at home most of the time, as well as the languages their teacher most often uses in the classroom. The degree to which the learners' home languages and language of instruction in the classroom matched varied considerably.

- **Lusoga:** Although 81.3 percent of learners said they mostly speak Lusoga at home, only 63.3 percent reported that their teacher primarily teaches in Lusoga, which is a difference of nearly 18 percentage points. Nearly the same proportion of teachers—78.1 percent—said their mother tongue is Lusoga.
- **Lusamia:** Although 10.1 percent of learners reported mostly speaking Lusamia at home, only 0.2 percent said their teachers primarily teach in Lusamia. However, 7.8 percent of teachers reported that the language of instruction is Lusamia.
- **English:** The biggest mismatch was in English. While 30.5 percent of learners said their teacher primarily teaches in English, only 0.4 percent said they primarily speak English at home.

Absenteeism

To gauge learners' attendance rates, they were asked if they had been absent at least once the prior week. More than half (55.6 percent) said yes, while 57.4 percent of learners said that their teacher didn't come to school at least one day the previous week. When asked about registers of learner attendance, 87.5 percent of teachers were able to present a copy. Of those with a copy, a notable proportion of teachers—18.8 percent—showed records indicating that a sizeable number of learners—21 to 30—had been absent the previous week.

Training, qualifications, and experience

More than seven in 10 teachers surveyed held the minimum qualification for primary school teachers—Grade III—including 76.2 percent of men and 67.4 percent of women, while 28.1 percent held Grade V certification—19.0 percent of men and 32.6 percent of women. As for teacher training, the vast majority of teachers—87.5 percent—said they had attended in-service training on how to teach reading, as well as had received instruction on teaching in the language of instruction at their school—81.3 percent. As for teaching experience, half of the teachers said they had taught this class for one to five years. Nevertheless, almost all of the teachers—97 percent—said they had taught at the same school in 2020, which indicates limited teacher turnover during that period. A quarter of teachers said they had taught this class for 10 or more years.

Special needs

Three-fourths of teachers reported being aware of learners with special needs in their classes. Teachers most frequently mentioned having learners with visual disabilities (40.6 percent) and hearing disabilities (35.9 percent of teachers). Other teachers reported learners with speech, mobility, or physical disabilities.

In-school support for teachers

Nearly all teachers—96.9 percent—said their head teacher or deputy-head teacher reviewed their lesson plans, with 43.8 percent indicating they were reviewed once every week. Most teachers—89.1 percent—also indicated that someone observed them teaching, and half reported this happened once a week or more frequently. Less than half of teachers—48.4 percent— also reported that a coordinating center tutor (CCT) observes them. However, these observations occur less frequently, as nearly one-third of teachers—32.8 percent—said their CCT observed them once per term. When asked what support would be most helpful, most teachers reported materials and training, with women teachers in particular asking for more training. Other types of support specified reflect the challenging living and working conditions teachers face, as they requested financial support, local language materials, and more personnel to reduce class size.

Table 7: Types of support requested by teachers, by sex

Type of support	Male	Female	Total
Training	57.1%	74.4%	68.8%
In-class support	28.6%	34.9%	32.8%
Materials	66.7%	72.1%	70.3%
Observation & feedback	33.3%	25.6%	28.1%
Other	19.0%	20.9%	20.3%

RQ 3. WHAT ARE THE DRIVERS OF VULNERABILITY TO DROPOUT AND NONATTENDANCE?

Because one of ICYD's objectives is to address drivers of vulnerability, the project constructed a list of

factors most likely to affect dropout and nonattendance. While not directly related to reading outcomes, information on drivers of vulnerability is critical to ICYD's goal of providing support and services to Ugandan children and youth, especially the most vulnerable, to help them lead resilient, healthy, and productive lives. Hence, as part of the Cohort 2 baseline, teachers and head teachers were asked about the **prevalence** of eleven drivers of vulnerability in their schools and communities and how they are being **addressed**. Note that because each type of vulnerability is different, questions were posed in different ways.[8]

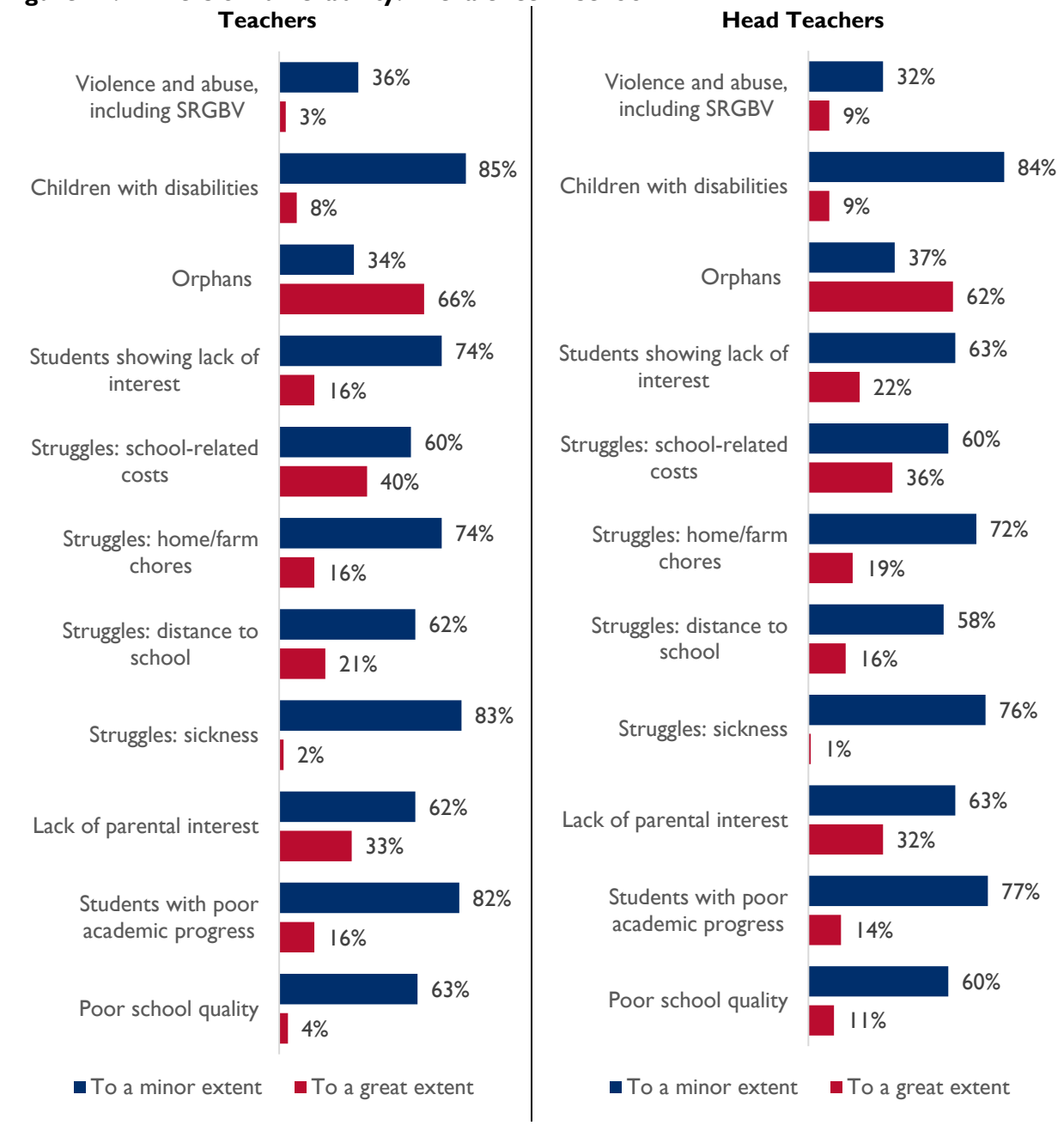
PREVALENCE OF DRIVERS

The following figures show the extent to which teachers and head teachers believe certain conditions exist in their schools. Both respondents most frequently reported orphans as prevalent "to a great extent" in their schools. While the response "not at all" does not appear in the figures, that proportion can be calculated by subtracting percentages from "to a great extent" and "to a minor extent" from 100 percent. By this calculation, the least prevalent driver of vulnerability in schools was violence and abuse, with 61 percent of teachers and 59 percent of head teachers responding "not at all."[9]

[8] When asked about the prevalence of violence and abuse in their schools, teachers and Head Teachers were given three response options: there have been many (more than 3) cases in our community, there have been some (1 or 2) cases in our community, and there have not been any cases in our community. When asked about the prevalence of disability in their schools, teachers and Head Teachers were given three response options: Many (more than 30) children with disabilities in our community, some (1-29) children with disabilities in our community, and no children with disabilities in our community our community. When asked about the prevalence of orphans in their schools, respondents were given three options: Many orphans in our communities (more than 50), some orphans in our communities (1-49), and no orphans in our communities. On all three of these questions, the first response was categorized as "to a great extent" and the second response "to a minor extent." For all other vulnerabilities, respondents were given four response options: many, some, and none in our schools. For these, many was classified as "to a great extent" and some "to a minor extent."

[9] Due to the large number of drivers presented in this section, percentages are presented without decimals.

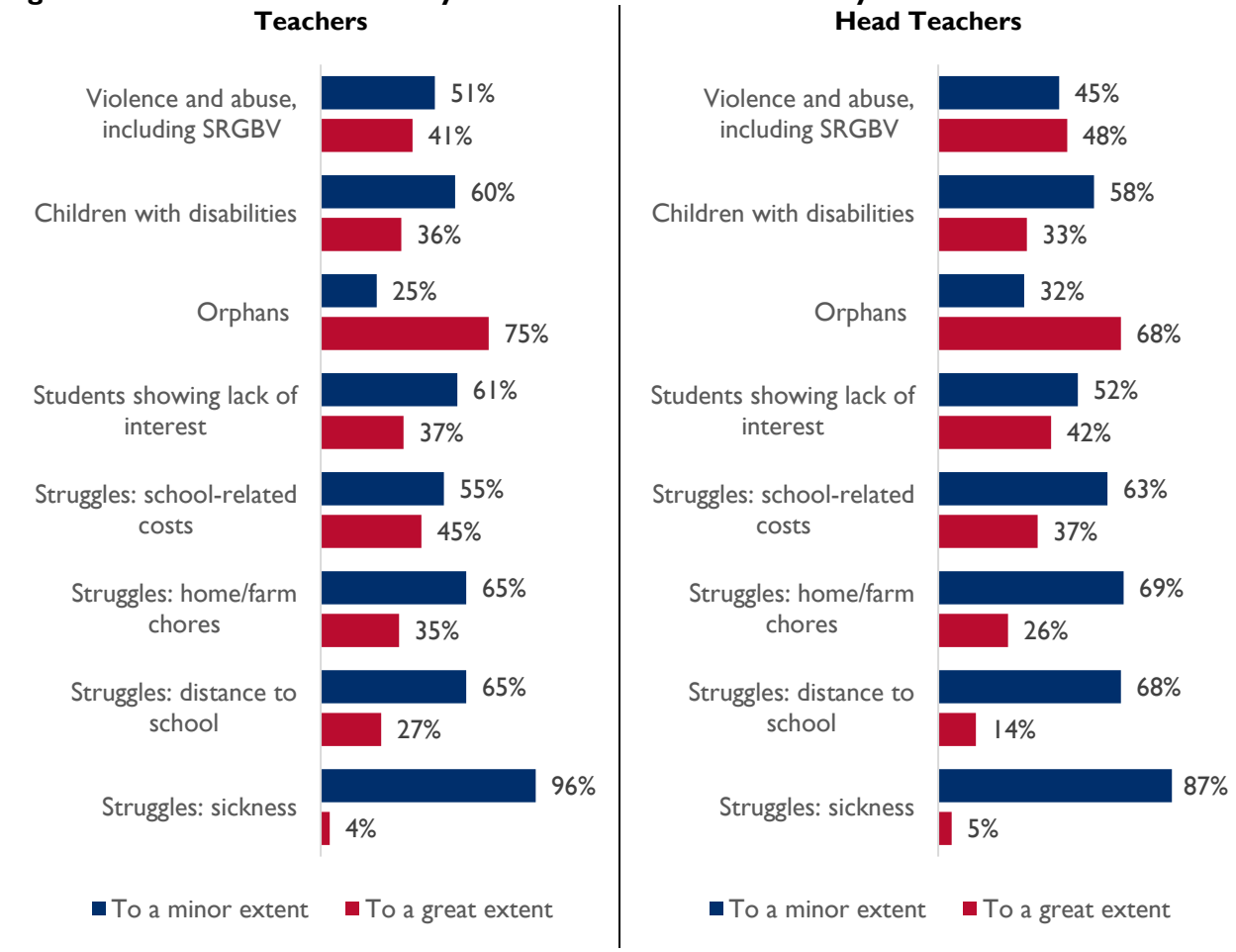
Figure 21: Drivers of vulnerability: Prevalence in school



Respondents were asked: In your opinion, to what extent do the following conditions exist in your school?

As with their schools, teachers and head teachers also reported orphans as the most prevalent driver of vulnerability in their **communities** as well. Responses of "not at all" were much less frequent when pertaining to communities, indicating that teachers and head teachers more frequently considered all these drivers of vulnerability as existing at least to some extent in their communities, most notably violence and abuse. Although teachers and head teachers identified violence and abuse as the least prevalent driver of vulnerability in their schools, 41 percent of teacher and 48 percent of head teachers said violence and abuse, including SRGBV, was prevalent to a great extent in their communities.

Figure 22: Drivers of vulnerability: Prevalence in the community

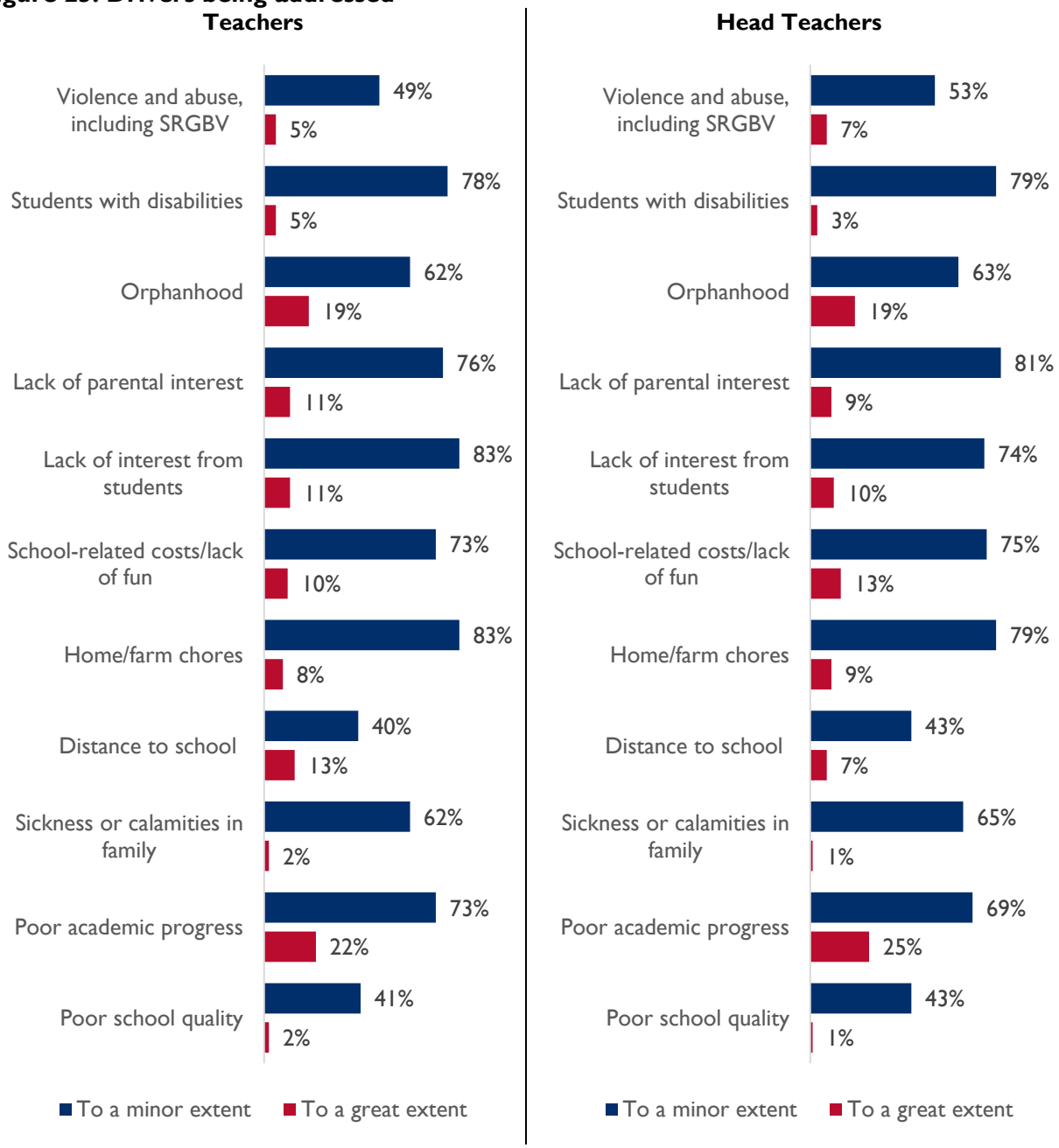


Respondents were asked: In your opinion, to what extent do the following conditions exist in your community?

DRIVERS BEING ADDRESSED

The following graphs illustrate that more than half of teachers and head teachers felt that actors in the school community were addressing nearly all drivers of vulnerability "to a minor extent." Teachers and head teachers both believed that actors were most responsive in addressing "poor academic progress," with 22 percent and 25 percent, respectively, reporting that actors were addressing it "to a great extent." Conversely, more than half of teachers (57 percent) and head teachers (56 percent) reported that actors were doing nothing to address "poor school quality."

Figure 23: Drivers being addressed



DISCUSSION AND RECOMMENDATIONS

This report presents the findings of an EGRA conducted in March 2022 in Lusoga-speaking zones served by ICYD. The assessment consisted of four subtasks, administered in both Lusoga and English to 1,393 learners in 70 government schools at the beginning of the P3 academic year as a proxy for end-of-P2 performance. In addition to the EGRA, surveys were administered with learners, teachers, and head teachers to collect demographic information, identify conditions associated with learning, and understand the prevalence of drivers of vulnerability and if they were being addressed.

This section discusses salient patterns emerging from the findings and provides recommendations based on patterns.

DISCUSSION

Why is the association between letter sound fluency and other reading skills weaker with the Lusoga EGRA than with the English? While this assessment found strong correlations between EGRA scores on letter sound identification and the other subtasks in English, the correlation between letter sound identification and other subtasks in Lusoga was only moderate. Why might this be? First, unlike English, Lusoga is a tonal language, so linkages between letter sounds and other reading skills in Lusoga might be weaker than in English due to their complexity in Lusoga. Second, like other Bantu languages, Lusoga is agglutinative, which may be one reason learners read fewer words per minute in Lusoga than in English. Additional information from EGRAs in Lusoga and other Bantu languages might confirm or refute these hypotheses.

Certain variables associated with stronger reading performance are within the control of ICYD. While some variables associated with stronger reading performance are beyond the control of a project like ICYD, such as learners wearing shoes, the project may be able to have an impact on other predictors of stronger reading performance through direct intervention or policy initiatives. Possible intervention ideas include the following:

- ***Teachers remaining at the same schools***. One of the top, albeit modest, predictors for stronger performance in Lusoga letter sound identification and ORF was having a teacher who reported being in the same school as 2020—a measure of low teacher turnover. This measure of workforce stability predicted even greater gains on the English EGRA. Such consistent evidence suggests that when teachers remain at their schools, learners' performance increases, perhaps because consistency enables teachers to understand their learners better, build relationships, and become better literacy teachers.
- ***School libraries***. Having a library at the school was perhaps the biggest predictor of stronger performance on both the Lusoga and English EGRAs, constituting one of the top two predictive variables for two of the Lusoga subtasks and all three English ones. Such a finding makes a strong case for direct intervention or policy initiatives prioritizing establishing or using libraries in schools as a key strategy for improving learning outcomes.

ICYD has an opportunity to build on existing observation practices. Based on teacher and head teacher interview responses, a substantial base of in-school teacher support appears to exist in ICYD schools included in this EGRA. In most cases, head teachers or other school officials review teachers' lesson plans, and half of all teachers reported being observed by head teachers or other school officials at least once a week. In addition, CCTs provide additional observation support. Such practices constitute a foundation of in-school support upon which schools could build to reinforce teachers' instructional skills in literacy.

RECOMMENDATIONS

The Cohort 1 Midline conducted by ICYD in November 2021 listed several recommendations pertaining to this EGRA. Notably, the validity of the ORF benchmark should be evaluated in light of the different linguistic feathers of Ugandan languages and English, the nature of language mismatches and their effects on teaching and learning should be investigated, and teachers' and head teachers' perspectives on drivers of vulnerability should be triangulated with other sources.

In addition to those recommendations, the following are proposed based on the findings from the 2022 Cohort 2 baseline.

1. **Focus on the variables on which ICYD can have an impact.** As noted above, this EGRA found a number of variables upon which it is unlikely that a project like ICYD can have an impact in the near term, including learners' SES. But ICYD can act on several predictors of stronger EGRA performance, such as low teacher turnover and the presence of school libraries, either in terms of direct intervention or advocating for policy initiatives.
2. **Examine how English is used in Lusoga-speaking schools and analyze results by school type—Lusoga LOI vs. English LOI.** Learners' stronger performance on English subtasks and the use of English as the language of instruction being a predictor of stronger performance suggest two things: (1) that English language use in Lusoga-speaking schools reinforces learning and, in some instances, may constitute more instructional time than instruction using Lusoga; and (2) schools that use English as the language of instruction comprise higher-performing schools. ICYD would benefit from a greater understanding of these two situations in order to optimize interventions for learners studying in different contexts.
3. **Examine the role played by letter sound fluency in Lusoga.** Performance on the English letter sound identification subtask strongly correlated with performance on other subtasks, but the correlations were only moderate for Lusoga. This difference may provide clues about the role letter sound knowledge plays in Lusoga in preparing learners for decoding, ORF, and reading comprehension. Does it play a minor role and, therefore, should not comprise a large portion of reading instruction? This assumption may be true if letter sound knowledge does not prepare learners for reading in tonal languages the way it does in nontonal languages like English. Or is letter sound knowledge in fact foundational for later learning but simply not taught sufficiently well at this time? Further examination may provide clues concerning the amount of time that should be spent on teaching letter sounds or, if it is indeed foundational for learning other reading skills in tonal languages, how it could be taught more effectively.

ANNEX A: DETAILED LEARNER SURVEY TABLES

Table A1: Baseline (2022) Learner Survey: Frequency of Responses by Language of Instruction

	Responses	Lusoga
		Percentage
Participant gender	Female	50.18%
	Male	49.82%
Do you speak [language] at home most of the time?	Female	82.40%
	Male	80.12%
If no, what language do you speak at home most of the time?	English	2.30%
	Ateso	3.07%
	Leblango	0.38%
	Leb Acoli	0.77%
	Lumasaaba	1.53%
	Lugbarati	0.38%
	Luganda	14.56%
	Other	77.01%
Does your teacher teach you in [language] most of the time?	Female	63.95%
	Male	62.68%
If no, what language does your teacher teach you in most of the time?	English	83.33%
	Luganda	1.18%
Is learner wearing shoes?	Female	49.21%
	Male	43.52%
Did you pack anything to drink or eat for your break or lunch today?	Female	21.89%
	Male	19.60%
When is the last time you ate a male/ate food?	This morning before school	39.48%
	Yesterday evening	52.91%
	I ate some food at school today	4.38%
	Yesterday during the day	1.36%
	No response	1.79%
	Female	63.09%

	Responses	Lusoga
		Percentage
Do you have a radio at your home?	Male	67.72%
Does anyone at your home have a mobile phone?	Female	95.71%
	Male	96.54%
Do you have electricity at your home?	Female	65.38%
	Male	68.73%
Do you have a television at your home?	Female	29.18%
	Male	28.82%
Do you have a bicycle at your home?	Female	59.80%
	Male	62.68%
Do you have a motorcycle at your home?	Female	27.04%
	Male	31.12%
Do you have a car, truck, or boat with engine at your home?	Female	10.01%
	Male	11.82%
Did you go to school before P1?	Female	70.96%
	Male	67.00%
What language did your teach you in at preschool or nursery school?	English	26.01%
	Ateso	0.10%
	Leblango	0.10%
	Runyankore-Rukiga	0.10%
	Leb Acoli	0.10%
	Lumasaaba	0.31%
	Lugbarati	0.10%
	Runyoro-Rutooro	0.10%
	Lusoga	60.67%
	Luganda	3.95%
	Other	7.70%
If you were in primary school in 2020, what class were you in?	P1	8.83%
	P2	72.00%
	P3	17.52%
	P4	0.57%
Is there any day last week you did not come to school?	Female	56.51%
	Male	54.61%
Is there any day that your teacher did not come to school last week?	Female	56.65%
	Male	58.21%
	Female	61.80%

	Responses	Lusoga
		Percentage
Did you study in this school in 2020?	Male	66.86%
Have you been attending this school since P1?	Female	52.93%
	Male	58.21%
Do you bring home books from your classroom or from the school library to read?	Female	36.19%
	Male	34.15%
Does anyone read to you or with you at your home?	Female	64.95%
	Male	64.55%
Do you see anyone in your home read newspapers, religious texts, or books?	Female	57.65%
	Male	57.49%

ANNEX B: DETAILED TEACHER SURVEY TABLES

Table B1: Baseline (2022) Teacher Survey: Frequency of Responses by Language of Instruction

Responses		Lusoga
		Percentage
P3 Classes Taught	Female	67.19%
	Male	32.81%
What is your first (maternal) language or home language?	Luganda	3.13%
	Lusoga	78.13%
	Other	18.75%
What is the language of instruction in P1-P3 in the school?	English	15.63%
	Lusoga	76.56%
	Other	7.81%
Do you speak this language?	Female	100.00%
	Male	100.00%
Have you received any instruction on teaching in this language?	Female	79.07%
	Male	85.71%
Is this the same language that you use for teaching most of the time?	Female	74.42%
	Male	95.24%
What is your highest level of academic or professional qualification?	Grade III/Teaching Certificate	70.31%
	Grade V/Diploma	28.13%
	Other	1.56%
Did you teach in this school in 2020?	Female	95.35%
	Male	100.00%
Have you attended any in-service training on how to teach reading?	Female	86.05%
	Male	90.48%
Have you been able to apply what you learned in the reading training session(s)?	Female	81.40%
	Male	90.48%
Do you keep a register of learner attendance?	Female	97.67%
	Male	100.00%
	Female	95.35%

Responses		Lusoga
		Percentage
Could I please see your learner attendance register?	Male	71.43%
Attendance records taken last week?	Female	93.02%
	Male	66.67%
Does the head teacher, deputy head teacher, or anyone else at the school ever check or review your lesson plans?	Female	97.67%
	Male	95.24%
If yes, how often are lesson plans reviewed?	Once per term	20.31%
	Once every month	17.19%
	Once every week	43.75%
	Daily	15.63%
How frequently does your head teacher, deputy head teacher, subject head, or someone else at the school observe your teaching?	Once every term	15.63%
	Once every month	23.44%
	Once every week or more frequently	50.00%
How often did a Coordinating Center Tutor (CCT) observe you teaching in class?	Once a year	3.13%
	Once every term	32.81%
	Once every month	10.94%
	Once every two weeks	1.56%
Did the CCT offer support in teaching reading?	Female	30.23%
	Male	52.38%
What kind of support would be most useful for you to improve your ability to teach reading? (Mark all that apply)	Training	68.75%
	In-class support	32.81%
	Materials	70.31%
	Observation and feedback	28.13%
	Other	20.31%
Are you aware of learners with special needs in your class?	Female	76.74%
	Male	71.43%
What kind of special needs do you see among the learners in your class?	Hearing	35.94%
	Visual	40.63%
	Mental	15.63%
	Other	26.56%
Prevalence of violence and abuse, including SRGBV, in your school	There have been some (1 or 2) cases in our school	32.81%

Responses		Lusoga
		Percentage
	There have been many (more than 3) cases in our school	4.69%
Prevalence of violence and abuse, including SRGBV, in your community	There have been some (1 or 2) cases in our community	40.63%
	There have been many (more than 3) cases in our community	31.25%
Prevalence of children with disabilities in your school	Some (1-9) children with disabilities in our school	81.25%
	Many (more than 10) children with disabilities in our school	7.81%
Prevalence of children with disabilities in your community	Some (1-9) children with disabilities in our community	48.44%
	Many (more than 10) children with disabilities in our community	28.13%
Prevalence of orphans in your school	Some (1-9) orphans in our school	32.81%
	Many (more than 10) orphans in our school	65.63%
Prevalence of orphans in your community	Some (1-9) orphans in our community	20.31%
	Many (more than 10) orphans in our community	64.06%
Prevalence of lack of parental interest in school	A few parents (less than half) lack interest in school	60.94%
	Most parents (over half) lack interest in school	31.25%
Prevalence of learners in the school who lack interest in school	A few learners (less than half) lack interest in school	67.19%
	Most learners (over half) lack interest in school	14.06%
Prevalence of learners in the community who lack interest in school	A few children and youth (less than half) in our community lack interest in school	56.25%
	Most children and youth (over half) in our	32.81%

Responses		Lusoga
		Percentage
	community lack interest in school	
Prevalence of learners in the school who struggle with school-related costs/lack of funding	Some (less than half of) learners struggle with school-related costs/financial hardship	60.94%
	Most (more than half of) learners struggle with school-related costs/financial hardship	39.06%
Prevalence of learners in the community who struggle with school-related costs/lack of funding	Some (less than half of) learners in our community struggle with school-related costs/financial hardship	45.31%
	Most (more than half of) learners in our community struggle with school-related costs/financial hardship	39.06%
Prevalence of learners in the school who struggle with home or farm chores	Some (less than half of) learners struggle with home or farm chores	71.88%
	Most (more than half of) learners struggle with home or farm chores	17.19%
Prevalence of learners in the community who struggle with home or farm chores	Some (less than half of) learners in our community struggle with home or farm chores	54.69%
	Most (more than half of) learners in our community struggle with home or farm chores	28.13%
Prevalence of learners at school who struggle with distance to school	Some (less than half of) learners in our school struggle with distance to school	60.94%
	Most (more than half of) learners in our school struggle with distance to school	20.31%
Prevalence of learners at school who struggle with sickness or family calamities	Some (less than half of) learners in our school struggle with sickness or family calamities	79.69%

Responses		Lusoga
		Percentage
	Most (more than half of) learners in our school struggle with sickness or family calamities	1.56%
Prevalence of learners in community who struggle with sickness or family calamities	Some (less than half of) learners in our communities struggle with sickness or family calamities	73.44%
	Most (more than half of) learners in our communities struggle with sickness or family calamities	3.13%
Prevalence of learners at school who struggle with poor academic progress	Some (less than half of) learners in our school struggle with poor academic progress	81.25%
	Most (more than half of) learners in our school struggle with poor academic progress	15.63%
Prevalence of learners who struggle with poor school quality	Some (less than half of) learners in our school struggle with poor school quality	54.69%
	Most (more than half of) learners in our school struggle with poor school quality	3.13%
Violence and abuse, including SRGBV	To a minor extent	50.00%
	To a great extent	4.69%
Learners with disabilities	To a minor extent	78.13%
	To a great extent	4.69%
Orphanhood	To a minor extent	60.94%
	To a great extent	18.75%
Lack of parental interest	To a minor extent	76.56%
	To a great extent	10.94%
Lack of interest from learners	To a minor extent	81.25%
	To a great extent	12.50%
School-related costs/lack of funding	To a minor extent	71.88%
	To a great extent	9.38%
Home/farm chores	To a minor extent	81.25%

Responses		Lusoga
		Percentage
	To a great extent	7.81%
Distance to school (school too far away)	To a minor extent	40.63%
	To a great extent	12.50%
Sickness or calamities in family	To a minor extent	62.50%
	To a great extent	1.56%
Poor academic progress	To a minor extent	73.44%
	To a great extent	21.88%
Poor school quality	To a minor extent	42.19%
	To a great extent	1.56%

ANNEX C: ADDITIONAL CORRELATIONS

Overall

School and Home Lang vs. ORF	ORF	SL = MT
ORF	1	0.007
SL = MT	0.007	1
sig	0.023	0.000

Lusoga

School and Home Lang vs. ORF	ORF	SL = MT
ORF	1.000	0.007
SL = MT	0.007	1.000
sig	0.023	0.000

SES Composite vs. ORF	ORF	SES
ORF	1	0.003
SES	0.003	1
sig	0.372	0.000

SES Composite vs. ORF	ORF	SES
ORF	1	0.002942
SES	0.002942	1
sig	0.372311	0

Bring Books Home vs. ORF	ORF	Books @ Home
ORF	1	0.000
Books @ Home	0.000	1
sig	0.915	0.000

Bring Books Home vs. ORF	ORF	Books @ Home
ORF	1	-0.00035
Books @ Home	-0.00035	1
sig	0.914695	0

Read w/ @ home vs. ORF	ORF	Read @ Home
ORF	1	0.023
Read @ Home	0.023	1
sig	0.000	0.000

Read w/ @ home vs. ORF	ORF	Read @ Home
ORF	1	0.023356
Read @ Home	0.023356	1
sig	0.00	0

See Readers @ Home vs. ORF	ORF	See Reading
ORF	1	0.048
See Reading	0.048	1
sig	0.000	0.000

See Readers @ Home vs. ORF	ORF	See Reading
ORF	1	0.048375
See Reading	0.048375	1
sig	0.00	0

Overall

School and Home Lang vs. Read Comp	Read Comp	SL = MT

Lusoga

School and Home Lang vs. Read Comp	Read Comp	SL = MT

Read Comp	1	0.031
SL = MT	0.031	1
sig	0.00	0

Read Comp	1	0.030727
SL = MT	0.030727	1
sig	1.18E-20	0

SES Composite vs. Read Comp		
	Read Comp	SES
Read Comp	1	0.040
SES	0.040	1
sig	0.00	0

SES Composite vs. Read Comp		
	Read Comp	SES
Read Comp	1	0.039951
SES	0.039951	1
sig	8.5E-34	0

Bring Books Home vs. Read Comp		
	Read Comp	Books @ Home
Read Comp	1	0.008
Books @ Home	0.008	1
sig	0.022493	0

Bring Books Home vs. Read Comp		
	Read Comp	Books @ Home
Read Comp	1	0.007537
Books @ Home	0.007537	1
sig	0.022493	0

Read w/ @ home vs. Read Comp		
	Read Comp	Read @ Home
Read Comp	1	0.036
Read @ Home	0.036	1
sig	0.00	0

Read w/ @ home vs. Read Comp		
	Read Comp	Read @ Home
Read Comp	1	0.036252
Read @ Home	0.036252	1
sig	4.04E-28	0

See Readers @ Home vs. Read Comp		
	Read Comp	See Reading
Read Comp	1	0.048
See Reading	0.048	1
sig	0.00	0

See Readers @ Home vs. Read Comp		
	Read Comp	See Reading
Read Comp	1	0.048203
See Reading	0.048203	1
sig	2.11E-48	0

Overall		
School and Home Lang vs. CLSPM		
	CLSPM	SL = MT
CLSPM	1	0.043
SL = MT	0.043	1
sig	0.000	0

Lusoga		
School and Home Lang vs. CLSPM		
	CLSPM	SL = MT
CLSPM	1	0.042738
SL = MT	0.042738	1
sig	1.96E-38	0

SES Composite vs. CLSPM		
	CLSPM	SES
CLSPM	1	0.127318
SES	0.127	1
sig	0.000	0

SES Composite vs. CLSPM		
	CLSPM	SES
CLSPM	1	0.127318
SES	0.127318	1
sig	0.00	0

Bring Books Home vs. CLSPM		
	CLSPM	Books @ Home
CLSPM	1	-0.03118
Books @ Home	-0.031	1
sig	0.000	0

Bring Books Home vs. CLSPM		
	CLSPM	Books @ Home
CLSPM	1	-0.03118
Books @ Home	-0.03118	1
sig	3.69E-21	0

Read w/ @ home vs. CLSPM		
	CLSPM	Read @ Home
CLSPM	1	0.075975
Read @ Home	0.076	1
sig	0.000	0

Read w/ @ home vs. CLSPM		
	CLSPM	Read @ Home
CLSPM	1	0.075975
Read @ Home	0.075975	1
sig	9.5E-118	0

See Readers @ Home vs. CLSPM		
	CLSPM	See Reading
CLSPM	1	0.076652
See Reading	0.077	1
sig	0.000	0

See Readers @ Home vs. CLSPM		
	CLSPM	See Reading
CLSPM	1	0.076652
See Reading	0.076652	1
sig	9.2E-120	0

ANNEX D: SUBTASK CORRELATIONS AND RELIABILITY

Table D1: Correlations between Baseline (2022) EGRA Subtasks, Lusoga

Subtask	Letter Sound	Invented Words	Oral Reading Fluency	Reading Comprehension
Letter sound	1.00	0.57	0.49	0.48
Invented Words	0.57	1.00	0.90	0.81
Oral Reading Fluency	0.49	0.90	1.00	0.86
Reading Comprehension	0.48	0.81	0.86	1.00

Table D2: Correlations between Baseline (2022) EGRA Subtasks, English

Subtask	Vocabulary	Letter Sound	Invented Words	Oral Reading Fluency	Reading Comp
Vocabulary	1.00	0.50	0.40	0.50	0.46
Letter sound	0.50	1.00	0.71	0.72	0.66
Invented Words	0.40	0.71	1.00	0.85	0.77
Oral Reading Fluency	0.50	0.72	0.85	1.00	0.89
Reading Comprehension	0.46	0.66	0.77	0.89	1.00