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The Republic of Uganda  
MINISTRY OF EDUCATION AND SPORTS



## USAID Uganda School Health and Reading Program (SHRP)

### Moving the Needle on Reading Achievement in Uganda: Early Grade Reading Assessment Results, February, 2018

To measure the impact of SHRP on reading achievement, EGRA data were collected at the beginning of Primary 1 (P1) and then at the end of every school year through Primary 3, 4 or 5 depending on when the local language entered the program. **Figure 1 shows the program gains in local language correct words read per minute (cwpm) above those found in control schools.** So, for example, Luganda speakers in Program schools were reading 13 more words in the local language than those in control schools at the end of P5. Though there was little difference in local language cwpm at the end of P1, differences started to emerge at the end of P2 and **by the end of P3, significant positive differences were found in 10 of the 12 languages.**

The only significant differences between males and females at the end of P5 for Cluster 1 in Local Language was among Runyankore-Rukiga program females who scored significantly higher than males. For C2, at the end of P4, Runyoro-Rutoro control males scored higher than females and Lumasaaba treatment females scored higher than males. For C3 at the end of P3, males scored higher than females for both control and program groups in Ngakarimojong and Lhukonzo females scored higher than males in program schools.

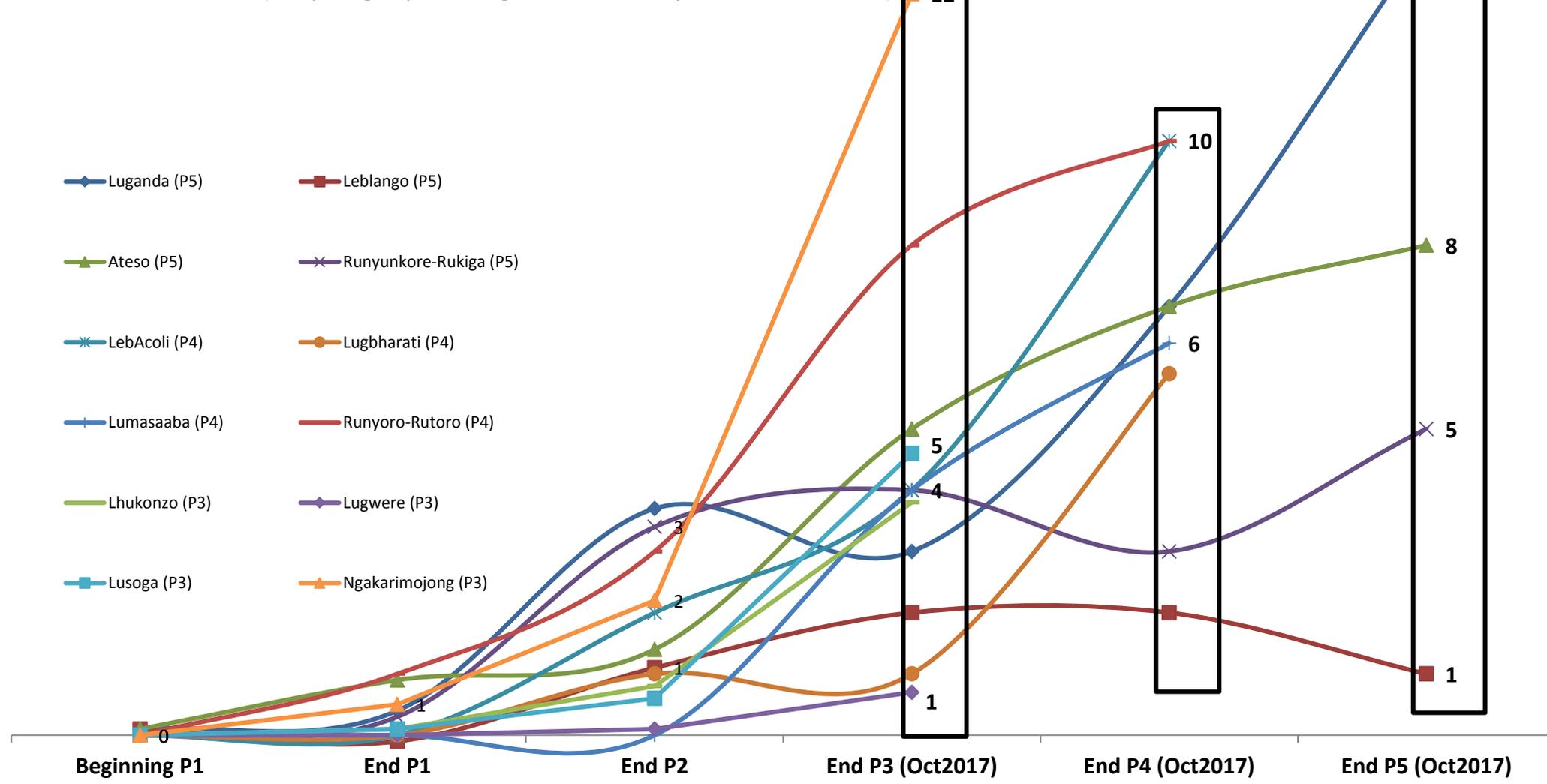
#### Phasing of languages into the program

**Cluster 1 - 2013:** Ateso, Leblango, Luganda and Runyankore-Rukiga (P1 2013, end P5 2017).

**Cluster 2 - 2014:** LebAcoli, Lugbarati, Lumasaaba, Runyoro-Rutoro (P1 2014, end P4 2017)

**Cluster 3 - 2015:** Lhukonzo, Lugwere, Lusoga, Ngakarimojong (P1 2015, end P3 2017)

**Figure 1: Program Gains in Local Language Correct Words Read Per Minute (cwpm)**  
 From Primary 1 to Primary 3, 4 or 5  
 (comparing cwpm in Program schools to wpm in Control schools)



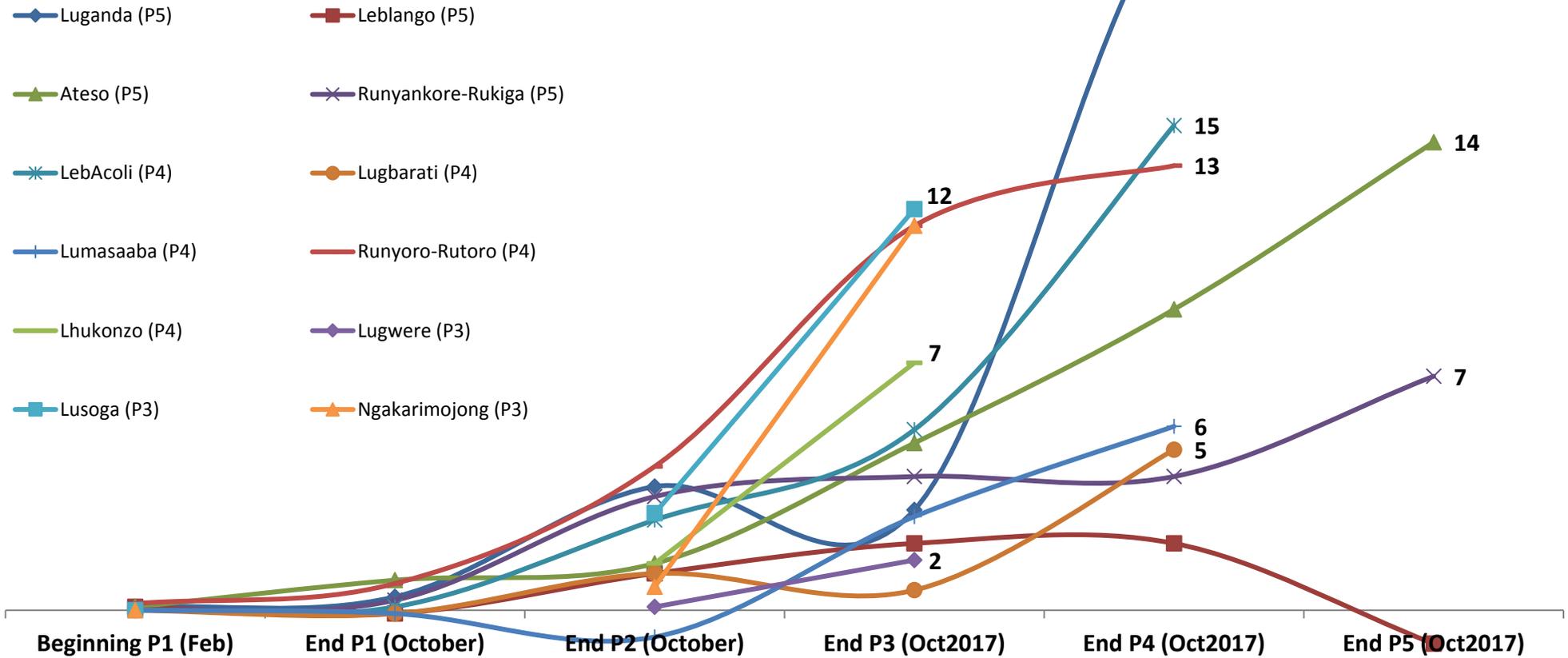
Ugandan primary school pupils are taught predominantly in the local language until Primary 3 when they transition to English (though the transition should be gradual through the grades). **The pattern with English gains (Figure 2) is similar to that of the Local Language gains.** Though there is no difference between treatment and control reading achievement through Primary 1 in English cwpm, gains emerged for most languages at the end of P2. **By the end of P3, 8 of the 12 languages had registered significant gains in English.** By P4, 5 of the 8 languages had gains significantly higher than control and by P5, 3 of the 4 languages reaching that level had significantly higher gains than control (though the program ended with P4). Most notable are Luganda speaking learners who were reading, on average, 22 more cwpm in English program schools compared to control schools. An exception is Leblango, where achievement differences between treatment and control continue to fall short in both local language and English reading achievement<sup>1</sup>.

The only significant differences in English between males and females in Cluster 1 at the end of P5 were found in control schools where Luganda and Runyankore-Rukiga speaking females scored higher than males. For Cluster 2 at the end of P4, Acoli and Lugbarati males in control schools scored higher than females and Runyoro-Rutoro females in control schools and Lumasaaba females in program schools scored higher than males. For Cluster 3 at the end of P3, females scored significantly higher than males for Lusoga learners in both program and control schools, Lugwere learners in control schools and Lhukonzo learners in program schools – males scored higher than females in Ngakarimojong program schools.

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<sup>1</sup> Action research to better understand the lack of progress in Leblango is scheduled for April, 2018.

**Figure 2: Program Gains in ENGLISH Correct Words Read Per Minute (cwpm)  
From Primary 1 to Primary 4 or 5  
(comparing cwpm in Program schools to cwpm in control schools)**

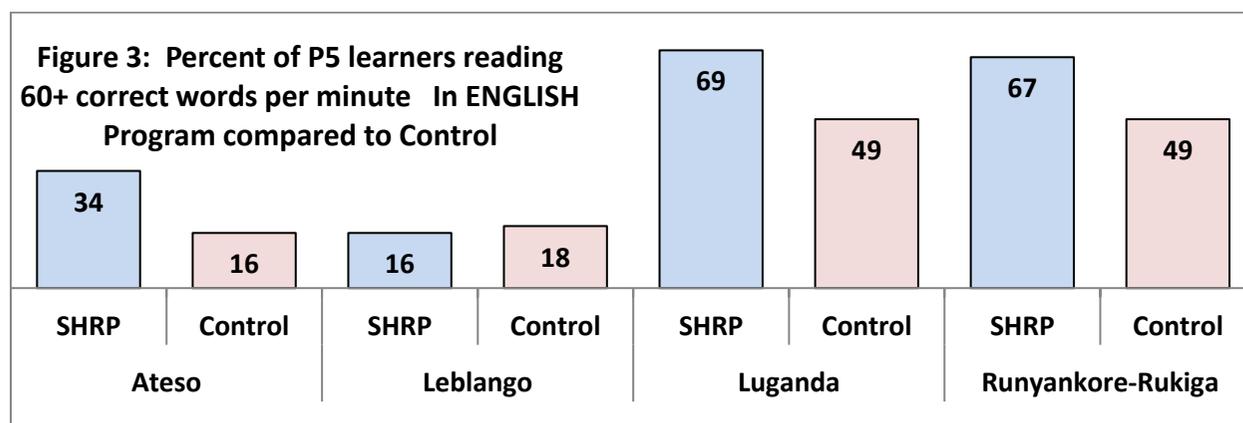


## Learning for Uganda and beyond

- **Registering significant programmatic gains in reading achievement takes time.** In the case of Uganda, this is partially attributable to the low baseline levels of reading (94% of learners across the 12 languages could read no words in English at the beginning of P1) and other systemic challenges within Ugandan schools not uncommon in other settings including teacher and learner absenteeism.
- **When learners learn to read in a local language, the gains realized in the local language are transferred to learning to read in English**

**End of Primary 5:** Learners in the first cluster of four languages to enter the Program at the beginning of P1 in February, 2013, were in P5 in December, 2017: **Luganda, Leblango, Ateso and Runyankore-Rukiga**

**English Oral Reading Fluency (ORF):** By the end of P5, English ORF is significantly higher in program schools compared to control schools in 3 of the 4 Cluster 1 languages. **Figure 3** shows the percent of learners who read 60 or more correct words per minute (cwpm) in English. In Ateso, the percent of program learners reading 60 or more cwpm is more than double that for control learners (34% compared to 16%). In Luganda, the difference was 69% for program learners compared to 49% for control and for Runyankore Rukiga, 67% of program learners could read 60 or more correct words per minute in English compared to only 49% in control schools. **Luganda is the only group where a significant difference for males and females was found: in both treatment and control, females were much more likely to ready 60 or more wpm compared to males** (33.9% for control males compared to 61.8% control females and 64.1% for program males compared to 72.3% for program females).



**In a simulated analysis applying SHRP rates of reading fluency to the population of P5 learners in UPE (government) schools in the 4 languages, the number of fluent readers would increase from 163,700 (using control rates) to 230,790 -- producing over 67,000 more fluent readers (from 38% to 53% out of a total of 431,457 P5 learners).**

Using 2016 EMIS data and percent of population by language from 2012 Census.

Though the significantly higher percentage of learners in program schools becoming “fluent” readers in English compared to control schools at the end of P5 is promising, there are still many learners (even in program schools) that are not fluent readers.

**End P5 Reading Comprehension in English:** English reading comprehension is significantly higher in program compared to control in 2 of the 4 Cluster 1 languages – Ateso and Luganda<sup>2</sup>. In an attempt to increase the validity of the comprehension measure this year we introduced the “look back” whereby learners read a passage and they are asked questions after the passage is removed from sight (as in the traditional method), but then, after answering, learners are handed back the passage and re-asked the questions that they initially got wrong. This separates comprehension from memorization. When this was done, reading scores increased quite substantially from a half question correct in the lowest performing group, to 1.7 additional questions answered correctly (**Table 1**). Comparing “look back” comprehension between treatment and control, Ateso learners are able to answer, on average 0.5 more questions in program compared to control schools (they answered 1.9 questions out of 5 compared to 1.4 questions in control) and just under 1 additional question in Luganda program schools compared to control (3.5 questions answered correctly compared to 2.6).

Even with the lookback, however, learners are not reading at the benchmark of 80% comprehension (which would mean 4 correct answers) -- likely attributable to low levels of English comprehension. Out of 14 English words (body parts, objects at the school) P5 learners could correctly identify only 8 in Leblango speaking schools, 8.4 in Ateso speaking schools, 10.3 in Runyankore speaking schools and 11.5 in Luganda speaking schools. And there were no significant differences between program and control – with the exception of Ateso where program learners identified more English words than control. This is a reading program that is also supposed to also increase English proficiency. It is not clear that this is happening. Gains using the look-back method were higher in those languages with higher levels of English vocabulary (as measured by common English word identification sub-task).

Giving learners the chance to look back at the story helped them to answer between 0.5 and 1.7 more questions (out of 5). This is a recommended improvement to increase the validity of the comprehension sub-task.

**Table 1: Average Number of ENGLISH questions answered correctly (out of 5), End of P5 traditional method compared to look back (and gain with look back)**  
 \*=significant difference between treatment and control

	Program	Control	Program	Control
	Traditional Method		Look Back (gain)	
Ateso	0.5*	0.3	1.9* (1.4)	1.4 (0.9)
Leblango	0.4	0.3	1.1 (0.7)	1.1 (0.8)
Luganda	2.4*	1.3	3.5* (1.1)	2.6 (1.3)
Runyankore/Rukiga	0.7	0.8	2.4 (1.7)	2.3 (1.5)

<sup>2</sup> For local language, comprehension is significantly higher in program compared to control schools for all Cluster 1 languages with the exception of Leblango. These results are not shown.

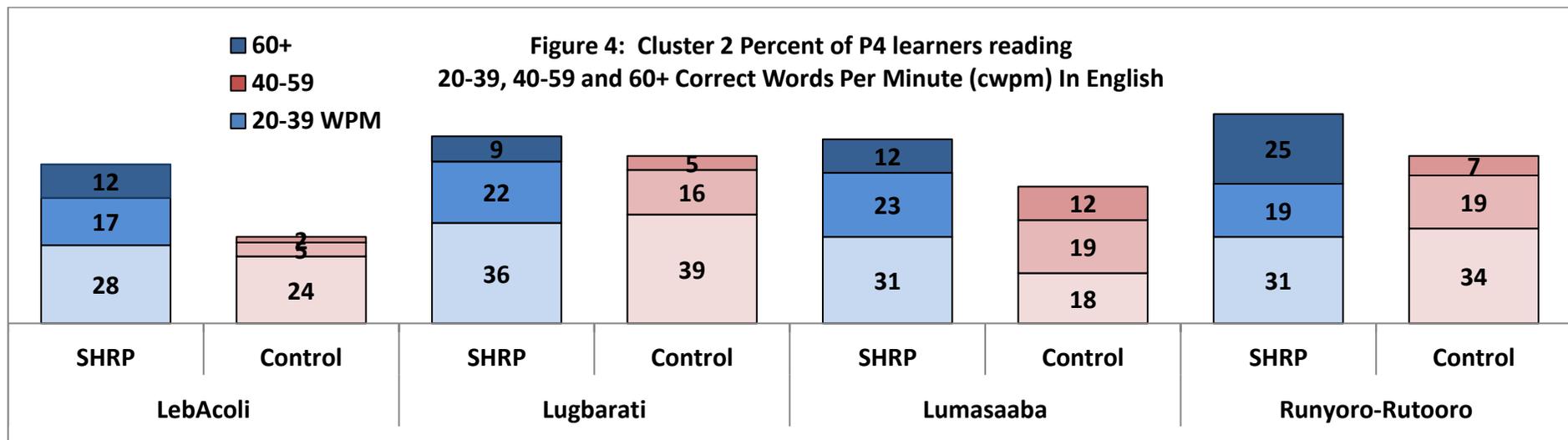
The only difference in reading comprehension between males and females was found in Leblango control males who scored higher than females.

Looking at those who answered no questions correctly (results not shown), Luganda program males are much more likely to answer NO questions correctly compared to females (29% compared to 13%).

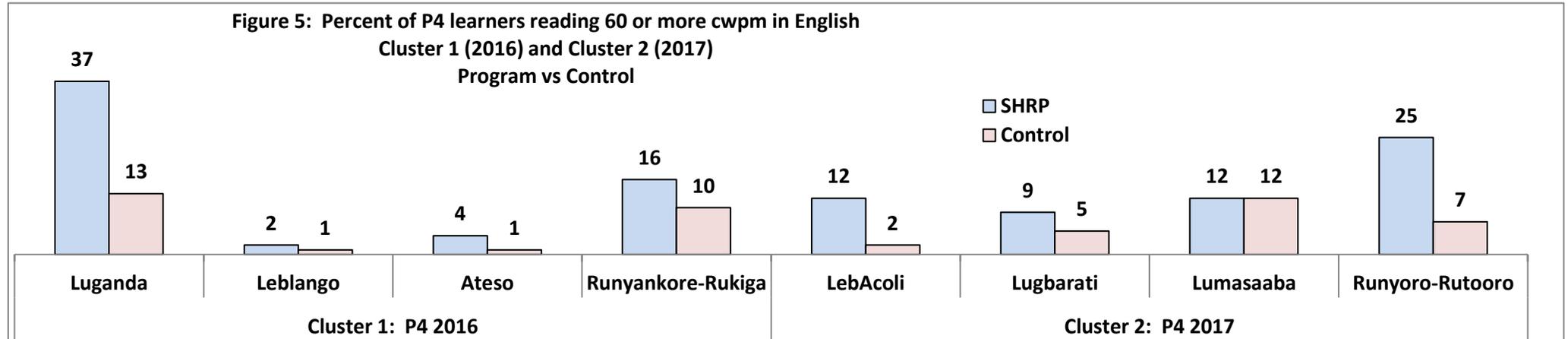
**End of Primary 4:** The second Cluster of 4 languages to enter the program in 2014, were in P4 in 2017 (Cluster 2): **LebAcoli, Lumasaaba, Lugbarati, Runyoro-Rutooro.**

**Figure 4 shows the percentage of P4 learners meeting reading benchmarks of 20, 40 and 60 correct words per minute (cwpm).** In LebAcoli, at the end of P4, program learners are reading significantly higher at every level – 12% of LebAcoli learners in program schools are reading 60 or more cwpm compared to only 2% for control learners. In Lumasaaba, the difference is in the significantly higher proportion of program learners reading 20-39 cwpm (more beginning or emergent readers), compared to control. In Runyoro-Rutooro, the difference is in the higher percentage of program learners reading 60 or more cwpm (more fluent readers) – 25% of Runyoro-Rutooro Program learners are reading 60 or more cwpm compared to only 7% of control learners. There were no significant differences between Lugbarati program and control at these levels though program learners were significantly more likely to be reading between 1-19 words (results not shown) compared to control schools.

The only significant difference between males and females was found in Runyoro-Rutooro control learners where more girls read 40-59 cwpm.



The percent of P4 learners reading 60 or more correct words per minute from the 8 languages from Cluster 1 and Cluster 2 are shown in Figure 5. Significant differences were found in 5 of the 8 languages (Luganda, Ateso, Runyankore-Rukiga, LebAcoli and Runyoro-Rutooro). The biggest differences were found in Luganda where 37% of P4 learners in program schools are reading 60 or more cwpm compared to only 13% in control schools and in Runyoro-Rutooro where 25% of program learners reached this benchmark compared to only 7% of control learners.



In a simulated analysis applying SHRP rates of reading fluency to the population of P4 learners in UPE (government) schools in the 8 languages (704,673 learners), 79,000 more P4 learners would be fluent readers – from 8% to 19% fluent readers.

This would more than double the number of fluent readers from 55,000 using control rates to 134,000 fluent readers using program rates.

Calculated using 2016 EMIS data and percent of population by language from 2012 Census.

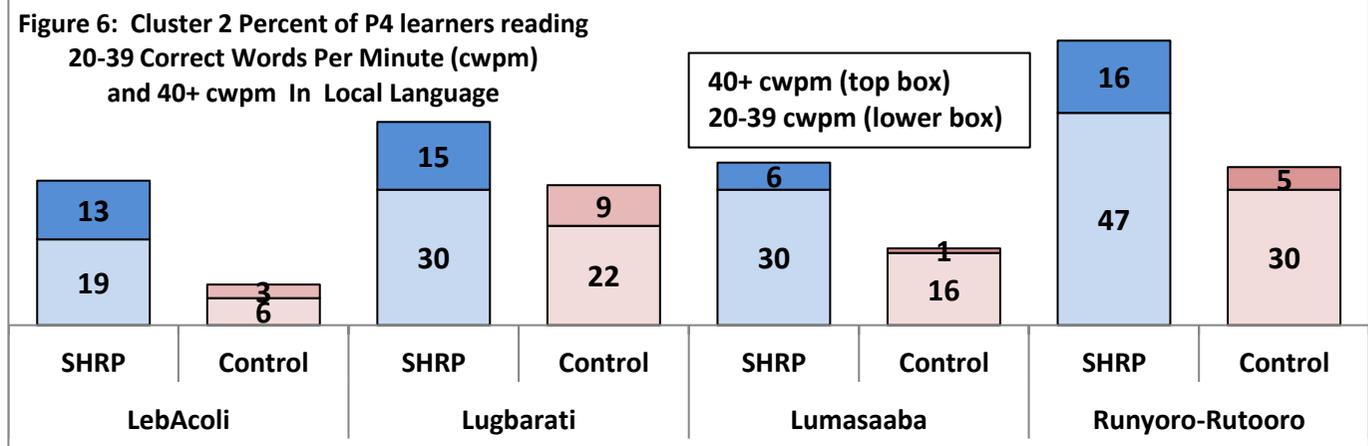
EGRA data were also collected from P4 learners who were the second class to benefit from the program at their schools (the results from their older P5 schoolmates have been discussed previously) as well as from a random sample of schools from Cluster 1 language schools that joined the program in year 2 (Cluster 1B). Though the results are not shown, findings include:

- C1 second wave reading achievement is significantly higher than control in 3 of the 4 languages (Leblango being the exception). This means that one year out (teachers were trained the year before) the results hold.
- For the second Class of Cluster 1 schools to start the program (Cluster 1B), results are also higher than control - and similar to results from the second wave of Cluster 1.

Comparing reading achievement in the local language, **Figure 6** shows the higher percentage of learners reaching the benchmarks of 20-39 and 40 or more cwpm in program compared to control schools – similar to the patterns found in English. In the local language, program learners are 1.5 to 6 times more likely to be reading 40 or more cwpm<sup>3</sup>. The only consistent difference between males and females was found in Lumasaaba where males were more likely to read 20-39 and 40+ cwpm in control schools and 20-39 cwpm in program schools.

**Longer word length in many languages, suggests acceptable benchmarks for fluency lower than those set (and often referred to) in English.**

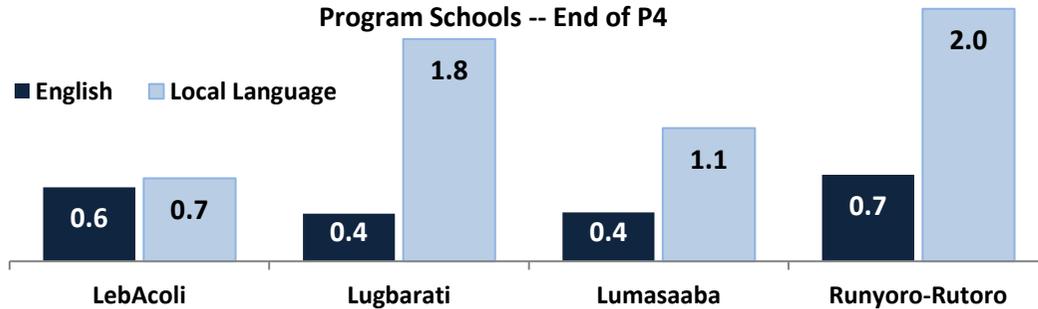
Abadzi, 2012 “Developing cross-language metrics for reading fluency measurement”, provides an example of increasing reading fluency measures by 30% to account for the difference in word length in Bantu languages (such as 7 of the 12 languages in the program).



For LebAcoli, 13% of learners are reading 40 or more cwpm compared to 3% in control, Lugbarati 15% compares to 9% in control. In Lumasaaba, 6% of learners could read 40 or more wpm compared to only 1% in control and in Runyoro-Rutooro, 16% compares to 5% in control.

<sup>3</sup> Difference in Differences effect sizes are between .25 and .33 for LebAcoli, Lumasaaba and Runyoro-Rutooro.

**Figure 7: Cluster 2: Number of Reading Passage Questions Answered Correctly Local Language and English Program Schools -- End of P4**

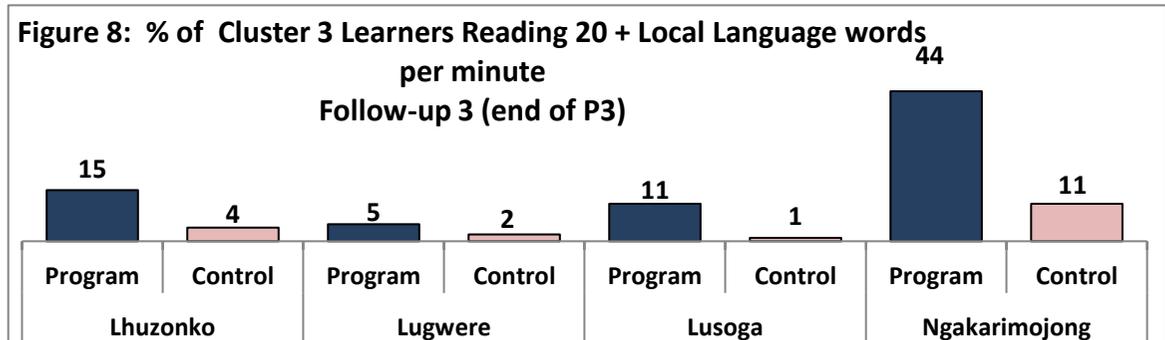


identify, on average, 8 words, and there were no significant differences between treatment and control. Though the results are not shown, program comprehension is significantly higher than control comprehension for all 4 Local Languages – program was significantly higher than control in English for LebAcoli and Lugbarati language groups.

**Figure 7** compares the average number of comprehension questions answered correctly in English and Local Language. **Higher reading comprehension in the local language compared to English has been found across the years and across the clusters – in all 12 languages, at the end of P3, P4 and P5, learners are able to answer more questions in the local language compared to English.** Originally confirmation of the importance of learning to read in a language the learner understands (the local language in most cases), as the learners have reached the grades where English is the medium of instruction (Primary 4) it also appears to be a confirmation of the persistently low levels of English comprehension. Of 14 basic, English vocabulary words, P4 learners from Cluster 2 languages could

**End of Primary 3:** The third and final Cluster of 4 languages to start the program, were in P3 in 2017: **Lhukonzo, Lugwere, Lusoga and Ngakarimojong.**

**Figure 8** shows that the percent of P3 learners from these 4 language groups who could read 20 or more cwpm in the local language is higher in program schools compared to control school in all 4 languages<sup>4</sup>. The percent of P3 learners who could read 20 or more wpm was 15% in Lhukonzo program schools compared to 4% in control, 5% in Lugwere compared to 2% in control, 11% in Lusoaga program schools compare to % in control and 44% in Ngakarimojong program schools compared to 11% in control.



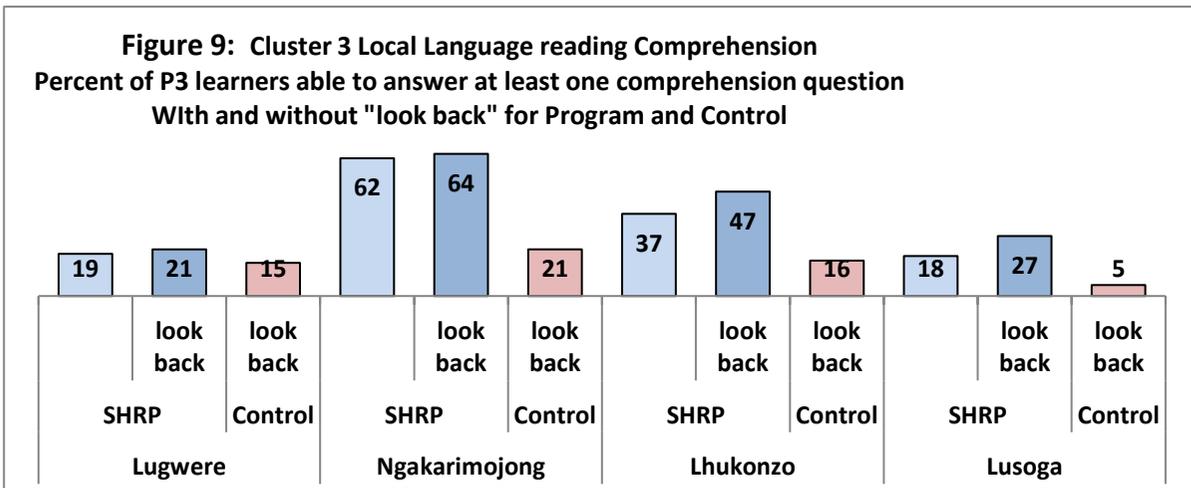
Looking at Local Language reading comprehension for the same learners (**Figure 9**), we find that program learners are more likely to correctly answer at least one of the questions asked after they have read the story<sup>5</sup> – and that this percent increased when the learners were given the opportunity to “look back” at the story to answer questions they missed the first time.

<sup>4</sup> All differences are statistically significant.

<sup>5</sup> Statistically significant differences for all but Lugwere.

In Ngakarimonjong, the percent of P3 learners correctly answering at least one question was 62% using the traditional method and 64% with look back in

program schools compared to only 21% in control schools with look back. The percent for Lhukonzo was 47% for program compared to 16% for control and for Lusoga 27% for program and 5% for control (all with look back).



### Major messages

- When children learn to read (decode) in their local language, they are able to transfer this skill to decoding English. However, more work needs to be done to improve English comprehension.
- Although SHRP has been able to move more learners to higher reading levels and they are on their way to becoming fluent readers, there are still too many learners not acquiring foundation skills.
- It takes more time to move children from the foundation threshold than anticipated but when you move them from that level, the gains take off as can be seen from P3 onwards.
- Reading gains in large scale interventions working through government structures take time due to systemic and contextual challenges.

Significant differences between males and females include in reading comprehension include:

Local language: Males scored higher than females in in Ngakarimojong program and control schools. In Lhukonzo, males scored higher than females in control schools but girls scored higher than boys in program schools and in Lusoga program schools, males scored higher than females.

English: males scored higher than females in Ngakarimojong program schools and females scored higher than males in Lhukonzo control schools.