



# Literacy Boost in Rwanda:

## Sustainability Report

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## **Executive Summary**

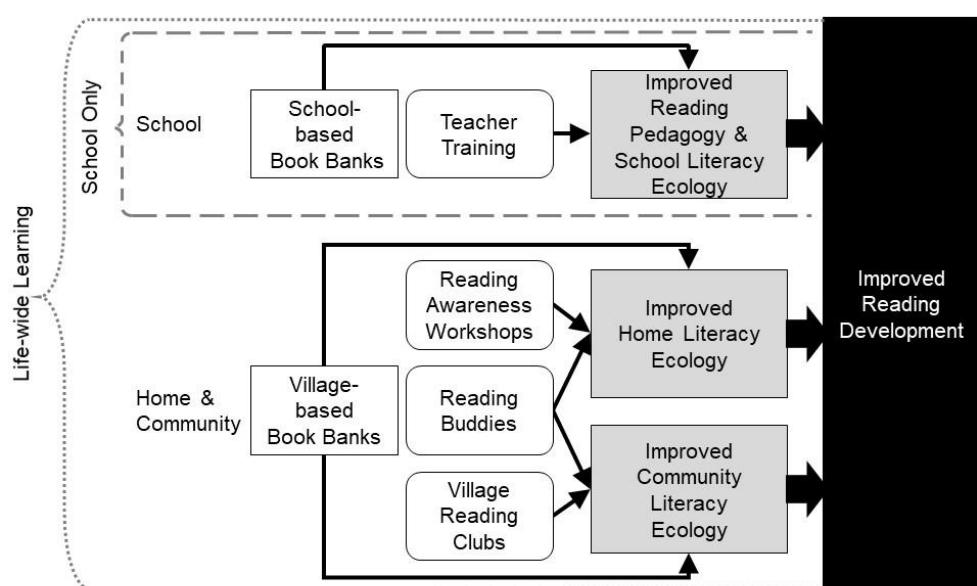
### **Literacy Boost in Rwanda: A Randomized Control Trial**

Despite the best of efforts, children in early primary grades struggle to learn the basics of literacy even after several years of school attendance. To investigate better ways to address this ‘learning crisis’, Save the Children and its partner organization Umuhuza began implementing the Literacy Boost program in one rural district in Rwanda. The innovative Literacy Boost program supported children’s learning in schools through improving pedagogy and outside of schools by increasing their daily life-wide learning opportunities at home and in their community. The figure below contains the Literacy Boost logic model, outlining the program activities, proximal effects, and hypothesized impact of the program.

Literacy Boost was implemented as a randomized control trial with one control group and two treatment arms: (1) a School Only (SO) group of students that received learning support through improved reading pedagogy and reading materials at school within schools only, and (2) a Life-wide Learning (LWL) group of students who received both in school support and additional support to enhance learning directly in their homes and communities. As reported the impact evaluation of the randomized control trial (Friedlander & Goldenberg, 2016), students in the LWL group – those who benefitted from activities both in their school and in their homes and communities – significantly outperformed other groups on a range of language and literacy outcomes. Students in both the LWL and SO groups outperformed the Control group in grade promotion. Furthermore, surveys of teachers indicated statistically significant improvements in their pedagogical knowledge, beliefs, and practices when compared to a Control group. Parent surveys also revealed statistically significant improvements in the home literacy ecology of students assigned to the LWL group.

### **The Literacy Boost Logic Model & Treatment Groups in Rwanda**

Treatment Group	Intervention Domain	Reading Materials	Core Activities	Proximal Effects	Hypothesized Impact
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### **Study Motivation: The Sustainability of Literacy Boost Improvements**

The 2016 impact evaluation revealed certain improvements in learning opportunities for students directly following the end of a two-year program implementation. Following the end of the randomized control trial, treatment groups were reversed, so that the children in the Control group

and the SO group could also benefit from Literacy Boost community activities. Teachers in the Control group also benefitted from the Literacy Boost teacher training. The extension of the project and treatment reversal provided us an opportunity to continue studying our sample to measure how, if at all, Literacy Boost continued to positively impact students. Furthermore, it allowed us to explore sustainability of the proximal effects shown in the figure aboveFigure 1. In this report, we answer the following research questions:

- (1) How sustainable are improvements in children's literacy skills and grade promotion rates?
- (2) How sustainable are improvements in reading pedagogy and classroom print environment?
- (3) What are the mechanisms in place to support sustainability of improvements in the literacy ecology of homes and communities?

This report presents the results of a mixed-methods study evaluating whether, and how, the positive impact of Literacy Boost activities was sustained into 2017. The report uses advanced statistical methods to compare student reading skills and teacher knowledge and practices and qualitative methods to explore the mechanisms in place that may support sustainability. The report concludes with a general discussion of findings and recommendation for action and future research.

## **Data and Methods**

**Data Collection.** We collected quantitative data on students, teachers, and classrooms using tools that were virtually identical to those used in 2015. Data collection instruments include early grade reading assessments, teacher surveys, and photographs of classrooms. We also conducted dozens of interviews with relevant stakeholders and participants to explore sustainability qualitatively. The overall sample size included in the analysis of this report is seen in table below.

<b>Sample Size by Study and Year</b>			
<i>Instrument / Study</i>	<i>2013</i>	<i>2015</i>	<i>2017</i>
Reading Assessment	Cohort 1: 2,054	Cohort 1: 1,674 Cohort 2: 1,926	Cohort 1: 1,202 Cohort 2: 1,244
Teacher Surveys	451 teachers	560 teachers	452 teachers
Classroom Photos		1,089 photos	1,075 photos
Qualitative Sustainability Study	n/a	n/a	43 interviews, 2 Focus Groups, & 3 Meeting Observations

**Data Analysis.** Quantitative impact was determined through an Intention to Treat analysis. This technique produces a conservative estimate of impact, as it does not estimate impact according to the actual treatment that participants received. Rather, it measures impact according to the assigned treatment status, regardless of the degree to which participants engaged in the program. Qualitative data were analyzed iteratively, based on themes and dimensions of sustainability that we identified in the literature as well as themes that emerged from the data themselves.

## **Major Findings**

### ***Reading Assessment Sub Study***

**1. The positive impact on repetition and promotion for the treatment groups was sustained.** Children in the LWL and SO groups reached Primary 5 at significantly higher rates than the Control group. In the Control group, only 21% of the longitudinal sample reached Primary 5. In contrast, 29% of both the SO and LWL groups had reached Primary 5 in 2017. Despite the fact that 29% is a rather low rate for the number of students to reach P.5, this finding has social and financial implications for efficiency of the primary school system.

**2. No patterns of significant differences existed between groups on language and literacy outcomes.** No differences on language and reading skills existed between the Control, SO, and LWL groups two years following the end of direct implementation were insignificant. This finding is true

for both Kinyarwanda and English language and literacy skills. One possible explanation is that in 2016 and 2017, implementing partner reversed the treatment groups and the Control group received treatment, thereby helping them to catch up to their peers in the treatment group.

3. The supportive learning practices that children reported at home increased in the treatment group since 2015, but the number of reading materials decreased. Students in the LWL group scored significantly higher on an index of supportive learning practices at home than a control group. On an index of reading materials, however, there was no difference among groups.

#### ***Teacher Sub Study***

4. The positive impact on teacher knowledge and practices was sustained. 2017 survey results for trained teachers (in both the SO and LWL groups) were statistically equivalent to their scores in 2015 for both the teacher knowledge and teacher practice outcomes.

5. The positive impact of teacher training on the classroom print environment was sustained. Comparisons between the Control classroom photographs in 2015 and treatment classroom photographs in 2017 show that trained classrooms had significantly more print on the walls. However, the amount of print in the trained classrooms in 2017 was significantly less than it was in the trained classrooms in 2015, indicating some reduction in the magnitude of the impact two years later.

#### ***Sustainability Sub Study***

6. Variation exists in the degree to which villages are still engaging in home and community reading activities. Interviews with participants revealed that strong leadership, ownership, and accountability for activities were highly associated with the continuance of activities.

7. Diverse mechanisms of sustainability increase the likelihood of sustainable change. Umuhuza put several innovative initiatives in place to sustain Literacy Boost activities and address barriers to sustainability. These included creating reading materials at home, partnerships with private organizations and church groups, creating savings groups to help motivate parents and volunteers, and using pre-existing initiatives and infrastructure, such as *imihigo* contracts and *urugero* youth.

#### **Recommendations and Next Steps**

Advocacy: The findings in this study suggest that more active community and child engagement in literacy-related activities outside the school are critical to help children learn and progress through school. Better communicating this to the entire country may help achieve greater learning for all.

Increased Coordination among Government Agencies: Children begin learning from the earliest of ages, long before they enter into school. Incorporating learning messages and activities into a child's entire life has the best chance to improve learning. Exploring how to coordinate efforts by MINEDUC, MINALOC, MIGEPROF, and others may help to improve learning nationwide.

Improving the Print Environment: Children in rural areas lack reading materials. Developing and rolling out a comprehensive community library plan may help to address this issue. Incentivizing publishers to invest in fun, engaging children's reading material is needed to fill these libraries with books written in the local language that children will want to read. Further encouraging teachers and schools to better decorate classrooms would also help improve the print environment.

Sustainability: Our look into sustainability occurred two years following the end of direct implementation. Further research is needed in future years to understand what impact Literacy Boost has on children's schooling and learning five, ten or twenty years down the line.

#### **Conclusion**

This study provides evidence that working with families and communities, in addition to the usual school-based staff, leads to various sustainable improvements in teachers' pedagogical skills, children's school achievement and the literacy ecology of both the home and school. Integrated, systems-level interventions to help families, communities, and schools to support their children's learning are recommended for Rwanda to foster a reading culture to transform itself into a knowledge-based economy.

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## **Table of Contents**

<b>Executive Summary</b>	<b>i</b>
<b>Acknowledgements</b>	<b>iv</b>
<b>Introduction</b>	<b>1</b>
<b>Part I. Sustainability of Literacy Boost's Impact on Student's Learning</b>	<b>3</b>
1.1 Literacy Boost	4
1.2 Implementation & Research Activity Timeline	4
1.3 Summary of Impact Analysis at Endline (2015)	5
1.4 Research Questions	5
1.5 Data	6
1.6 Methods to Estimate Sustainability	11
1.7 Findings	13
1.8 Summary of Findings & Discussion	19
1.Appendix	22
<b>Part 2. Sustainability of Literacy Boost in Teacher Knowledge and Practices</b>	<b>29</b>
2.1 Summary of Impact Analysis at Endline (2015)	30
2.2 Teacher Training Activities in 2016 & 2017	30
2.3 Teacher Survey: Data and Methods	31
2.4 Teacher Survey: Findings	34
2.5 Classroom Print Environment: Data & Methods	37
2.6 Classroom Print Environment: Findings	38
2.7 Summary of Findings and Discussion	40
2.Appendix	43
<b>Part 3. Sustainability of Literacy Boost in Homes and Communities</b>	<b>81</b>
3.1 Community Activities Description & Implementation from 2014 to 2015	82
3.2 Research Questions	84
3.3 Data & Methods	84
3.4 Findings on RQ1. Which Literacy Boost Community Literacy Activities Were Sustained?	88
3.5 Findings on RQ2. Mechanisms to Promote Sustainability	89
3.6 Findings on RQ3. What Factors & Themes Influence the Mechanisms of Sustainability?	97
3.7 Discussion & Conclusion	101
3.Appendix	104
<b>Part 4. Recommendations</b>	<b>111</b>
4.1 Recommendations for Government Partners	111
4.2 Recommendations for Program Implementers	112
<b>References</b>	<b>113</b>

## **List of Acronyms**

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Acronym	Full Spelling
DSTR	Directorate of Science, Technology and Research
GBP	British Pound
LWL	Life-wide Learning
MIGEPROF	Ministry of Gender and Family Promotion
MINALOC	Ministry of Local Government
MINECOFIN	Ministry of Finance and Economic Planning
MINEDUC	Ministry of Education
MINISPOC	Ministry of Sport and Culture
RAW	Reading Awareness Workshop
RWF	Rwanda Franc
SCOPE	School-Community Partnerships for Education (also known as <i>Mureke Dusome</i> )
SD	Standard Deviation
SES	Socioeconomic Status
SO	School Only
USD	United States Dollars

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## **List of Figures**

Figure 1: The Literacy Boost Logic Model.....	2
Figure 2: Primary Level Enrollment by Group and Year for Students in the 2017 Sample .....	13
Figure 3: Percent of Cohort 1 by Primary Level for the 2017 Analytic Sample .....	14
Figure 4: Average % Correct on Kinyarwanda Cloze Subtest in 2013, 2015, and 2017, by Group.....	15
Figure 5: Fluency Scores by Group & Year for 2017 Sample Students who could read in 2015 .....	16
Figure 6: Supportive Learning Practices at Home by Group and Cohort .....	18
Figure 7: Classroom Print Coverage for Phase 1 Sectors in 2015 & 2017 .....	39
Figure 8: Classroom Print Coverage, Phase 2 in 2015 & Phase 1 in 2017 .....	40
Figure 9: Teacher Knowledge in 2015 & 2017.....	43
Figure 10: Teacher Self-Reported Practices in 2015 & 2017.....	44
Figure 11: Knowledge Scores for Phase 1 Trained teachers by Survey Response in 2017 .....	45
Figure 12: Self-Reported Reading Activities Used Daily (Phase 1 Trained teachers) in 2017 .....	46
Figure 13: Self-reported Reading Activities Used At Least Sometimes in 2017 .....	47
Figure 14: Classroom Print Coverage for Phase 2 Sectors, 2015 & 2017 .....	48
Figure 15: Classroom Print Coverage, Phase 1 in 2015 and Phase 2 in 2017.....	49
Figure 16: Administrative Schematic of Rwandan Political Units .....	104

## **List of Images**

Image 1: A Village Reading Club in Action.....	83
Image 2: A Village Reading Club in Action (2) .....	84
Image 3: Reading Materials Created with Locally Available Resources .....	90
Image 4: Home-made Books Kept in the Village Book Bank .....	90
Image 5: Tea Cultivation Area in the Project District .....	96

## **List of Tables**

Table 1: Timeline of Literacy Boost Activity Implementation .....	4
Table 2: Research Sub-Questions, Analysis Type, Group, Cohort, & Data Collection Year,.....	6
Table 3: Student Data Collected in 2013, 2015, & 2017 .....	7
Table 4: Outcome Descriptions, Descriptives, & Reliability Estimates (Cohort 1) .....	8
Table 5: Comparison of Sample Sizes in 2015 & 2017 Following Treatment Reclassification .....	10
Table 6: Regression Models Predicting whether Cohort 1 Children Enrolled in P.5 in 2017 .....	14
Table 7: Models Predicting Home Reading Materials Index at Endline (Cross-Sectional Sample) ....	17
Table 8: Models Predicting Endline Supportive Learning Practices (Cross-Sectional Sample) .....	18
Table 9: Comparing 2015 Outcomes for Revised Treatment Assignments.....	22
Table 10: Attrition Analysis & Baseline Differences in the 2017 Analytic Sample for Cohort 1.....	23
Table 11: Effect Size Differences Between Attritors & Non-Attritors in 2017 .....	23
Table 12: Attrition Analysis & Baseline Differences in the Cross-Section of Cohorts 1 & 2.....	24
Table 13: Effect Size Differences between Attritors & Non-Attritors in the Cross-Sectional Sample	24
Table 14: Cohort 1: Group Differences in the Reading Materials Index in 2015 & 2017 .....	25
Table 15: Cohort 1: Group Differences in the Supportive Learning Practices Index in 2015 & 2017	25
Table 16: Language and Reading Outcomes for Cohort 1 in 2017 .....	26
Table 17: Students' Self-Reported Community Activity Participation .....	27
Table 18: Teacher Training Phases .....	31
Table 19: Group Size Based on Years of Survey Participation.....	32
Table 20: Teacher Characteristics .....	33
Table 21: Teacher Knowledge and Practices in 2015 and 2017 .....	35
Table 22: Sustainability of Knowledge and Practice Gains.....	37
Table 23: Number of Photos by Teacher Training Phase & Year .....	38
Table 24: Home & Community Literacy Activities and Inputs.....	83
Table 25: Interviews & Sampling Procedures.....	86
Table 26: Focus Groups & Sampling Procedures.....	87
Table 27: Observations & Sampling Procedures .....	87
Table 28: Sustained Activities across the Five Sampled Villages.....	89
Table 29: Dimensions of Sustainability.....	108

## Introduction

*We need, all of us, to develop the habit of reading every day for life-long learning and pleasure. We share a common vision of a stable and vibrant country where life quality is defined not only by its citizens' capacity to draw upon objective knowledge, critical thinking and creativity to find original solutions to the development challenges ahead, but where each of us is enriched by the passions, ideas and dreams that have been set down in print across time and borders by others just like ourselves, dreaming of a bright future for the generations to come.<sup>1</sup>*

➤ Minister of Education, Rwanda Reads, 2016)

Providing relevant, quality education for all children is a global challenge. In the past two decades, children around the world have flooded into primary schools thanks to the abolition of school fees. Yet, access to schooling does not guarantee learning. Despite increased access to schooling, there are many contexts in which children are not mastering the basic skills they need to learn. Significant efforts have been put forth to understand the root cause of the 'learning crisis' and to improve learning across the world.

Many educators, agencies, government ministries, and others have been trying different approaches to tackle the learning crisis. Common interventions involve curricula revision, enhanced teacher training, provision of supplemental reading materials, and construction of better schools and classrooms. These interventions, which take place entirely within the school walls, are necessarily limited in potential impact for one simple reason: children spend at a very maximum only 15 percent of their waking year within the school. Yet there are other interventions that expand beyond this 'School-Only' approach. One such intervention is Literacy Boost, Save the Children's early grades literacy program. Literacy Boost takes a life-wide learning approach to education, seeking to enhance literacy opportunities not solely during the small percentage of a child's time when she is in school, but during a child's entire waking day and year. To date, Literacy Boost has been implemented in over three dozen countries across the developing world.

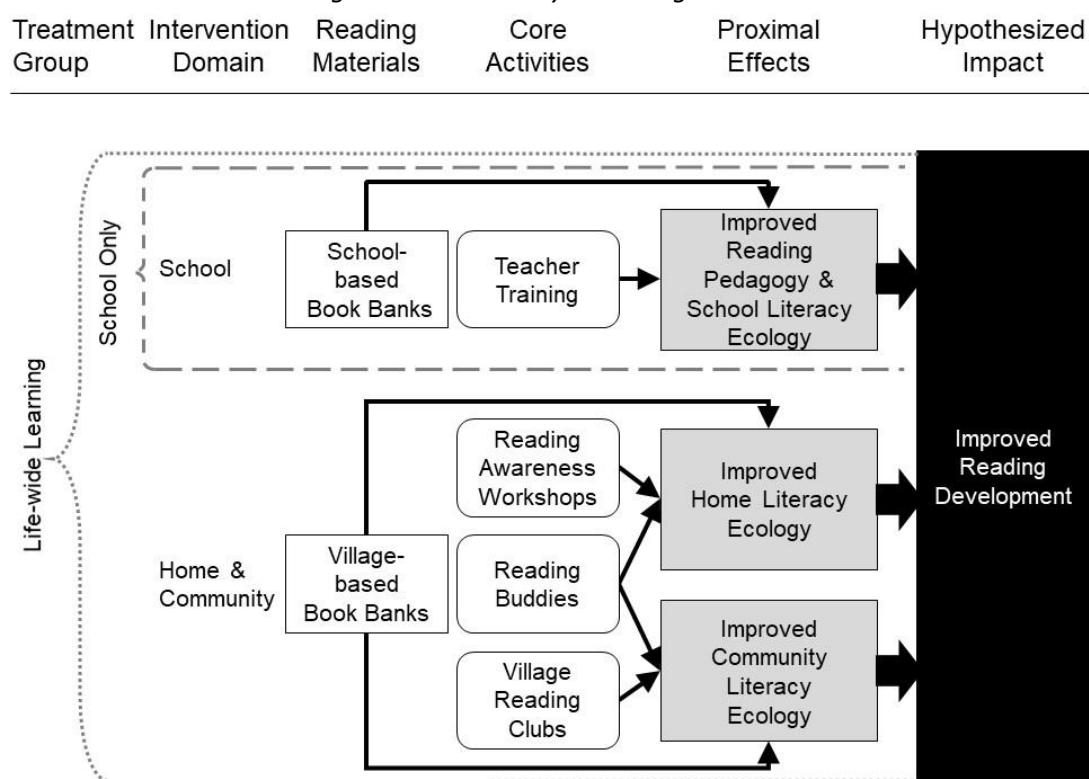
In Rwanda, Literacy Boost was implemented as a randomized control trial. The trial had two treatment arms: a School-Only (SO) treatment that provided teachers with training on reading pedagogy, and a Life-wide Learning (LWL) treatment, that included the teacher training but expanded outward to support children's learning directly in their own homes and communities. Figure 1, below, presents the logic model of Literacy Boost and outlines the treatment groups of the randomized control trial in Rwanda. Findings from the randomized control trial, which began in 2013 and ended in 2015, revealed certain improvements in learning opportunities for treatment students, particularly those in the LWL treatment group (Friedlander & Goldenberg, 2016).

Beginning in early 2016, following the end of the randomized control trial, treatment groups were reversed so that the children in the Control group and the SO group could also benefit from Literacy Boost community activities. Teachers in the Control group also benefitted from the Literacy Boost teacher training. The extension of the project and treatment reversal provided the Stanford research team and our partners an opportunity to continue studying Literacy Boost participants to measure whether the positive impact on students first observed in 2015 sustained itself. Furthermore, it allowed us to explore the sustainability of the proximal effects shown in Figure 1.

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<sup>1</sup> Quote taken from the Rwanda Reads website (Rwanda Reads, 2016).

*Figure 1: The Literacy Boost Logic Model*



Reproduced from Friedlander, Arshan, Zhou, & Goldenberg (2018)

The following pages present our findings on the sustainability of Literacy Boost impact two years following the end of direct implementation in the original treatment groups. The rest of this report is separated into three parts, each of which answers one of the following questions:

- (1) How sustainable are improvements in children's literacy skills and grade promotion rates?
- (2) How sustainable are improvements in reading pedagogy and classroom print environment?
- (3) What are the mechanisms in place to support sustainability of improved literacy ecology in homes and communities?

Using a mixed-methods approach, we use advanced statistical methods to compare student reading skills and teacher knowledge and practices and qualitative methods to explore the mechanisms in place that may support sustainability. We conclude the report with recommendation arising from the research.

## **Part I. Sustainability of Literacy Boost's Impact on Student's Learning**

### **CHAPTER ABSTRACT**

#### **PURPOSE OF THE CHAPTER**

In the 2015 endline report (Friedlander & Goldenberg, 2016), we found that both a School-Only (SO) treatment, which included teacher training and reading materials at the school level, and a Life-wide Learning (LWL) treatment, which added home and community literacy activities to the SO treatment, significantly impacted students' literacy skills and grade promotion rates.

Specifically, the LWL treatment had the greatest impact across Oral Comprehension, Reading Fluency, Reading Comprehension, and the likelihood that students had reached P.3 two years after enrolling in P.1. The purpose of this chapter is to test whether the gains made by the treatment groups sustained themselves when compared to a control group, and with each other.

#### **DATA ANALYZED**

- 2054 Reading Assessments in 2013 (Cohort 1)
- 3967 Reading Assessments in 2015 (Cohort 1 & 2)
- 2540 Reading Assessments in 2017 (Cohort 1 & 2)

#### **KEY FINDINGS & DISCUSSION**

- The impact on rates of repetition and promotion were sustained two years following the end of direct implementation.
- No significant differences existed between the treatment and control groups in 2017.
- The LWL students reported significantly higher supportive learning practices at home than the Control students.

#### **Discussion**

- The sustained impact on repetition and promotion rates is important for policy makers and educators seeking to improve educational efficiency. Yet less than one-third of students in any group reached Primary 5, indicating that challenges still remain to improving primary school retention and completion.
- One possible explanation for the lack of sustained impact on the language and reading skills of the treatment groups is that the Control group received treatment in 2016 & 2017, which may have brought them up to a statistically similar level as the LWL and SO group.
- Improvements in the supportive learning practices suggest sustained impact on the home literacy ecology, and an increase in the quality of the overall culture of reading in LWL villages.

This chapter presents findings from analysis of longitudinal reading assessment data collected as part of a randomized control trial of Save the Children's Literacy Boost in Rwanda program. The goal of the analysis is to determine in what ways the positive impact of the program observed in 2015 was sustained in 2017, two years following the end of direct implementation of activities. We begin by briefly describing the intervention and reviewing the findings from the 2015 analysis (Friedlander & Goldenberg, 2016). We then lay out the timeline of activities to provide an understanding of how different groups participated in different treatment activities since 2013. Following this we ask our specific research questions and describe our data and analytic approach to answer those questions. We then present the findings of our analysis and discuss those findings.

## 1.1 Literacy Boost

Created by Save the Children, Literacy Boost<sup>2</sup> is a program designed to help students in the first years of primary school to read better by improving the overall culture of reading. Made up of several different activities, Literacy Boost seeks to improve children's literacy learning both in the classroom and in the home and community, and to improve the culture of reading more broadly. Implementers work from a Literacy Boost toolkit to select activities appropriate for their specific country or region. Figure 1 presents the central activities of Literacy Boost as it was implemented in Rwanda, the expected proximal effects of those activities, and ultimately the hypothesized impact. In Figure 1 there are two domains of the intervention: 'School' and 'Home & Community'. This figure lists four activities, but Literacy Boost includes many more possible activities that program implementers select and adapt for their specific context and culture. For a far more thorough description of the program, refer to Friedlander & Goldenberg (2016).

## 1.2 Implementation & Research Activity Timeline

Under the guidance of a team of Stanford researchers, Save the Children and its partner organization Umuhuza implemented all Literacy Boost activities as a randomized control trial. The randomized control trial tested the relative impact of activities within the 'School' domain and the combined activities within both the 'School' and 'Home & Community' domain against a business-as-usual control group (See the dotted lines in Figure 1 for specific activities included in each treatment).

*Table 1: Timeline of Literacy Boost Activity Implementation*

Domain of Intervention	Activity	Year	Life-wide Learning Group	School Only Group	Control Group
School	Teacher Training + School-based Book Banks Provision	2014	✓	✓	
		2015	✓	✓	
		2016			✓
		2017			✓
Home & Community	Community Reading Activities + Village-based Book Banks Provision	2014	✓		
		2015	✓		
		2016		✓	✓
		2017	✓	✓	
Research Activities	Random Assignment of Sectors	2013	✓	✓	✓
	Baseline Assessment	2013	✓	✓	✓
	Endline Assessment	2015	✓	✓	✓
	Sustainability Assessment	2017	✓	✓	✓

*Notes:* ✓ indicates that a specific activity was implemented or occurred during the year specified. This table only reflects direct implementation by implementing partners and does not indicate whether or not activities were sustained.

The Stanford research team randomly assigned Gicumbi's 21 sectors to one of three groups: A School-only (SO) treatment group, a Life-wide Learning (LWL) treatment group, and a control group.<sup>3</sup> The trial began with baseline data collection at the end of 2013 and ended with endline data collection in 2015. At the start of 2016 and continuing through the end of 2017, the implementing partners reversed the treatment groups in accordance with approved ethics protocols, thereby

<sup>2</sup> In Rwanda, Literacy Boost was implemented as part of a larger Advancing the Right to Read initiative. This report only reviews findings concerning Literacy Boost.

<sup>3</sup> In the Impact Analysis (2016), the LWL was referred to as the Literacy Boost group, and the SO group was referred to as the Teacher Training group. Because both groups received at least some activities of Literacy Boost, we revised the group names to better identify which groups received which activities.

ensuring that all participating sectors could benefit from the program for a two-year period between 2014 and 2017. That is, sectors assigned to the Control group in 2013 received all Literacy Boost activities in 2016 and 2017, sectors assigned to the SO group in 2013 received the home and community activities in 2016 and 2017, and sectors assigned to LWL did not have any direct implementation of activities occurring in their sectors in 2016 and 2017. Table 1 summarizes the timeline of treatment implementation and research activities.

### **1.3 Summary of Impact Analysis at Endline (2015)**

Over the course of the project, we assessed two cohorts of students: Cohort 1 were first assessed in 2013 when they were enrolled in P1. Cohort 2 was first assessed in 2015. This section gives a brief overview of the impact findings from 2015

#### 1.3.1 Impact on Cohort 1 in 2015

In September 2015, we assessed 1,668 (82%) of the 2041 students we had assessed at 2013 and compared scores among groups to determine how the different treatments—LWL and SO—benefitted from the intervention. The assessment was longitudinal, meaning we only assessed students in 2015 who had been assessed in 2013. Our 2015 impact analysis yielded the following findings:

- LWL and SO treatments increased the number of students who reached Primary 3 (P.3), the equivalent of Grade 3 in the United States, by more than 40% when compared to the Control group.
- LWL students had significantly higher oral comprehension scores than students in the Control group.
- Neither treatment group had any significant impact on whether children met the basic literacy threshold; 31 percent of the entire sample did not meet this threshold.
- When comparing students who met the basic literacy threshold, LWL and SO students performed significantly better than Control students on reading comprehension.
- LWL students who met the basic literacy threshold also outperformed both other groups on reading fluency.

#### 1.3.2 Impact on Cohort 2 in 2015

Concurrently with the data collection for Cohort 1, we collected data from a new sample of 2,010 children in P.1 that we refer to as Cohort 2. The comparison of Cohort 2 reading scores across groups showed that students in the LWL group who met the basic literacy threshold had significantly higher reading fluency and reading comprehension scores when compared with the Control students. Students in the SO group also had significantly higher reading comprehension scores. Finally, fewer students in the LWL group and the SO group reported that they had repeated P.1, but we did not test for statistically significant differences as the data were student reported and therefore we could not verify their reliability.

Refer to Chapter 5 in the full impact analysis report for complete findings from 2015 on reading skills impact.

### **1.4 Research Questions**

The central question of this chapter is: **To what extent, if any, was the positive impact seen in 2015 sustained in 2017?**

With two longitudinal cohorts of students, there are many ways to approach this question. For this report, we answer two key sub-questions that require comparing students in one longitudinal and one cross-sectional analyses. Table 2 contains these sub-questions and lays out the groups compared to answer each of the sub-questions.

*Table 2: Research Sub-Questions, Analysis Type, Group, Cohort, & Data Collection Year,*

Research Sub-Question(s) for each comparison	Analysis Type	Comparison Group 1			Comparison Group 2 & 3		
		Group	Cohort	Year	Groups	Cohort	Year
Did 2015 gains persist two years after the end of direct implementation?	Longitudinal (within Cohort)	LWL	1	2017	- SO - Control	1	2017
How did outcomes for the LWL Cohort 2 students compare with the 2015 outcomes of LWL Cohort 1 students and Control Cohort 1 students?	Cross Sectional (between Cohorts)	LWL	2	2017	- LWL - Control	1	2015

## **1.5 Data**

### 1.5.1 Reading Skills Measurement & Student Outcomes

As no standardized, validated reading assessments existed in Kinyarwanda, the research team led the creation of the reading assessment tools in 2013 using a reading assessment template created by Save the Children (Dowd et al., 2017). Representatives from the Rwanda Education Board and Ministry of Education participated in the instrument creation to ensure it aligned with then-current expectations regarding reading abilities for students in early primary levels. Prior to the 2015 assessment, the Stanford research team and a team of inspectors from the Rwanda Education Board updated the reading assessment, removing certain subtests and adding in others to better capture a range of student reading skills.

Table 3 contains an overview of the reading assessments conducted in 2013, 2015, and 2017. We collected data on reading skills, student background, and aspects of the home and community literacy ecology. In 2017 we included English language measures since the language of instruction at the P.4 and higher levels in Rwanda is English.

*Table 3: Student Data Collected in 2013, 2015, & 2017*

Section & subsection	Description, examples, and/or N of items	Years Collected		
		'13 <sup>a</sup>	'15	'17
<i>Background / Demographic</i>				
General	Sex, age, home language/dialect	✓	✓	✓
Repetition & Promotion	Did you repeat P.1? If yes, how many times?	✓	✓	✓
Socioeconomic Status	Type of home, household size & possessions	✓	✓ <sup>b</sup>	
<i>Home Literacy Ecology</i>				
Home Print Materials	Presence & N of different text types at home	✓	✓	✓
Family Literacy Habits	Family size, N of family who child saw reading, read to child, help child study, & converse with child	✓	✓	✓
<i>Language &amp; Reading Skills<sup>c</sup></i>				
Syllabic Awareness	(a) Blending syllables [6 items]	✓		
	(b) Segmenting syllables [6 items]	✓		
Phonemic Awareness	(a) Similar beginning sounds [10 items]	✓		
	(b) Blending phonemes [12 items]	✓		
	(c) Segmenting phonemes [12 items]	✓		
Productive Vocabulary	Orally identifying pictures [22 items]		✓	✓
Listening Comprehension	Answering questions orally after listening to a short story [5 items]		✓	✓
Letter Identification	Identifying randomly ordered mixed-case letters [24 items]	✓	✓	✓
Decoding	Reading decodable pseudo words [2013: 10 items; 2015 & 2017: 17 items]	✓	✓	✓
Common Word Dictation	Writing high-frequency [2013: 10 items; 2015 & 2017: 17 items]	✓	✓	✓
Reading Comprehension	(a) Reading one-sentence statements and orally answering simple questions [2013: 7 items; 2015 & 2017: 10 items] (b) Oral completing written cloze sentences [7 items in 2013; 10 items in 2015 & 2017]	✓	✓	✓
Reading Fluency	N of words in a connected text read correctly in a minute. Includes 3 passages leveled for P.1 [23 words], P.3 [74 words], and P.4 [105 words] <sup>d</sup>	✓	✓	✓
English Receptive Vocabulary	Identifying which of 4 pictures corresponds to a word spoken by the assessor [22 items]		✓	✓
English Most Used Words	Reading high-frequency word [12 items]		✓	✓
English Decoding	Reading decodable pseudo words [12 items]		✓	✓
English Cloze	Orally completing written cloze sentences [7 items].		✓	✓
English Fluency	N of words in a connected text read correctly in a minute [56 words]		✓	✓

<sup>a</sup>Cohort 1 only. <sup>b</sup>Cohort 2 only. <sup>c</sup>Assessors administered all subtests in Kinyarwanda unless otherwise specified. Assessors asked used background questions and provided instructions to students in the Rukiga language/dialect for those children who spoke it home. <sup>d</sup>The P.4 passage administered only in 2015. Notes: '13=2013; '15=2015; '17=2017; P.1=Primary 1; P.3=Primary 3; P.4=Primary 4; Eng=English. All data were collected from student-reports.

*Table 4: Outcome Descriptions, Descriptives, & Reliability Estimates (Cohort 1)*

Outcome:	Reached P.5 (by 2017)	Language: Kinyarwanda				Language: English			
		Child met the basic literacy threshold	Oral Comp	Reading Comp	Reading Fluency	Receptive Vocab	Single Word Reading	Cloze	Fluency
Outcome creation / scoring	Student scored '1' if enrolled in P.5 in 2017	Student scored '1' if scored $\geq 18$ on letter id, $\geq 1$ on decoding, <u>and</u> $\geq 1$ on dictation	$\sum$ z-scores of listening comp & productive vocab	$\sum$ z-scores of reading comp & cloze	$\sum$ z-scores of words correct per minute P.1 & P.3 passages	English receptive vocab % correct	% correct on English Pseudo-words subtest	% of English Cloze Correct	Words correct per minute on the English passage z-score
N	1,282	1,282	1,282	1,282	1,282	1,281	1,281	1,275	648
Mean	0.271	0.863	0.004	0.002	0.007	0.650	0.468	0.059	41.664
Std Dev	0.444	0.344	1.607	1.435	1.553	0.189	0.303	0.146	26.143
Minimum	0	0	-6.844	-10.062	-4.633	0.000	0.000	0.000	2.597
Maximum	1	1	3.357	2.041	7.319	1.000	1.000	1.000	146.087
Coeff. alpha	na	0.925	0.516	0.924	0.938	0.644	0.709	0.056	0.940
IR agreement	na	99.1%	87.7%	88.7%	24.5%	91.5%	91.5%	99.1%	12.1%
IR kappa	na	0.958	0.872	0.882	0.231	0.907	0.904	0.972	0.119
IR ICC	na	0.979	0.975	0.999	0.995	0.990	0.994	0.983	0.992

*Notes:*  $\Sigma$ =sum of; Coeff=Coefficient; Comp=Comprehension; ICC = intraclass correlation coefficient; IR=Interrater; na=not applicable; P.1=Primary 1; P.3=Primary 3; P.5=Primary 5; Std Dev=Standard Deviation; Vocab=Vocabulary. Means, standard deviations, minimum and maximum values presented for the entire analytic sample in 2017.

### **1.5.2 Supportive Learning Practices Index & Home Reading Materials Index Creation**

In 2013 and 2015, we conducted a Home Literacy Ecology survey of parents and family members of students in our sample. In 2017, however, we were unable to conduct this survey. Therefore, we rely on data collected during the student reading assessments in 2013, 2015, and 2017 to measure impact on the home literacy ecology.

During the reading assessment, we asked children about the reading materials and the literacy-related practices and habits of their home and family. Every child was asked, “Who do you live with?” Assessors then asked the child to list their family members, and asked whether in the past week, that person was a) seen reading, b) read to the child, c) helped the child study, or d) had a conversation with the child (a conversation consists of more than a simple request or order). This was done for up to 8 family members, as piloting revealed few students (less than 5 percent of the sample) lived in homes with more than 8 family members and the cost of collecting data on more than 8 members outweighed the benefit of those data.

For the supportive learning practices index, we turned those data on literacy habits of their home into percentages of family members who performed the four activities above. We weighted the two items that we theorized were most directly linked to literacy improvement, the percentage of family members helping children to study and reading to children, by multiplying them by two. We then summed the 4 percentages (two weighted and two unweighted), added 0.5 to everyone’s score to ensure there were no zero scores<sup>4</sup>, and took the started natural log of the sum to use as our supportive learning practices index.

For the home reading materials index, we asked children about the different types of print materials they had in their homes: textbooks, storybooks, newspapers/magazines, religious writing (e.g. Bibles), storybooks, comic books, and other booklets (e.g. small books where health-related data, like immunizations, is recorded). These were all items that we identified during piloting as potential print that might be in homes in rural Rwanda. We created binary variables for each of these different types of books and weighted the storybooks and comic books by multiplying the corresponding binary variables by 3 and 2, respectively. We then summed the weighted number of book types, added 0.5 to the sum for everyone in the sample, and took the started natural log of the sum to use as our reading materials index.

### **1.5.3 Student Sample & Treatment Assignment Update**

In both 2013 and 2015, we excluded a small proportion of students from the analytic sample as we could not determine in which sector they lived, and hence which treatment they received. In 2017, students provided us with better data on where they lived, enabling us to reclassify the group assignment for a very small percentage of students. Also, prior to the 2017 assessment, the implementing partner Umuhuza gave us access to their monitoring data, which provided more reliable home location data than we previously possessed<sup>5</sup>.

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<sup>4</sup> This was necessary to do as it is not possible to convert 0 into a natural log.

<sup>5</sup> One other possible reason for changing group assignments is that children’s families moved from one sector to another. We did not collect data on this and therefore cannot estimate how often, if at all, this occurred. However, we assume it happened randomly and therefore any error introduced by this to be distributed randomly across the sample, and may only attenuate findings.

Based on these updated home location data, we reclassified children into different treatment groups. These reclassifications create some discrepancies in sample sizes between the 2015 impact evaluation and our current report.

Table 5 contains a comparison of group and overall sample sizes using the old 2015 group assignment and the updated 2017 group assignment. The topmost panel shows our sample size for all three assessments based on the 2015 group assignment. The center panel shows our sample size for all three assessments based on the updated group assignment. The bottom panel explicitly shows how many students were reclassified due to the conflicting group assignment variables. Table 5 also shows the number of students who participated in all three assessments. Of the 1,296 students in our 2017 sample, 1,192 students (92%) had been assessed during each assessment in 2013, 2015, and 2017. This is 58% of the original sample of 2066 students assessed at baseline in 2013.

*Table 5: Comparison of Sample Sizes in 2015 & 2017 Following Treatment Reclassification*

			N in 2013	N in 2015	N in 2017	N Assessed all Three Years
Cohort 1	2015 Group Assignment	Control	634	521	399	373
		LWL	713	602	449	420
		SO	694	545	423	382
		Unknown	70	25	25	0
		Total assessed	2111	1,693	1,296	1,175
	2017 Group Assignment	Analytic Sample	2041	1,668	1,271	1,175
		Control	635	520	400	385
		LWL	720	606	454	420
		SO	699	548	428	387
		Unknown	57	19	14	0
Cohort 2	2015 Group Assignment	Total assessed	2111	1,693	1,296	1,192
		Analytic Sample	2054	1,674	1,282	1,192
		Control	na	590	385	na
		LWL	na	644	385	na
		SO	na	692	432	na
	2017 Group Assignment	Unknown	na	84	42	na
		Total assessed	na	2010	1244	na
		Analytic Sample	na	1926	1202	na
		Control	na	602	397	na
		LWL	na	651	392	na
	2017 Group Assignment	SO	na	715	455	na
		Unknown	na	42	0	na
		Total assessed	na	2010	1244	na
		Analytic Sample	na	1968	1244	na

Notes: LWL = Life-wide Learning Group; SO = School-only group; na = not applicable.

We assessed whether the reclassification of treatment assignment had any effect on the impact findings observed at endline for Cohort 1 and Cohort 2. We found no significant differences that would change impact estimates or conclusion made in the Impact Analysis Report. Results of this comparison can be seen in the Appendix in Table 9**Error! Reference source not found..**

#### ***1.5.4 Data Collection***

The final round of data collection took place in late August and September of 2017. Teams of assessors used identifying information collated from previous assessments to identify students for reassessment. We followed nearly all the same procedures for collecting data in 2017 as were followed in 2015<sup>6</sup> to reduce any error that may arise from different approaches to data collection, thereby enabling the best assessment of sustainability possible.

There is one notable difference in the data collection in 2017. In 2015, the assessment teams assessed children in 97 of the 103 schools in Gicumbi. This included the original 85 schools assessed in 2013 and an additional 12 schools. By increasing the number of schools visited in 2015, we located 56 students from the 2013 assessment who had switched schools. In 2017, we only had time and funding to visit 94 schools. Therefore, the students who had switched schools by 2015, and any other students who may have switched to non-assessed schools since the 2015 assessment, were likely not included in our 2017 sample. We use the 2017 sample of 1,296 Cohort 1 students and 1223 Cohort 2 students for our analysis.

Please refer to Chapter 4 of the Impact Evaluation (Friedlander, Malik, Galloway, Zhou, & Sun, 2016) for more details on the how we tracked students longitudinally, the assessment teams, the assessment administration, interrater reliability procedures, and many other details related to data collection. The internal and interrater reliability estimates (coefficient alpha, interrater agreement, interrater kappa, and the interrater intraclass correlation coefficient) for the 2017 assessment are found in the bottom rows of Table 4.

### **1.6 Methods to Estimate Sustainability**

#### ***1.6.1 Outcome Creation***

##### ***1.6.1.1 Longitudinal Data for Cohort 1 & Cohort 2***

We created the same 5 outcomes using the 2017 data as we used in the 2015 analysis to enable direct comparisons between the two assessments, with a few exceptions.

- For Cohort 1, the outcome related to repetition, ‘Reached P.3 in 2015’, was changed to ‘Reached P.5 in 2017’.
- For Cohort 2, we created a ‘Reached P.3 in 2017’ outcome.
- A software malfunction during the 2017 assessment made the reading fluency data for the P.4 passage unusable, and the standardized reading fluency outcomes were created using solely the P.1 and P.3-leveled passages.

##### ***1.6.1.2 Cross Sectional Data: Comparing Cohort 1 2015 and Cohort 2 in 2017***

To compare different treatment and control groups across the cohorts, we use 2013 data as ‘baseline’ data for Cohort 1, and 2015 data as ‘baseline’ for Cohort 2. Similarly, we use Cohort 1 data collected in 2015 as ‘endline’ data for Cohort 1, and we use Cohort 2 data collected in 2017 as ‘endline data for Cohort 2. We combine the baseline and endline datasets across the years into one dataset and standardize the relevant outcomes across the entire combined data set of both cohorts.<sup>7</sup>

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<sup>6</sup> Please refer to Chapter 4 of the Impact Evaluation (Friedlander, Malik, Galloway, Zhou, & Sun, 2016) for more details on the how we tracked students longitudinally, the assessment teams, the assessment administration, interrater reliability and many other details. Interrater reliability estimates for the 2017 assessment are found in the bottom rows of Table 4.

<sup>7</sup> Since the cross-sectional analyses excluded certain groups (i.e. Control & SO Cohort 2 and SO Cohort 1), we looked at how the sample distribution changed depending on whether standardization occurred across the entire

### ***1.6.2 Data Analysis***

We fit all our regression models according to the model below. We estimate the sustainability of the impact of SO and LWL treatments on student outcomes described above using multi-level models to account for clustering of observations within sectors. The predicted outcome for student  $i$ , in sector  $j$  of randomization block  $k$  is given as:

$$Outcome_{ijk} = \beta_0 + \beta_1(LWL_j) + \beta_2(SO_j) + \beta_3(Mod1_i) \dots + \beta_n(ModX_i) + \omega_k + T_j + \varepsilon_{ik}$$

Random effects  $T_j$  and  $\varepsilon_{ik}$  account for error at the sector and student levels, respectively.  $\omega_k$ , a vector of randomization block fixed effects, accounts for the blocked randomization. To properly understand the significant differences in our models, we specify several different sets of moderator variables to include within each model that may influence *Outcome* for student  $i$ . Hence, *Mod1<sub>i</sub>* adjusts for the first moderator variable included in the model for student  $i$ , and *ModX* adjusts for the  $x^{\text{th}}$  moderator variable for student  $i$ , *LWL<sub>j</sub>* indicates whether sector  $j$  was assigned to the LWL group in 2013, *SO<sub>j</sub>* indicates whether sector  $j$  was assigned to the SO group in 2013. The coefficients of interest that determine treatment impact are  $\beta_1$  and  $\beta_2$ ; all other covariates (including indicator variables for randomization blocks) are grand mean centered within the analytic sample for that outcome.

We fit all models using Stata version 14.1's *mixed* and *melogit* commands. Models use restricted maximum likelihood estimation and the Kenward-Roger method to compute degrees of freedom for the models and calculate  $p$  values to adjust for sample sizes at the sector and block level (Kenward & Roger, 1997; Schaalje, McBride, & Fellingham, 2002). Continuous outcome variables are standardized within the analytic sample and expressed in effect sizes. For ease of interpretation, binary outcome variables are translated into percentage points to describe the predicted probability of the outcome for an average student in each group while holding the grand-mean centred covariates constant at zero. As such, predicted probabilities provide the expected outcome for the average student in the sample.

Following the comparison of the control and treatment groups, we also compare the effect of LWL directly with that of SO. To estimate the differences between continuous outcomes, we estimate  $\widehat{\beta}_1 - \widehat{\beta}_2$  using Stata's *lincom* command. For binary variables, we estimate the difference in predicted percentage point estimates from the LWL and SO groups (i.e., converting the treatment estimates plus constant term) using the *nlincom* command. All comparisons of treatment effects use 15.5 degrees of freedom, using the number provided by the Kenwood-Roger corrections in the main impact models. The estimates comparing LWL and SO groups are provided as differences in predicted outcomes for these two treatment groups.

For each outcome, we fit several different models that control for relevant variables and use the results of the different models to identify trends in differences between groups in this exploratory analysis. This is done as a robustness check, to confirm that any significant findings reflect the actual situation of students and are not arising from chance.

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data set for all students and cohorts or within the specific subset of students compared in a specific analysis. We found no substantive difference between the two methods. Further, we looked at whether the standardization of outcomes across the two cohorts, as opposed to within each cohort, substantively changed findings reported in Friedlander & Goldenberg (2016). We found no substantive differences between these two methods either. The results of these methodological comparisons are available upon request.

To determine whether the impact on the literacy ecology was maintained, we conduct a cross-sectional analysis to simultaneously compare the impact of treatment Cohort 1 students assigned to the LWL treatment, Cohort 2 students assigned to LWL, and Cohort 1 students assigned to Control. To do this, we treat values from Cohort 1 collected in 2015 as ‘endline’ values for Cohort 1, and values from Cohort 2 collected in 2017 as ‘endline’ values for Cohort 2.

## 1.7 Findings

### 1.7.1 Attrition Analysis & Baseline Equivalence

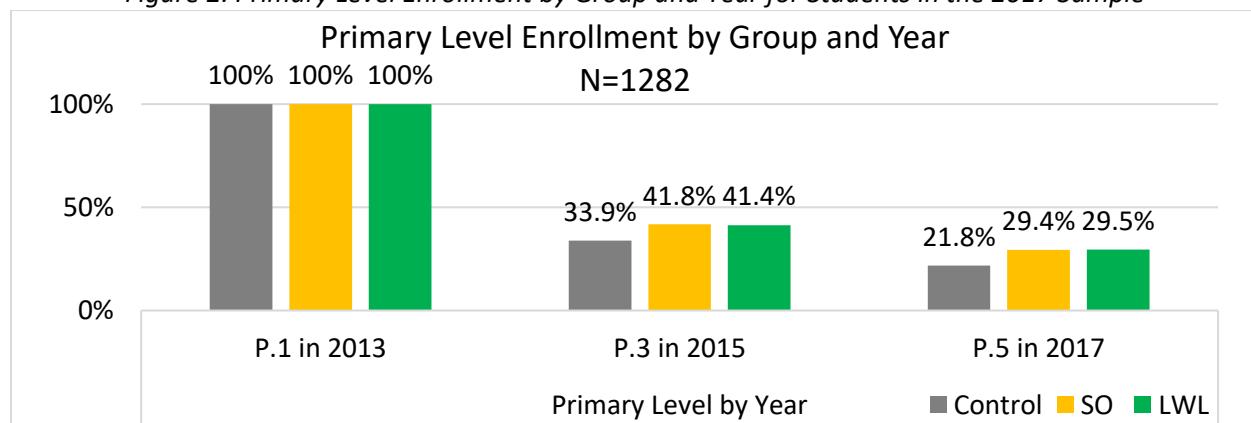
There was no significant difference between groups in the number of students who attrited from the sample (for the full regression models predicting attrition, refer to the appendix). As shown in Friedlander & Goldenberg (2016), the groups in Cohort 1 were not significantly different from each other at baseline. The lack of significant difference between groups at baseline, and the non-significant difference in attrition imply that we may compare 2017 outcomes between groups within Cohort 1 without controlling for other moderating variables. For the cross-sectional sample, there were significant differences in attrition. We believe this difference is due to the fact that assessment teams were instructed to focus on assessing students in Cohort 1, and anecdotal evidence suggests that students in Cohort 2 were at times left unassessed in order to ensure that the highest number of Cohort 1 students were included in 2017. As such, we do not include any controls for attrition in the cross-sectional analysis, and therefore we interpret any results from the cross-sectional analysis with caution.

### 1.7.2 Student Promotion & Repetition

2015 findings: Both the LWL Group and the SO Group had repeated fewer primary levels. That is, more students in both treatment groups were enrolled in Primary 3 in 2015 when compared to the Control group. There were no significant differences between the two treatment groups.

For this outcome in 2017, we only analyze data for Cohort 1. We first examined the raw numbers on student enrollment and repetition, seen in Figure 2.

*Figure 2: Primary Level Enrollment by Group and Year for Students in the 2017 Sample*

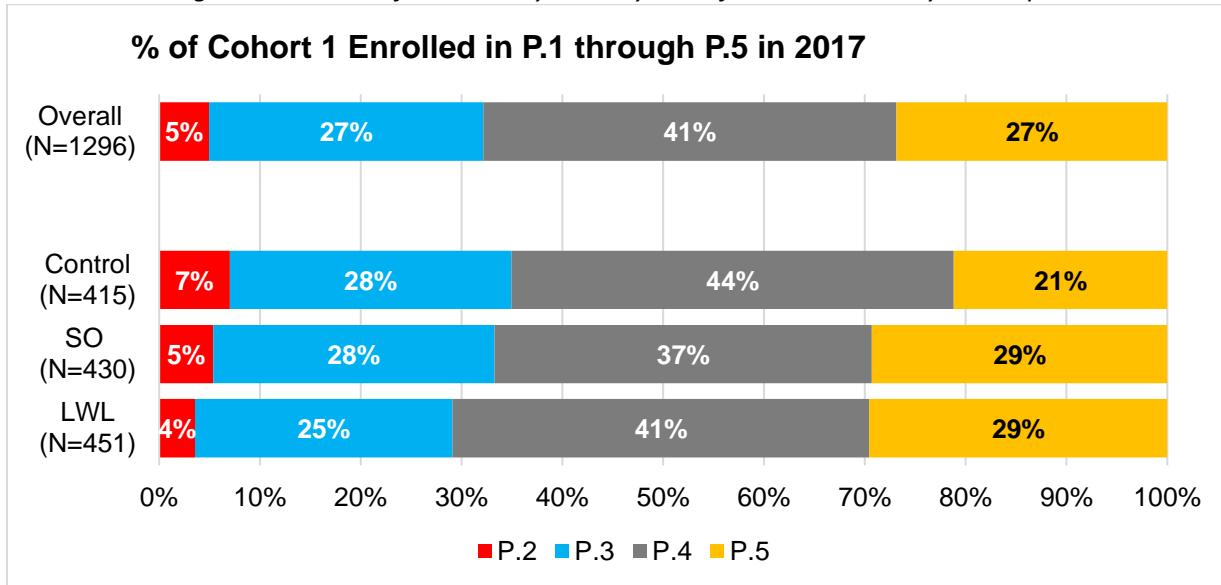


As Figure 2 shows, there is a visually identifiable difference in Cohort 1 among groups, with the SO and LWL groups reaching P.5 at higher rates than the Control group.<sup>8</sup> Figure 3 shows the distribution of

<sup>8</sup> In the appendix to this chapter, we also explore student enrollment for the entire sample who participated in the 2013 assessment, including students who attrited.

Cohort 1 students across the Primary levels as well, and also suggests that a significant difference exists between Control and treatment groups.

*Figure 3: Percent of Cohort 1 by Primary Level for the 2017 Analytic Sample*



We now turn to inferential statistics to determine whether these differences are statistically significant. To estimate whether more children in one group were enrolled in P.5 in 2017 versus other groups, we fit several different logistic regression models, controlling for a variety of potential moderating variables and restricting the sample to better understand the sustainability of the impact. In Table 6Table 6, we show the results of two of those models: one that controls only for randomization blocks, and another that includes a control for Phonological Awareness in 2013.

*Table 6: Regression Models Predicting whether Cohort 1 Children Enrolled in P.5 in 2017*

Outcome	Reached P.5	Reached P.5
In LWL group	0.852** (0.303)	0.758** (0.256)
In SO group	0.588* (0.285)	0.668** (0.239)
Phonological Awareness 2013		0.340*** (0.029)
Randomization Blocks	X	X
Constant	-1.538*** (0.214)	-1.703*** (0.186)
Observations	1,282	1,282
Number of groups	21	21

Notes: Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10.

Differences between the LWL and SO group are not significantly different from zero.

Children assigned to the LWL and SO treatments were all significantly more likely to reach P.5 in 2017 than their peers who were assigned to the control treatment. We therefore conclude that the impact of Literacy Boost on children's primary level promotion is sustained two years following the end of direct implementation of Literacy Boost activities.

### 1.7.3 Language and Reading Skills

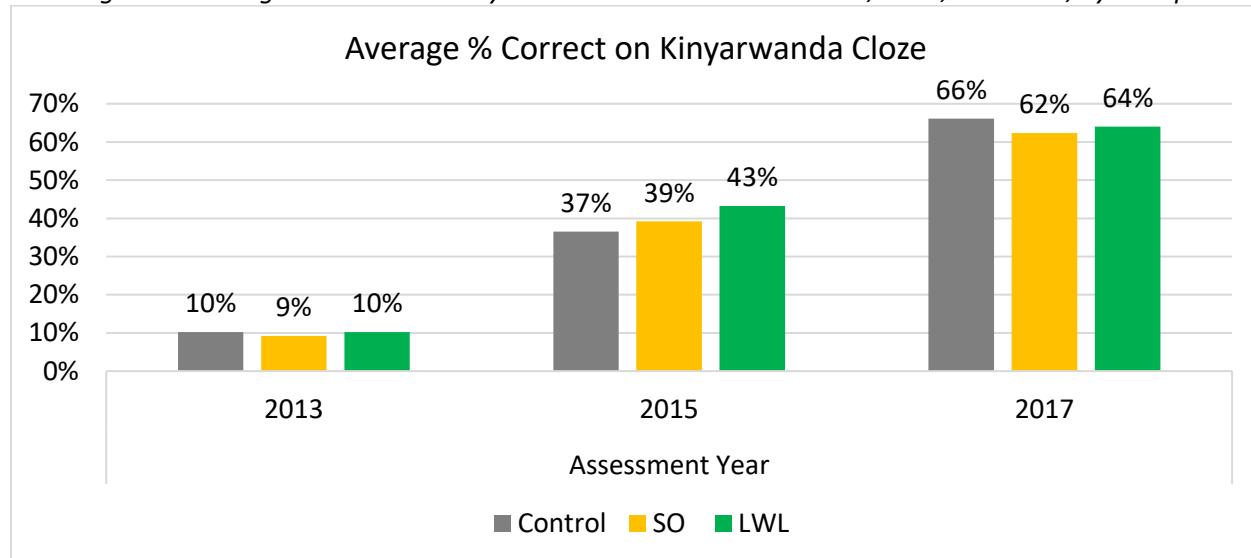
*2015 findings: There were several differences between the treatment and control groups in 2015:*

- The LWL group had significantly higher scores on Oral Comprehension;
- For students who met the basic literacy threshold, those in the LWL group had significantly higher scores on Reading Fluency when compared to either the SO or Control group; and
- Students in both the SO and LWL group outperformed students in the Control group.

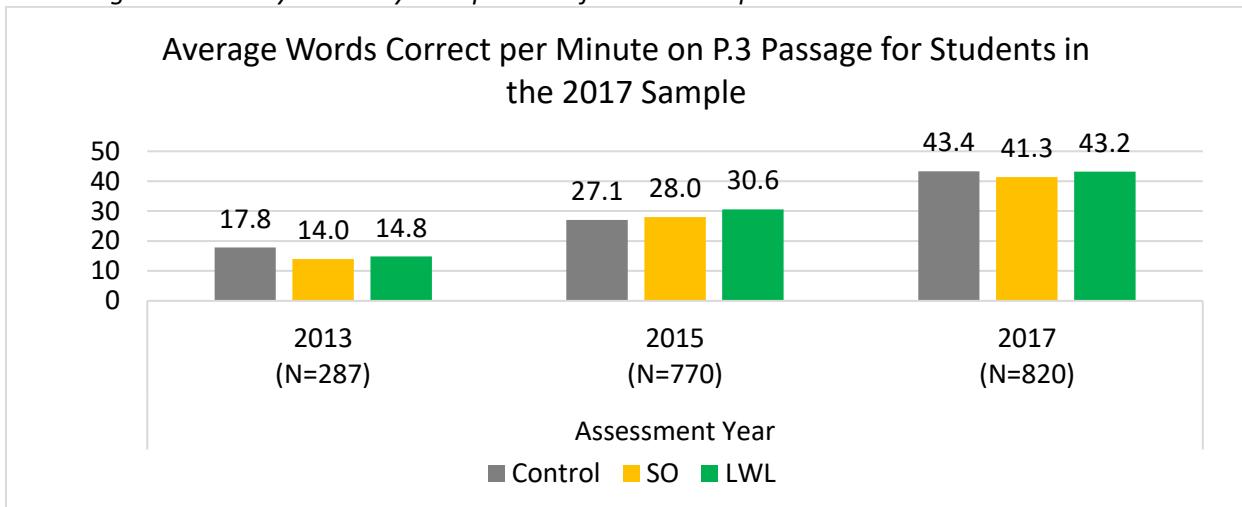
Similar to the analysis of repetition and promotion reported above, we specified several different models for three sample sets of students to explore how, if at all, the impact seen in 2015 was sustained. Our difference models controlled for baseline phonological awareness, primary level, and endline outcomes in a variety of ways. However, none of the models we fit indicated that any significant difference existed between groups on oral comprehension, reading fluency, reading comprehension, or whether the student met the Basic Literacy Threshold. This was true whether we controlled uniquely for treatment assignment, or whether we controlled for grade level, endline outcomes, and baseline phonological awareness in a variety of different formulations.

In practical terms, this means that students assigned to the Control group in 2013, who lagged behind their peers in the SO and or LWL group in 2015, had caught up to their peers by 2017. Figure 4 and Figure 5 use descriptive statistics of scores on various subtests to demonstrate this relationship graphically.

*Figure 4: Average % Correct on Kinyarwanda Cloze Subtest in 2013, 2015, and 2017, by Group*



*Figure 5: Fluency Scores by Group & Year for 2017 Sample Students who could read in 2015*



#### 1.7.4 Differences on English Language & Reading Measures

*2015 findings: We did not analyze children's English language and reading skills in 2015.*

We fit additional models looking at children's achievement in English on the following skills: Receptive Vocabulary, Pseudo Word Decoding, Most Used Words, Cloze, and Fluency. We did not find any significant difference among groups. When we take into account that Literacy Boost activities in both the school and outside the school focus on Kinyarwanda literacy skills, this finding may not be so surprising.

#### 1.7.5 Differences in Children's Reading Materials & Supportive Learning Practices at Home

*2015 findings from the Literacy Ecology Survey of the Home: We found significant differences between the home literacy ecology of students in the LWL group and the Control group. Specifically, students in the LWL group scored significantly higher on the Reading Materials, Reading Habits, and Interest & Engagement factors.*

Table 7 and Table 8 display the regression models predicting the home reading materials index and the supportive learning practices index. For the home reading materials index, the results shown in Table 7 show that no significant difference existed between the LWL group in Cohort 1 and the Control group also in Cohort 1. The negative, marginally significant or significant coefficients associated with the LWL group in cohort 2 suggest that the reading materials at home for students may not be as high as they were in 2015, pointing at a decline in the number of different types of materials at home.

**Table 7: Models Predicting Home Reading Materials Index at Endline (Cross-Sectional Sample)**

Outcome Model	Outcome: Home Reading Materials Index at Endline				
	(1) †	(2) ‡	(3) †	(4) †	(5) †
In Cohort 1 LWL group	0.045 (0.103)	0.027 (0.095)	0.040 (0.091)	0.017 (0.099)	0.022 (0.090)
In Cohort 2 LWL group	-0.184~ (0.106)	-0.281** (0.100)	-0.181~ (0.095)	-0.195~ (0.102)	-0.191* (0.093)
Met the Basic Literacy Threshold at Baseline		0.338*** (0.060)			
Reading Materials Index in 2013 (Cohort 1) & 2015 (Cohort 2)			0.242*** (0.026)		0.213*** (0.027)
Supportive Learning Practices Index in 2013 (Cohort 1) & 2015 (Cohort 2)				0.270*** (0.044)	0.162*** (0.045)
Randomization Blocks	x	x	x	x	x
Constant	0.032 (0.072)	-0.015 (0.067)	-0.163* (0.067)	-0.318*** (0.089)	-0.348*** (0.084)
Observations	1,577	1,568	1,577	1,576	1,576
Number of groups	14	14	14	14	14

*Notes:* Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10. Significant beta-coefficients indicate a significant difference between the specified group and the Control Group regressions above use the Control group in Cohort 1 as the comparison group. † indicates the difference between the Cohort 1 LWL group and the Cohort 2 LWL group is significant at p<0.01. ‡ indicates the difference between the Cohort 1 LWL group and the Cohort 2 LWL group is significant at p<0.001

For the supportive learning practices index<sup>9</sup>, the between-group comparison shown in Table 8 tells a different story. First, in the Cohort 1 group, students assigned to the LWL treatment reported a clear and consistently higher amount of supportive learning practices at home when compared to the control group in Cohort 1. The significance of the coefficients associated with the Cohort 2 LWL group show that these differences were sustained two years following the intervention. Further tests comparing the LWL groups directly across cohorts reveal that Cohort 2 had even higher amounts of supportive learning practices than the LWL Cohort 1 group. This suggests that the impact of treatment on the supportive learning practices may have even accelerated following the end of the treatment activities two years previously.

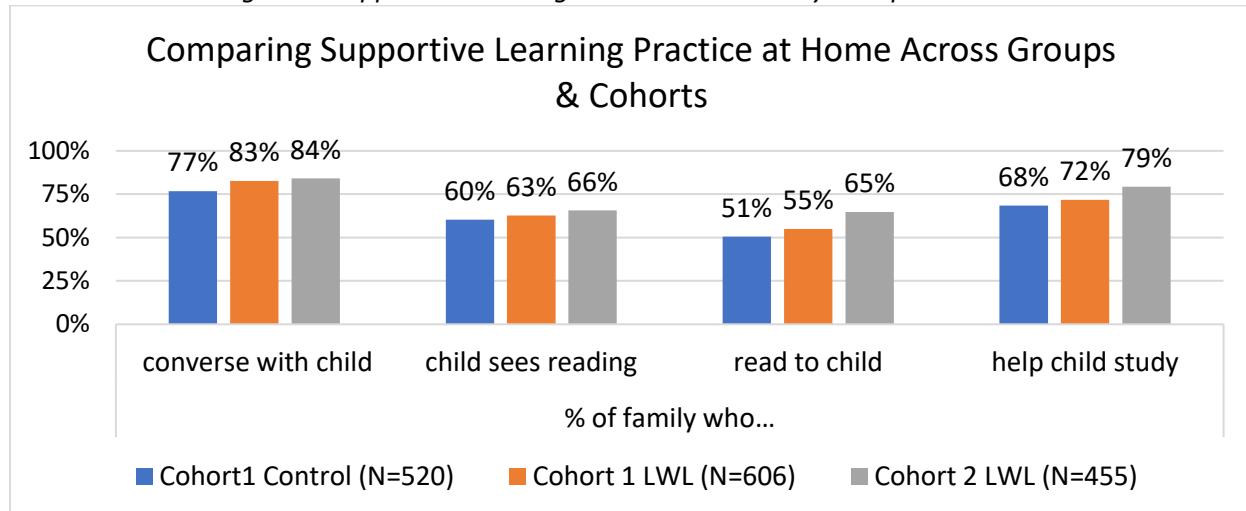
<sup>9</sup> In past reports, we have referred to this measure as the Reading Habits Index. However, the items that make up this index – the percentage of family members who are seen reading, who read to the child, who help the child study, and who have conversations with the child – are better described as supportive learning practices.

**Table 8: Models Predicting Endline Supportive Learning Practices (Cross-Sectional Sample)**

	Outcome: Supportive Learning Practices Index at Endline				
	(1) ^	(2)	(3)†	(4)†	(5) †
In Cohort 1 LWL group	0.331*	0.315*	0.314**	0.316*	0.308*
	(0.143)	(0.134)	(0.121)	(0.151)	(0.135)
In Cohort 2 LWL group	0.509***	0.440**	0.496***	0.520***	0.512***
	(0.145)	(0.138)	(0.124)	(0.153)	(0.137)
Met the Basic Literacy Threshold at Baseline		0.217***			
		(0.061)			
Reading Materials Index in 2013 (Cohort 1) & 2015 (Cohort 2)			0.168***		0.121***
			(0.026)		(0.027)
Supportive Learning Practices Index in 2013 (Cohort 1) & 2015 (Cohort 2)				0.296***	0.233***
				(0.043)	(0.045)
Randomization Blocks	x	x	x	x	x
	-0.277**	-0.303**	-0.402***	-0.670***	-
Constant	(0.099)	(0.094)	(0.087)	(0.119)	0.679*** (0.109)
Observations	1,577	1,568	1,577	1,576	1,576
Number of groups	14	14	14	14	14

*Notes:* Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10. The regressions above use the Control group in Cohort 1 as the comparison group. ^ indicates the difference between the Cohort 1 LWL group and the Cohort 2 LWL group is significant at p<0.05. † indicates the difference between the Cohort 1 LWL group and the Cohort 2 LWL group is significant at p<0.01. ‡ indicates the difference between the Cohort 1 LWL group and the Cohort 2 LWL group is significant at p<0.001.

**Figure 6: Supportive Learning Practices at Home by Group and Cohort**



In Figure 6, we see the raw scores by group and cohort for the percentage of the family who engages in different kinds of supportive learning practices. The findings of the regression models are clearly reflected in these descriptive statistics, which show that students in Cohort 1 in the Control group had the lowest percentage of family members engaging in specific activities, while the treatment students in Cohort 2 had the highest percentage of family members engaged in supportive learning practices.

## **1.8 Summary of Findings & Discussion**

In this chapter, we analyzed student level data collected in 2017 and compared outcomes from the original treatment groups of the randomized control trial of Literacy Boost in Rwanda. We found solid evidence that the positive impact of Literacy Boost activities on student promotion and repetition was sustained. That is, children in the SO and LWL groups reached Primary 5 at significantly higher rates than their Control counterparts. We also found evidence that improvements in the supportive learning practices at home were sustained, suggesting that the improvements in the overall culture of reading in treatment villages was sustained, and even further improved, two years after active implementation ended.

The one critical area where we did not find evidence for sustained impact was on the language and literacy skills of students assigned to LWL and SO groups. To understand these findings, or lack thereof, it is critical to account for the design of the study and the context in which we collected data. At the time of 2017 data collection, two years had elapsed since the end of direct implementation of activities in LWL schools and villages. Similarly, the direct implementation of school-based activities for schools in the SO group also had finished two years earlier, at the end of 2015. In the intervening years from January 2016 through the end of 2017, the Save the Children and Umuhuza implemented the full Literacy Boost program in all schools and communities in the Control group sectors, and also implemented the Literacy Boost family and community activities in villages in the SO group sectors. This reversal of treatment was a pre-requisite to obtain research approval, and more importantly was a good practice ethically to ensure that children, families, communities, and schools were not denied potentially beneficial support due to random assignment. We believe it highly likely that this treatment reversal, while good for the population in the project, obscured the possibility of finding further significant differences in this follow-up study.

There are two reasons why we think the reversal of treatment during the 2016 and 2017 school years obscured evidence of sustained impact on language and literacy skills. The first reason is that a greater portion of our Control group actively participated in Literacy Boost activities at home, in their communities, and in school. Under Western assumptions, we would expect the majority of students assessed in P.1 in 2013 would be in P.4 by 2016, at which time the treatment groups were scheduled to be reversed. As Literacy Boost is targeted for children in the earlier primary levels (P.1 to P.3), children in Control sectors, once they enrolled in P.4, would no longer directly participate in treatment activities. However, in 2015 we estimated that P.1 and P.2 annual repetition rates stood around 40 percent. That is, only 6 out of every 10 students that we assessed in 2013 progressed to the next primary level in 2014 and again in 2015. This repetition rate was highest in the Control group. This means that a sizeable portion of our Control group from Cohort 1 directly participated in treatment activities in 2016 and 2017, as they were enrolled in P.2 and P.3, primary levels that implementers targeted for inclusion in activities. The greater exposure of our Control group to treatment activities is one possible explanation for non-significant difference between groups.

The second reason the reversal of treatment may explain a lack of significant group differences in language and literacy skills is the nature of the family and community context in our project district. Communities in rural areas tend to be tight-knit. When activities are occurring in a village, most villagers know and may observe or participate in those activities. Regardless of the primary level in which our children in our sample were enrolled, everyone in the village had an opportunity to at least observe Reading Clubs if not to actively participate. Control students who had reached P.4 by 2016 may have participated in the Reading Buddy activity as the older Buddy rather than the younger buddy, which in theory would give them more regular, enjoyable moments to practice their reading. Further, students

who had reached P.4 in 2016 may have had younger siblings still in P.1, P.2, or P.3, which would mean that their parents or caregivers had the potential to participate in Reading Awareness Workshops. This would certainly explain the lack of significant findings on the reading habits index in 2017.

The reversal of treatment groups, in theory, would not affect whether children reached P.5. If the impact of treatment sustained, children should continue progressing through Primary school levels. Those who fell behind before the treatment groups were reversed had little possibility of catching up, barring the unlikely chance that they could skip a primary level. This may explain why, in our data, we found that the impact of treatment on Primary level promotion was sustained into 2017. Significantly more students in the LWL and SO groups reached P.5 than in the Control groups.

Though the reversal of treatment groups is one likely explanation, there are many others that might shed light onto why did not see sustained impact on language and literacy skills. As was true throughout our study, we conducted our analysis at the sector level. With only 21 sectors in the district, conducting the analysis at this level, while methodologically rigorous, nevertheless limited our statistical power to detect differences between groups.

We did not find any sustained impact on students' English language or reading skills. English is taught as a subject during P.1 through P.3. In P.4, teachers switch to using English as the main language of instruction. The Literacy Boost activities, however, focus on supporting children to learn in their first language. As such, it is not surprising to find little observable impact on children's English language and reading skills.

One mixed set of findings to arise from the analysis involves the Home Literacy Ecology. Students in the LWL group in Cohort 2 reported having fewer types of reading materials at home, pointing to a need to address children's long-term access to a wide variety of reading materials. These findings are not surprising, however, given that children in Control sectors in 2016 and 2017 had an influx of reading materials through the Book Banks provided by Save the Children and Umuhuza. It is unlikely that villages in LWL sectors in 2016 and 2017 were able to replenish the supply of reading materials in Book Banks they received two years prior. More broadly, without external support, it may be difficult for families and communities to meet long-term demand for reading materials due to lack of resources.

Most importantly, the supportive learning practices that children reported occurring at home seemed to increase for children in LWL sectors, suggesting that families were sustainably engaging in Literacy Boost-recommended practices to support children's life-wide learning opportunities. This suggests a sustainable improvement in the culture of reading of families in Gicumbi. Though the cross-sectional analysis precludes us from asserting a causal relationship, this finding cuts to the heart of the challenge facing Rwanda: how to create a reading culture where none previously existed. The lessons that families learned in the Reading Awareness Workshops, the families' ability to see Reading Clubs in action, and children's own learning growth may be important factors in the growth of a reading culture.

Despite somewhat encouraging findings, certain limitations exist to our findings. First, we could not find approximately 40 percent of the sample that we originally assessed in 2013. We assume that some portion of these 40 percent of students were merely sick or absent the particular day that we visited their school, and that others had merely switched schools. But we also assume that a large portion of these children no longer attend school. This indicates that Rwandan educators face great challenges in ensuring that every child receives a quality primary education.

Second, we had unbalanced attrition rates between Cohort 1 and Cohort 2. We believe this arose because, with more limited resources than we were expecting for 2017 data collect, we instructed assessment teams to focus on finding students in Cohort 1. In our regressions predicting the reading materials index and the supportive learning practices index, we did not include controls that controlled for this differential attrition, so those findings must be interpreted cautiously.

Third, significant differences *did* exist between children who attrited from the sample and those we assessed at follow-up timepoints. Students who could read in 2013 and 2015 were more likely to be present in 2017. It is possible that our significant impact disappeared because, overtime, children who struggle to read are less likely to continue in their education, leaving only the most able readers in either group who don't benefit as greatly from the life-wide learning intervention. Another explanation may be that the impact of Literacy Boost treatment may only improve skills in lower primary levels, and the higher levels, in which teachers use English, may require different activities and interventions to fully help students achieve their potential.

Fourth, since January of 2016, Umuhuza and Save the Children changed their implementation approaches. These are described briefly in the previous chapters, but it is difficult to determine precisely the impact of the changed approaches. The changes were made with an eye on sustainability, and the implementers had had two years of experience (2014 and 2015) to improve their implementation approach. With the loss of our control group against whom to compare, we cannot say for certain how these changes may have helped accelerate the Control groups reading skill growth.

Fifth, nationwide initiatives, including *Mureke Dusome*, the Language Literacy and Learning Initiative, and the introduction of a new competency-based curriculum may have altered the landscape of schooling in ways that we could not capture. All children in our project district had equal exposure to all these initiatives, meaning that the impact of the initiatives would affect all students equally. But we cannot say for certain *what* that impact was, and how it changed or didn't change the outcomes of the sustainability analysis for our original treatment groups.

In conclusion, the data suggest that some degree of positive impact was sustained on the treatment groups. Children in the treatment groups were more successful at reaching Primary 5, and reported more supportive learning practices at home. Future research should look at longer term sustainable impact, and should expand outward from a narrow look on reading skills to a broader view of the culture of reading as a whole.

## 1.Appendix

### Difference Between the 2015 and Updated 2017 Group Assignment

Table 9: Comparing 2015 Outcomes for Revised Treatment Assignments

		Reached P.3 2015	Oral Comp 2015	Met the Basic Literacy Threshold 2015	K Fluency 2015	Text Comp 2015
2015 Outcomes based on 2015 Treatment Assignment	Life-wide Learning Group	0.494* (0.213)	0.350** (0.131)	0.218 (0.406)	0.289*** (0.086)	0.325*** (0.093)
	School-Only Group	0.547** (0.204)	0.072 (0.126)	0.054 (0.388)	0.132 (0.084)	0.208* (0.090)
	Phonological Awareness 2013	0.319*** (0.024)	0.094*** (0.007)	0.319*** (0.026)	0.113*** (0.008)	0.118*** (0.008)
	Constant	-0.922*** (0.148)	-0.150~ (0.089)	0.943*** (0.276)	-0.151* (0.060)	-0.191** (0.065)
	Observations	1,668	1,650	1,650	1,136	1,135
	Number of sectors	21	21	21	21	21
2015 Outcomes Using Revised 2017 Treatment Assignment	Life-wide Learning Group	0.486* (0.214)	0.352** (0.133)	0.219 (0.405)	0.288*** (0.086)	0.321*** (0.094)
	School-Only Group	0.528** (0.204)	0.074 (0.128)	0.064 (0.387)	0.135 (0.084)	0.214* (0.091)
	Phonological Awareness 2013	0.320*** (0.024)	0.094*** (0.007)	0.318*** (0.026)	0.113*** (0.008)	0.117*** (0.008)
	Constant	-0.914*** (0.149)	-0.152~ (0.091)	0.935*** (0.275)	-0.152* (0.060)	-0.192** (0.066)
	Observations	1,674	1,656	1,656	1,139	1,138
	Number of sectors	21	21	21	21	21

Notes: Standard errors in parentheses. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10

### Attrition & Baseline Equivalence-Related Statistics

*Table 10: Attrition Analysis & Baseline Differences in the 2017 Analytic Sample for Cohort 1*

VARIABLES	Assessed in 2017	Met the					Phono Aware- ness in 2013	Repeated P.1 before 2013	Sex
		Supportive Learning Practices Index 2013	Reading Materials Index in 2013	Basic Literacy Threshold in 2013	SES				
In LWL group	0.254 (0.195)	0.050 (0.138)	0.074 (0.133)	0.339 (0.348)	-0.048 (0.124)	0.217 (0.172)	-0.385 (0.235)	0.096 (0.171)	
In SO group	0.204 (0.186)	0.094 (0.132)	0.080 (0.127)	-0.144 (0.319)	-0.187 (0.119)	0.019 (0.165)	-0.395~ (0.226)	0.102 (0.164)	
Randomization Blocks	X	X	X	X	X	X	X	X	
Constant	0.359** (0.133)	-0.032 (0.096)	-0.057 (0.090)	-1.693*** (0.236)	0.080 (0.085)	-0.085 (0.116)	0.386* (0.161)	-0.078 (0.118)	
Observations	2,054	1,282	1,282	1,282	1,282	1,282	1,278	1,282	
Number of groups	21	21	21	21	21	21	21	21	

Notes: Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10. Differences between the LWL and SO group are not significantly difference from zero.

*Table 11: Effect Size Differences Between Attritors & Non-Attritors in 2017*

Variable	N	Effect size difference
		(present in 2017–absent in 2017)
Age	2054	-0.261***
Female	2054	0.102*
SES Index	2054	0.106*
Repeated P.1 prior to 2013	2054	-0.120*
Met the Basic Literacy Threshold at Baseline	2054	0.109*

*Table 12: Attrition Analysis & Baseline Differences in the Cross-Section of Cohorts 1 & 2*

VARIABLES	Assessed in 2017‡	Supportive Learning Practices Index 2013	Reading Materials Index in 2013	Met the Basic Literacy Threshold in 2013‡		Repeated P.1 before 2013	Sex
				SES			
Student in Cohort 1	0.100	0.151	0.090	0.515	0.027	0.195	0.166
LWL group	(0.270)	(0.141)	(0.105)	(0.367)	(0.138)	(0.186)	(0.178)
Student in Cohort 2	-1.024***	0.042	0.059	1.695***	-0.038	0.019	0.336~
LWL group	(0.263)	(0.144)	(0.107)	(0.364)	(0.141)	(0.192)	(0.186)
Randomization blocks	X	X	X	X	X	X	X
Constant	1.576*** (0.191)	-0.073 (0.098)	-0.064 (0.075)	-1.951*** (0.261)	-0.003 (0.096)	0.097 (0.130)	-0.205 (0.125)
Observations	2,070	1,580	1,581	1,572	1,581	1,576	1,581
Number of groups	14	14	14	14	14	14	14

Notes: Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10. ‡ indicates the difference between the Cohort 1 LWL group and the Cohort 2 LWL group is significant at p<0.001.

*Table 13: Effect Size Differences between Attritors & Non-Attritors in the Cross-Sectional Sample*

Variable	N	Effect size difference
		(present at endline–absent at endline)
Assessed in 2017	2070	2.354*
Met the Basic Literacy Threshold at Baseline	2070	0.011*

Note: Endline data for Cohort 1 were collected in 2015. Endline data for Cohort 2 were collected in 2017.

*Similarity of Impact between the Analytic Sample in 2017 and the Analytic Sample in 2015*

The analysis comparing the two indices of the home literacy ecology shows that both treatments had an impact on an index of supportive learning practices that students reported occurring at home. Students in both treatment groups in 2015 reported that higher percentages of their families were seen reading, read to them, helped them with their schoolwork, and had conversation with them. This was true for both the entire sample from 2015, and the sample of students who also participated in the 2017 assessment. In 2017, however, the differences between all groups were not significant, suggesting that the Control group caught up to the treatment groups, possibly due to the reversal in treatment conditions. See Table 14 & Table 15 below**Error! Reference source not found..**

*Table 14: Cohort 1: Group Differences in the Reading Materials Index in 2015 & 2017*

VARIABLES	Reading Materials Index 2015				Reading Material Index 2017	
	2015 student sample		2017 student sample		(1)	(2)
	(1)	(2)	(3)	(4)		
In LWL group	0.064 (0.096)	0.045 (0.088)	-0.032 (0.087)	-0.049 (0.087)	-0.017 (0.136)	-0.040 (0.136)
In SO group	-0.065 (0.092)	-0.068 (0.085)	-0.100 (0.084)	-0.102 (0.084)	0.032 (0.130)	0.030 (0.131)
Phonological Awareness 2013		0.037*** (0.008)		0.027** (0.009)		0.036*** (0.009)
Randomization Blocks	X	X			X	X
Constant	-0.004 (0.066)	0.004 (0.061)	0.082 (0.061)	0.087 (0.061)	-0.002 (0.092)	0.004 (0.093)
Observations	1,674	1,674	1,180	1,180	1,274	1,274
Number of groups	21	21	21	21	21	21

Notes: Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10

*Table 15: Cohort 1: Group Differences in the Supportive Learning Practices Index in 2015 & 2017*

VARIABLES	Supportive Learning Practices Index 2015				Supportive Learning Practices Index 2017	
	2015 student sample		2017 student sample		(1)	(2)
	(1)	(2)	(3)	(4)		
In LWL group	0.316** (0.116)	0.296** (0.104)	0.336** (0.108)	0.318** (0.100)	0.021 (0.127)	0.010 (0.127)
In SO group	0.289** (0.112)	0.281** (0.100)	0.323** (0.104)	0.319*** (0.096)	0.062 (0.122)	0.061 (0.12)
Phonological Awareness 2013		0.029*** (0.008)		0.023** (0.009)		0.018* (0.009)
Randomization Blocks	X	X	X	X	X	X
Constant	-0.211** (0.080)	-0.201** (0.072)	-0.185* (0.075)	-0.179* (0.070)	-0.028 (0.087)	-0.025 (0.086)
Observations	1,674	1,674	1,180	1,180	1,274	1,274
Number of groups	21	21	21	21	21	21

Notes: Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10

*Regressions Predicting Language and Learning Outcomes in 2017*

*Table 16: Language and Reading Outcomes for Cohort 1 in 2017*

VARIABLES	Kinyarwanda Oral Comprehension 2017		Met the Basic Literacy Threshold 2017		Kinyarwanda Reading Comprehension 2017		Kinyarwanda Fluency 2017	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
In LWL group	0.165 (0.161)	0.108 (0.141)	-0.432 (0.421)	-0.597 (0.401)	0.262* (0.130)	0.205~ (0.117)	0.091 (0.095)	0.051 (0.094)
In SO group	0.022 (0.154)	0.015 (0.135)	-0.391 (0.400)	-0.465 (0.379)	0.151 (0.125)	0.137 (0.112)	-0.022 (0.091)	-0.026 (0.090)
Kinyarwanda Phonological Awareness 2013		0.087*** (0.009)		0.303*** (0.036)		0.074*** (0.009)		0.069*** (0.009)
Randomization Blocks	X	X	X	X	X	X	X	X
Constant	-0.061 (0.109)	-0.048 (0.095)	2.248*** (0.298)	2.553*** (0.292)	-0.150~ (0.088)	-0.152~ (0.079)	-0.025 (0.065)	-0.037 (0.064)
Observations	1,274	1,274	1,273	1,273	1,099	1,099	1,099	1,099
Number of groups	21	21	21	21	21	21	21	21

Notes: Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ~ p<0.10

### Literacy Boost Community Activity Participation in 2016 & 2017

As part of the reading assessment, we asked all children about their participation in Literacy Boost activities. We present some preliminary findings in this section of the Appendix.

#### *Data & Sample*

We asked children whether they knew about Reading Clubs, whether Reading Clubs still met in their village, and whether they had attended a Reading Club in the past week. We also asked children whether they had a Reading Buddy or another child they read with outside of school, and if they could name them. We coded the answers as '0' for a 'No' response, and '1' for a 'Yes' response. We also include one question from 2015 as a point of comparison (indicated by italic text in the table below)

This section compares the percent of the LWL group who responded affirmatively with the percent of a combined Control and SO group. We combine these groups as they both participated in the Community Action activities in 2016 and 2017, while the LWL group had not received active implementation for these activities since the end of 2015.

#### *Analysis*

We report percentages of each group responding yes to each of the participation questions listed above. In order to test whether there are significant differences between the two groups, we use a Chi-squared test with logistic regressions as robustness checks. Both of these methods are appropriate when the dependent variable and predictor variable are binary, as was the case with our dataset.

#### *Findings*

*Table 17: Students' Self-Reported Community Activity Participation*

Activity	Reading Assessment question	A	B	Comparing Groups	
		SO + Control Group % yes (N=1,327)	LWL Group % yes (N=718)	Group Difference (Col. B – Col. A)	p-value
Reading Buddies	1) Do you read with someone outside of school?	44.2%	43.6%	-0.6%	0.805
	2) Child can provide the name of their Reading Buddy	41.3%	39.0%	-2.3%	0.312
Reading Clubs	3) Do you know about Reading Clubs in your village?	45.4%	47.5%	2.1%	0.374
	4) Do Reading Clubs occur regularly in your village?	38.5%	30.5%	-8.0%	0.000
<i>[from 2015] Did you attend a Reading Club in the past week?</i>	5) Did you attend a Reading Club in the past week?	23.7%	18.8%	-4.9%	0.011
	<i>[from 2015] Did you attend a Reading Club in the past week?</i>	6.9%	19.1%	12.2%	0.000

Notes: Col. = Column; SO = School Only; LWL = Life-wide Learning.

We find no significant differences between groups for questions concerning Reading Buddies. For Reading Clubs, we find that more students in the SO and Control group reported that Reading Clubs occur regularly, and that students in the SO and Control group attend them more frequently than students in the LWL group. This is expected, given the recency of implementation of community activities in the SO and Control villages compared with the LWL villages.

The significant difference between groups does not necessarily indicate that community activities failed to be sustained in the LWL villages. Compare percent of children who responded yes in 2017 to whether they attended a reading club last week with the same children in 2015 (shown in italics in the table below). The difference between the LWL group in 2017 (18.8%) and 2015 (19.1%) is insignificantly small, suggesting that reading clubs may have been sustained. However, with less than one-fifth of students reporting that they attended a Reading Club, there still is room for improvement to encourage more students to participate in these learning activities.

## **Part 2. Sustainability of Literacy Boost in Teacher Knowledge and Practices**

### **CHAPTER ABSTRACT**

#### **PURPOSE OF THE CHAPTER**

In this chapter we examine the impact of Literacy Boost Teacher Training two years following the implementation of the original teacher training sessions. Specifically, we examine to what degree the improvements observed in 2015 in three areas—teacher knowledge, self-reported classroom practices, and the classroom print environment—were sustained in 2017.

#### **DATA**

- Teacher Surveys in 2013, 2015, and 2017
- Photographs of Classrooms of Early Primary Students (P.1, P.2, & P.3) in 2015 and 2017

#### **KEY FINDINGS:**

- The impact of Teacher Training on teachers' literacy pedagogical content knowledge persisted. That is, Teacher Training significantly improved teacher knowledge from 2013 to 2015; and there was no significant change between 2015 and 2017.
- The impact of Teacher Training on teachers' classroom practices persisted. That is, Teacher Training significantly improved self-reported practices from 2013 to 2015; and there was no significant change between 2015 and 2017.
- The impact of Teacher Training on classroom print environment did not persist at the same level as was observed in 2015. That is, print material coverage on classroom walls in Teacher Training sectors decreased significantly from 2015 to 2017. However, print material coverage in Teacher Training sectors in 2017 was still significantly more than coverage in control sectors in 2015.

#### **DISCUSSION & IMPLICATIONS**

##### **Literacy Boost's Teacher Training model**

- changed teachers' knowledge about reading pedagogy both immediately following the intervention and 2 years following the end of the intervention,
- changed teachers' self-reported classroom practices both immediately following the intervention and 2 years following the end of the intervention, and
- had a significant impact on the classroom print environment, albeit a smaller one than originally estimated in 2015.

This chapter analyzes the extent to which the positive impact of Save the Children's Literacy Boost Teacher Training on Gicumbi teachers' literacy pedagogical content knowledge and classroom practices persisted until 2017, two years following the end of teacher training activities in 2015. Data presented in this chapter were collected through teacher surveys conducted in 2013, 2015, and 2017 and classroom visits in 2015 and 2017.

We begin by briefly describing the outcome measures, methods, and main findings from Teacher Training impact analysis conducted at endline in 2015. Then, we present descriptive and statistical

analyses of impact sustainability, comparing teacher knowledge, self-reported practices, and classroom print availability in 2015 and 2017.

### **2.1 Summary of Impact Analysis at Endline (2015)**

Using data collected via teacher surveys and observations in 2013 and 2015 and classroom photographs taken in 2015, we conducted analyses on the causal impact of Literacy Boost Teacher Training. During the intervention (during the 2014 and 2015 Rwandan school year), 14 sectors in Gicumbi were randomly assigned to receive teacher training and seven served as the control group. At the end of implementation in 2015, we collected data to compare the outcomes of teachers in sectors assigned to teacher training to the outcomes of teachers in sectors assigned to control.

The outcomes we used in this 2015 analysis included teacher knowledge, beliefs, and classroom practices. We measured knowledge and beliefs through survey by items pertaining to literacy pedagogy. We collected data on classroom practices via self-reported items on the teacher survey, classroom observations in a randomly selected subset of teachers, and photographs of the classroom print environment.

We found positive and statistically significant impact of Literacy Boost Teacher Training on teachers' knowledge, beliefs, and self-reported practices. Compared to teachers in the control sectors, teachers in the training sectors scored statistically significantly higher on knowledge and beliefs that support improved reading pedagogy and student learning. Analysis of the observation data indicated that the trained teachers used more research-based reading activities in the classroom. Though the observation findings may not be statistically reliable due to a small sample size, the direction of the treatment effect is consistent with survey findings. In addition, classrooms in teacher training sectors displayed significantly more print materials compared to classrooms in control sectors. These results led us to conclude that teacher training improved literacy pedagogy in the 14 sectors of Gicumbi assigned to receive teacher training (Sun & Galloway, 2016).

### **2.2 Teacher Training Activities in 2016 & 2017**

After the randomized experiment ("Phase 1" training) finished in December 2015, all control sectors received Literacy Boost teacher training ("Phase 2") which had been implemented in the other sectors. The content and mode of delivery for the Literacy Boost teacher training was slightly different in Phase 2 than it was in Phase 1. Table 18 outlines the differences between the two Phases. Except for new teachers who started teaching in Gicumbi in 2017, all teachers in the original seven sectors that comprised the control had the opportunity to attend teacher training sometime during 2016 and 2017. New teachers who started teaching in Gicumbi after their sector had already received teacher training were not trained directly by Save the Children. But these new teachers worked alongside teachers who did receive the training and may have picked up some of the techniques through Peer Learning Circles<sup>10</sup> or other teacher collaboration activities within schools.

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<sup>10</sup> To support sustainability of Teacher Training impact, Save the Children had some continued contact with trained schools for 6 additional months from January through July, 2016. The contact consisted of training Head Teachers and Model Teachers on Peer Learning Circles method. For more on Peer Learning Circles, see the appendix, which contains a summary of the following report: Falk, D. (2016). Peer Learning Circles: A Sustainable Strategy for Literacy Boost in Rwanda. Kigali: Save the Children International.

*Table 18: Teacher Training Phases*

Phase 1	Phase 2
<ul style="list-style-type: none"> <li>• 10 sessions of Literacy Boost teacher training given in 2014 and repeated in 2015.</li> <li>• 4 additional sessions from Rwanda Children's Book Initiative added in 2015.</li> </ul>	<ul style="list-style-type: none"> <li>• 6 sessions of Literacy Boost teacher training. The 6 sessions were a combination of Literacy Boost and Rwanda Children's Book Initiative to reduce similar content across sessions.</li> </ul>
<ul style="list-style-type: none"> <li>• Delivered by Save the Children staff</li> </ul>	<ul style="list-style-type: none"> <li>• Delivered by Model Teachers (2 per school), first trained by Save the Children staff</li> </ul>
<ul style="list-style-type: none"> <li>• Save the Children conducted trainings with Model Teachers regarding Peer Learning Circles in early 2016</li> </ul>	<ul style="list-style-type: none"> <li>• Save the Children staff conducted trainings with Model Teachers regarding Peer Learning Circles in .2016 and 2017</li> </ul>
<ul style="list-style-type: none"> <li>• In 2017 Save the Children staff conducted observations only to support function of Peer Learning Circles.</li> </ul>	<ul style="list-style-type: none"> <li>• In 2017 Save the Children staff conducted classroom observations to support use of techniques learned from Litearcy Boost teacher training and function of Peer Learning Circles.</li> </ul>

This rest of this chapter examines the extent to which the gains in teacher knowledge and practices persisted after the end of Literacy Boost Teacher Training. We test the sustainability of impact by comparing teacher outcomes measured in 2015 and 2017 via teacher surveys and classroom photos. Our research questions are:

1. To what extent did the impact of Literacy Boost Teacher Training on teachers' literacy pedagogical content knowledge persist?
2. To what extent did the impact of Literacy Boost Teacher Training on teachers' self-reported classroom practices persist?
3. To what extent did the impact of Literacy Boost Teacher Training on classroom print environment persist?

If the reading pedagogy impact of the teacher training activities persisted, then for teachers in the 14 sectors that completed training in 2015 ("Phase 1 Sectors"), there will be no statistical difference between teacher outcomes (knowledge, self-reported practices, and classroom print material coverage) between 2015 and 2017.

### **2.3 Teacher Survey: Data and Methods**

#### 2.3.1 Sample

Unlike in previous administrations of the survey, that sampled teachers from all 21 sectors in Gicumbi, in 2017 we only sampled teachers from 10 sectors. We recruited our sample from only 10 sectors for three reasons:

- 1) The 2017 research plans focused exclusively on sustainability of impact. As such, we were uniquely interested in surveying teachers from the 14 sectors that participated in Teacher Training activities in 2014 and 2015. The results for teachers who were in the initial control condition would have been of lower utility to the sustainability study, so we decided to exclude these sectors from our sample.
- 2) The original research plans required more time and resources than those upon which we could draw at this point in the study.

- 3) A new teacher training effort called *Soma Umenye*<sup>11</sup> was implemented in hundreds of sectors around Rwanda. We excluded four of the 14 sectors in our sample that participated in this training effort, so as to minimize the possibility for bias in our sample due to any new practices learned in this project.

A total of 452 teachers who taught in schools in the 10 target sectors responded to the survey. Table 19 below shows the number of teachers by surveys taken. Of the respondents, 107 had taken the 2015 survey (“Group 1”), 102 had taken the 2013 and 2015 surveys (“Group 2”), 31 had taken the 2013 survey (“Group 3”), and 212 had not taken the survey previously (“Group 4”). Since we are comparing outcomes reported in the 2015 and 2017 surveys, the first two groups of teachers (209 total) who had taken the 2015 survey form our analytic sample.

*Table 19: Group Size Based on Years of Survey Participation*

	N	2013 Survey	2015 Survey	2017 Survey
Group 1	107		x	x
Group 2	102	x	x	x
Group 3	31	x		x
Group 4	212			x
Total	452			

### 2.3.2 Summary Statistics: Teacher Characteristics

Table 20**Error! Reference source not found.** shows the characteristics of all teachers who responded to the 2017 survey. The top panel shows Groups 1 and 2: teachers who took the 2015 and 2017 surveys, and teachers who took all three surveys. These two groups of teachers have pedagogical content knowledge and practice outcomes from 2015, for which we can control in longitudinal analysis. The bottom panel shows teachers who took the survey in 2013 and 2017 and teachers who only took the survey once in 2017. We do not observe 2015 outcomes for these 243 teachers. We use data from these teachers for cross-sectional descriptive analysis only.

As shown in Table 20, teachers who took all three surveys appear different from the other three groups based on observed characteristics based on direct comparison of means. As many as 72% of the teachers who took all three surveys were women, compared to 62%, 61%, and 47% of the other groups. Teachers who took all three surveys were also older (average age = 42 years) and had more years of teaching experience (15.5). Compared to teachers who took the surveys in 2015 and 2017 (but not 2013), teachers who took all three surveys scored 0.36 points higher on knowledge and reported using 0.5 more research-based reading activity daily in 2015. They also outperform their non-2013 counterparts on knowledge and practices in 2017.

In contrast, teachers who only took the 2017 survey were least likely to be women, youngest in age, and had the fewest years of experience (about 11.4 years). These teachers also scored the lowest on knowledge and practices on the 2017 survey, compared to the other three groups.

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<sup>11</sup> For more on Soma Umenya, see [www.chemonics.com/projects/paving-path-literacy-rwanda/](http://www.chemonics.com/projects/paving-path-literacy-rwanda/)

*Table 20: Teacher Characteristics*

Response Year(s):	Group 1 2015 + 2017			Group 2 2013 + 2015 + 2017			Group 3 2013 + 2017			Group 4 2017			
	Avg.	SD	N	Avg.	SD	N	Avg.	SD	N	Avg.	SD	N	
	female	0.62	0.49	107	0.71	0.45	102	0.61	0.50	31	0.47	0.50	212
age	39.70	9.10	107	42.36	7.50	102	40.48	7.95	31	37.6 1	9.76	196	
years of teaching experience	12.90	9.30	107	15.55	8.11	102	15.03	9.96	31	11.3 6	9.80	210	

Between-group differences						
	(1) - (2)	sig	(1) - (4)	sig	(2) - (4)	sig
female	-0.10		0.15	*	0.24	**
age	-2.66	*	2.09		4.75	**
years of teaching experience	-2.65	*	1.54		4.19	**

Notes: \*p<0.05 \*\*p<0.01 \*\*\*p<0.001. Avg. = Average SD = Standard Deviation; N= Number

### 2.3.3 Teacher Survey Instrument in 2017

The 2017 teacher survey instrument was an updated version of the 2015 teacher survey. We did not change the questions regarding early literacy pedagogical content knowledge and classroom practices to ensure comparability of findings between 2015 and 2017; however, we added new questions regarding the sustainability of practices learned during the professional development sessions and teachers' impressions of changes in communities as a result of Literacy Boost activities. In order to minimize the amount of time required to complete the survey, we removed other questions that did not yield useful data, specifically regarding language of instruction and classroom resources. The final 2017 tool consisted of seven sections with 74 questions.

### 2.3.4 Data Collection Procedures

A Save the Children staff member based in Gicumbi contacted the head teachers of schools in selected sectors and informed them of the time and place of the survey, asking them to pass the information on to teachers at their respective schools. All P.1 to P.3 teachers in selected sectors were invited to take the survey. Each sector included in the sample contained two survey administration sites, covering two to three schools each. The survey was conducted on two consecutive Saturdays in May 2017. A team of 14 data collectors was hired to administer the survey, with one assessor assigned to each school. Data collectors administered the survey from 9:00am to 2:00pm. Data collectors ensured that respondents answered the survey independently and without discussing questions with their peers. There was no set time limit to complete the survey, and on average it took one hour for most teachers to complete. Teachers were not paid to take the survey; however, they were reimbursed 4,000 RWF (4.81 USD or 3.65 GBP) for transport to and from the survey administration site and provided a soda refreshment. A Save the Children staff member was present at sites in order to distribute the transport reimbursements.

### ***2.3.5 Reading Pedagogy Outcomes***

In the endline analysis we found that teacher training had similarly large and statistically significant impact on teacher content knowledge and teacher beliefs about literacy. In this analysis we decide to combine the teacher knowledge outcome and the teacher belief outcome constructs because teachers' content and pedagogical knowledge shapes their beliefs about their students and about teaching and learning, making the two constructs hard to distinguish. We refer to the merged construct as *pedagogical content knowledge*. This construct therefore had two types of questions, teacher knowledge and teacher beliefs.

Pedagogical content knowledge is measured by the raw aggregate score on survey questions pertaining to teaching literacy constructs, with a maximum possible of 19 points. For content questions with one correct answer, teachers were awarded one point for answering each question correctly. For questions that asked respondents to "select all that apply", teachers lost a fraction of a point when they included a wrong answer in their selection. The fraction was based on the total number of options in the survey item. For instance, if the item listed four options, the teacher lost 0.25 points for choosing a wrong answer. This was to correct for the probability of guessing the correct answer, which would be 0.25 for a four-option item. If the item had 10 options listed, the teacher lost 0.10 points for each wrong answer chosen.<sup>12</sup>

The two related pedagogical practice outcomes consist of the number of empirically validated strategies for teaching literacy that teachers report using. The first outcome is the number of practices used "every day"; the second is the number of practices used "at least sometimes", which includes those used every day. Teachers could receive a maximum of 37 points for each outcome. These two outcomes were only measured in the 2015 and 2017 surveys.<sup>13</sup>

## **2.4 Teacher Survey: Findings**

*RQ1. To what extent did the impact of Literacy Boost Teacher Training on teachers' literacy pedagogical content knowledge persist?*

The impact of Teacher Training on teachers' literacy pedagogical content knowledge persisted. That is, Teacher Training significantly improved teacher knowledge from 2013 to 2015; and there was no significant change between 2015 and 2017.

*RQ2. To what extent did the impact of Literacy Boost Teacher Training on teachers' self-reported classroom practices persist?*

The impact of Teacher Training on teachers' classroom practices persisted. That is, Teacher Training significantly improved self-reported practices from 2013 to 2015; and there was no significant change between 2015 and 2017.

To test the sustainability of Literacy Boost Teacher Training on teachers' knowledge and self-reported practices, we performed two analyses on teacher survey data. First, we did naïve pair-wise comparisons of the outcomes of teachers in groups (1), (2), and (4). We did not compare group (3) to the others because of its small sample size. Then, we estimated changes in teacher outcomes over time using a teacher fixed effects model (described below).

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<sup>12</sup> See 2.Appendix for figures showing distributions of teachers' knowledge scores in 2015 and 2017.

<sup>13</sup> See 2.Appendix for figures showing the distributions for teachers' self-reported practices in 2015 and 2017.

#### 2.4.1 Naïve Between-Group Comparison

Table 21 Panel A reports the mean and standard deviations for four groups of teachers by the surveys to which they responded. Panel B shows the differences between teacher groups in raw knowledge and practice score and statistical significance.

*Table 21: Teacher Knowledge and Practices in 2015 and 2017*

Teachers who responded in:	Group 1 2015 + 2017			Group 2 2013+2015 + 2017			Group 3 2013 + 2017			Group 4 2017		
	Avg.	SD	N	Avg.	SD	N	Avg.	SD	N	Avg.	SD	N
2015 knowledge	12.71	3.0	107	13.07	2.8	102	.	.	.	.	.	.
2015 activities at least sometimes	31.86	5.3	107	31.77	4.7	102	.	.	.	.	.	.
2015 activities daily	18.95	8.4	107	19.50	8.5	102	.	.	.	.	.	.
2017 knowledge	12.90	2.8	107	13.59	2.4	102	13.05	3.0	31	12.21	3.1	212
2017 activities at least sometimes	32.14	8.1	107	32.55	5.9	102	33.16	8.9	31	30.34	10.0	212
2017 activities used daily	20.34	8.4	107	21.05	8.6	102	19.58	10.3	31	19.58	9.6	212

Panel B: Between-group differences	(1) - (2)		sig		(1) - (4)		sig		(2) - (4)		sig	
	(1)	(2)			(1)	(4)			(2)	(4)		
2015 knowledge	-0.36											
2015 activities at least sometimes	0.10											
2015 activities daily	-0.55											
2017 knowledge	-0.69				0.69				1.38		**	
2017 activities at least sometimes	-0.41				1.80				2.21		*	
2017 activities daily	-0.71				0.76				1.47			

Notes: \*p<0.05 \*\*p<0.01 \*\*\*p<0.001. Avg. = Average SD = Standard Deviation; N= Number

Compared to teachers who took the survey in 2015 and 2017, teachers who took all three surveys were older and had 2.65 more years of experience, both of which are significant at the 0.05 level. These teachers outperformed teachers who only took the 2017 survey by even more on knowledge (1.38 points) and activities used at least sometimes (2.21 activities). Teachers who took 2015 and 2017 scored marginally higher on knowledge than teachers who only took the 2017 survey, by 0.69 points. As supplements to Table 21, Figure 9, Figure 10, and Figure 11 illustrate 2017 knowledge and practices of the above four groups of teachers separately. Score distributions do not appear to be different among the three larger groups.

#### 2.4.2 Teacher Fixed-Effects Model

Then, in order to identify changes in teachers' knowledge or practices between 2015 and 2017, we estimated a within-teacher fixed effects model, clustering standard errors at the sector level:

$$Outcome_{it} = \beta Time_t + \delta_i + \varepsilon_{it}$$

where  $Outcome$  is the knowledge score or practice measure for teacher  $i$  at time  $t$ ; Time is an indicator for each survey administration year (2013, 2015, and 2017);  $\delta_i$  are teacher fixed effects; and  $\varepsilon_{it}$  is the error term.

This model allows us to control for unobserved teacher characteristics that do not change over time, which helps to reduce bias in our estimation. For example, a teacher's family background, which may have substantial influence on her literacy pedagogical knowledge and practices, is unobservable. However, that family background does not change over time. When we control for such constant within-teacher factors, we remove some potential bias.

Since participating in each survey entails traveling to the survey site and a few hours of the teachers' time, we might suspect that teachers who took all three surveys to be somehow different than others. Such potential differences between teacher groups could influence how knowledge and practices evolved between 2015 and 2017. To identify potential heterogeneity in the time effect, we interacted time with participation in all three surveys.

Applying the fixed effects model to the analytic sample of 209 teachers (who took the 2015 and 2017 surveys, regardless of participation in 2013), we obtained the results in Table 22.

Column (1) shows the relationship between the year of the survey and teachers' knowledge scores, estimated using data from all three surveys. Between 2013 and 2015, teachers gained about 1.34 points on knowledge score. Between 2013 and 2017, teachers gained about 1.69 points. Both are statistically significant. We test to see if the change from 2013 to 2015 is statistically different from the change from 2013 and 2017 using an F-test. A p-value of 0.27 tells us that the changes were not different from each other.

Column (2) estimates the relationship between survey year and knowledge scores, using data only from the 2015 and 2017 surveys. The gain from 2015 to 2017 is about 0.36 points and not statistically significant. This is consistent with the F-test result above.

Column (3) shows the main effect of 2017 and the 3-survey interaction effect. The coefficient on the interaction term (0.337) is not statistically significant. This indicates that teachers who took all three surveys did not show a change in knowledge that was different from other teachers.

Column (4) shows the relationship between time and the number of research-based reading activities teachers use on a daily basis. This measure was only available for the 2015 and 2017 surveys. Between the two surveys, teachers reported about 1.5 additional activities used daily, which is marginally significant. As shown in Column (5), teachers who took all three surveys did not differ from other teachers in their relationship between time and daily use of research-based activities.

Columns (6) and (7) show the relationship between time and the number of research-based reading activities teachers use at least sometimes in their classrooms. The gain of 0.5 activities between 2015 and 2017 is not significant, nor is the differential effect on teachers who took all three surveys.

*Table 22: Sustainability of Knowledge and Practice Gains*

Year	Knowledge Score (Raw)			N of activities used daily		N of activities used at least sometimes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2015	1.34*** (0.33)						
2017	1.69*** (0.42)	0.36 (0.34)	0.19 (0.52)	1.46 (0.76)	1.38 (1.06)	0.53 (0.79)	0.28 (0.96)
2017 x took all 3 surveys			0.34 (0.77)		0.17 (1.49)		0.50 (1.36)
Uses 2013 survey data	x						
Uses 2015 survey data	x	x	x	x	x	x	x
Uses 2017 survey data	x	x	x	x	x	x	x
2015 = 2017? (F-stat p-value)	0.27						
Observations	517	418	418	418	418	418	418
R-squared	0.60	0.65	0.65	0.72	0.72	0.66	0.66

Notes: Robust standard errors in parentheses. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05

Overall, our estimates indicate that teacher self-reported knowledge and practices did not change significantly between 2015 and 2017, indicating that the positive impact of Literacy Boost teacher training on reading pedagogy was sustained.

## 2.5 Classroom Print Environment: Data & Methods

In 2017, assessors visited primary schools in all 21 sectors to collect reading assessment data and take photos of classrooms for primary levels 1, 2, and 3. One classroom was randomly selected for each primary level at each school. The assessor used a tablet computer to take one photo of each classroom wall, for a total of four photos per classroom. A total of 1,092 classroom wall photos were taken, representing 92 primary schools in Gicumbi. We use these photos and similar ones taken in 2015 to assess the extent to which the impact of teacher training on classroom print environment persisted. As with the 2015 photos, two members of the Stanford research team coded 2017 classroom photos and assigned photos a categorical score. Photos showing no print on the wall space were assigned a score of “none”. Photos showing a few pieces of print material were coded as “minimal”. Photos showing print material covering approximately “one quarter”, “one half”, “three quarters”, and the “whole” wall were given those ratings, respectively. (For more details on the photo coding process, see 2016 Endline report.) Rater 1 coded all 1092 photos and rater 2 coded 142, or approximately 13.00%. Interrater agreement was 72.54% and kappa was 0.67.

As mentioned earlier in the chapter, for the Literacy Boost randomized experiment, 14 sectors were randomized to receive teacher training in 2014 and 2015 and seven sectors served as the control group. After the experiment, the seven control sectors received teacher training in 2016. In the analysis below, we refer to the 14 sectors that received teacher training in 2014 as part of the randomized experiment as teacher training “Phase 1 sectors” and the 7 sectors that received teacher training in 2015 as “Phase 2 sectors”. Years 2015 and 2017 refer to the year in which classroom wall photos were taken. After

omitting blurry photos, we use a total of 2,164 photos for the analysis. Table 23 shows the photo sample by teacher training wave and year.

*Table 23: Number of Photos by Teacher Training Phase & Year*

	Phase 1 sectors	Phase 2 sectors	Total photos per year
2015	759	330	1089
2017	747	328	1075
Total photos per group	1506	658	2164

## 2.6 Classroom Print Environment: Findings

*RQ3. To what extent did the impact of Literacy Boost Teacher Training on classroom print environment persist?*

The impact of Teacher Training on classroom print environment did not persist at the same level as in 2015. That is, print material coverage on classroom walls in Teacher Training sectors decreased significantly from 2015 to 2017. However, there was still much more print material coverage in Teacher Training sectors in 2017, after some of the initial impact had worn off, compared to control sectors in 2015 (before any Teacher Training). We therefore conclude that the impact of Teacher Training on the classroom print environment persisted

### 2.6.1 Descriptive Findings

We performed two analyses on classroom photo data. First, we did a descriptive analysis by looking at the percentage of photos in each group that scored in each category (“none” to “all”). We visualized these comparisons with bar graphs and also tested statistical difference using chi-square tests with no controls. We compared Phase 1 sectors in 2015 to 2017 to see to what extent the impact of Literacy Boost teacher training persisted two years after the end of training. Then we compared Phase 1 sectors in 2017 to Phase 2 sectors in 2015 to see if the level of print two years after training is different from the level of print prior to training. Second, we ran an ordered probit model with sector fixed effects<sup>14</sup> on Phase 1 sector photos to formally assess to what extent print coverage changed between 2015 and 2017.

We explored the change over time in the amount of classroom print coverage for Phase 1 and Phase 2 sectors separately. Figure 7 below shows the proportion of photos with each categorical rating in 2015 ( $n=759$ ) and 2017 ( $n=747$ ) for Phase 1 sectors. Compared to 2015, the percentage of classroom walls with half, three-quarters coverage, and all coverage each decreased. On the other hand, the percentage of classroom walls with no print, minimal, and quarter coverage increased. Chi-square test results ( $p=0.000$ ) indicate that the difference in coverage between 2015 and 2017 is significant. This first visual analysis indicates that the large impact on the classroom print environment observed in 2015 did not persist.

### 2.6.2 Classroom Print Environment Fixed Effects Model

Our ordered probit estimation yields a log-odds estimate of -0.758, which converts into an odds ratio of 0.469.<sup>15</sup> This odds ratio less than one indicates that print coverage in 2017 was less than 2015. On

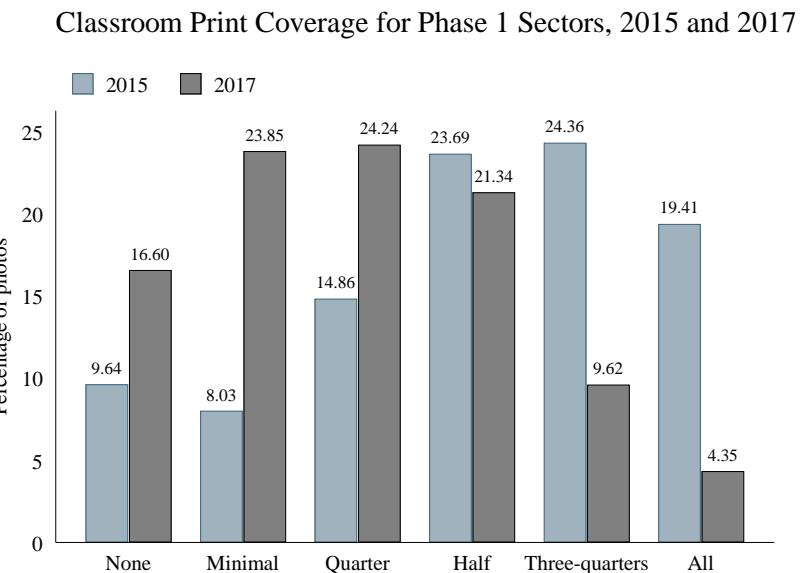
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<sup>14</sup> We chose the ordered probit model because our rating data are categorical and ordinal. Sector fixed effects allow us to control for unobserved sector characteristics that do not change over time.

<sup>15</sup> Approximately 10% of the 2017 photos captured part of a classroom wall. To correct for potential bias, we estimate the model three times: 1) treating partial photos as full walls; 2) assuming each partial photo captures a small portion of the wall, which is the only portion containing print, by recoding partial photos as “minimal”; and 3)

average the amount of classroom print materials visible to early primary level students diminished significantly from 2015 to 2017. This is consistent with our chi-square test results without controls, and supports the non-statistical visual analysis.

*Figure 7: Classroom Print Coverage for Phase 1 Sectors in 2015 & 2017*

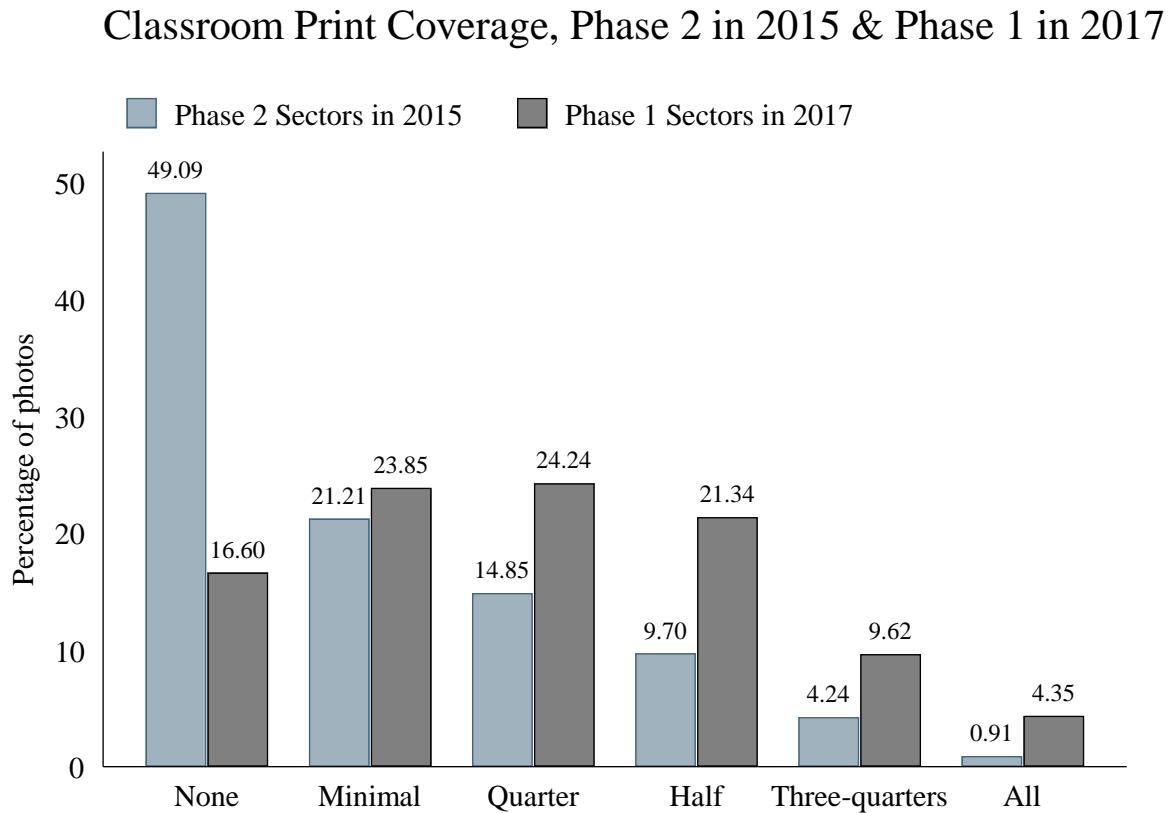


We see that the large impact on the classroom print environment was not sustained to the same level in 2017 as we observed in 2015. But did it completely return to pre-training levels? To answer this, we compare the print coverage of Phase 1 Teacher Training schools assessed in 2017 with Phase 2 Teacher Training schools assessed in 2015, and ask: How does the classroom print environment appear 2 years after the end of training to the classroom print environment of classrooms that had never participated in teacher training? As we show below in Figure 8, the percentage of classroom walls with at least some coverage was higher in trained sectors two years later than sectors with no teacher training. This is despite some decline of the initial teacher training effect. The percentage of classroom walls with no coverage was much lower in teacher trained sectors two years later compared to classrooms with no teacher training at all. Compared to classrooms in sectors in 2015 that had never received teacher training, Phase 1 sectors still had significantly more print coverage in 2017, two years after the training had ended ( $p=0.000$ ).

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excluding all partial photos. All three approaches produced very similar results. We report Approach 1) for simplicity. Results from approaches 2) and 3) are available upon request.

*Figure 8: Classroom Print Coverage, Phase 2 in 2015 & Phase 1 in 2017*



## 2.7 Summary of Findings and Discussion

Using teacher surveys and classroom photos, we assessed the extent to which the impact of Save the Children Teacher Training on teachers' literacy pedagogical content knowledge, self-reported practices, and classroom print environment persisted until 2017. We report three main findings:

1. The impact of teacher training on teacher knowledge and self-reported practices persisted in the two years following the end of teacher training. There is no statistically significant difference in teacher knowledge or self-reported practice, as measured by surveys in 2015 and 2017.
2. Impact sustainability did not differ by teacher participation in previous surveys. The change from 2015 to 2017 in knowledge and practices for teachers who took all three surveys is not different from the change in teachers who only took two surveys.
3. Photo data pooled across primary schools that received Phase 1 teacher training show that the classrooms had significantly less print coverage in 2017 compared to 2015. However, the effects of teacher training on print environment did not wear off completely, as print coverage two years after training is still significantly more than coverage in sectors with no training at all.

These findings suggest that the positive effect of teacher training on teachers' everyday instruction (reflected by pedagogical content knowledge and activities) is likely to persist in the long run to the same degree as creating print environment. Teachers prepare and teach lessons every day, so they have many opportunities to reflect upon the strategies they use and activities they employ to help children

become better readers. It is an indication that the content of the Literacy Boost trainings has been incorporated into teachers' regular teaching practices.

In contrast, the initial large positive effect on classroom print environment had somewhat diminished over time. Compared to immediately after training, there was a significantly smaller amount of print in Phase 1 trained sectors two years later. One possible explanation for this finding is that Literacy Boost Program Officers were no longer regularly visiting and supporting teachers in Phase 1 schools, which would theoretically reduce teacher's motivation to cover their walls in print. Another possible explanation is that new teachers who did not participate in the Phase 1 training may now be working at Phase 1 schools, which would dilute the impact caused by Phase 1 training.

One factor that may explain the diminishing classroom print coverage over time is a lack of additional resources in schools. Depending on the durability of pre-existing classroom print materials, they may need to be replaced quite frequently. We do not have data to indicate how long professionally printed materials or handmade materials last on classroom walls. If we assume limited durability, the materials would need to be replaced frequently. In the context of rural Rwanda, teachers are unlikely to frequently receive supplies of professionally printed materials. Though not formally measured, the Stanford research team noted that the amount of professionally printed materials displayed on classroom walls diminished from 2015 to 2017. In terms of student-generated or handmade print materials, teachers may be constrained by limited paper and writing supplies in schools. Absent external assistance, such as the materials received from Save the Children, teachers may not have access to the resources needed to maintain higher classroom print coverage levels. When print materials continue to be infrequently received or created over weeks and months, teachers may have lowered possibility of displaying of such materials and shift their focus onto other instructional practices.

Another possible barrier to sustaining classroom print coverage is the requirement that walls be blank during student examinations. This means that every year during the examination period, teachers must remove all print materials. According to Save the Children staff in Rwanda, materials often get lost or damaged in the process; in fact, sometimes it is examination staff and not teachers themselves who remove the materials, meaning there is no way to ensure safe storage. We do not have data on whether this happens in all classrooms in all primary schools, but in smaller schools it is likely that all classrooms must be used for examinations. This means teachers may have to start from scratch every year to cover their classroom walls in print.

Despite the reduction in print in Phase 1 schools from 2015 to 2017, the level of print two years after training is still significantly higher than baseline (as represented by data from Phase 2 sectors before training). This suggests some lasting impact on the classroom print environment, but not at the same levels as were found immediately following the intervention. It is impossible to determine at this point whether the amount of print coverage in 2017 will decline further as the years progress, or whether the amount of print observed in 2017 will remain stable.

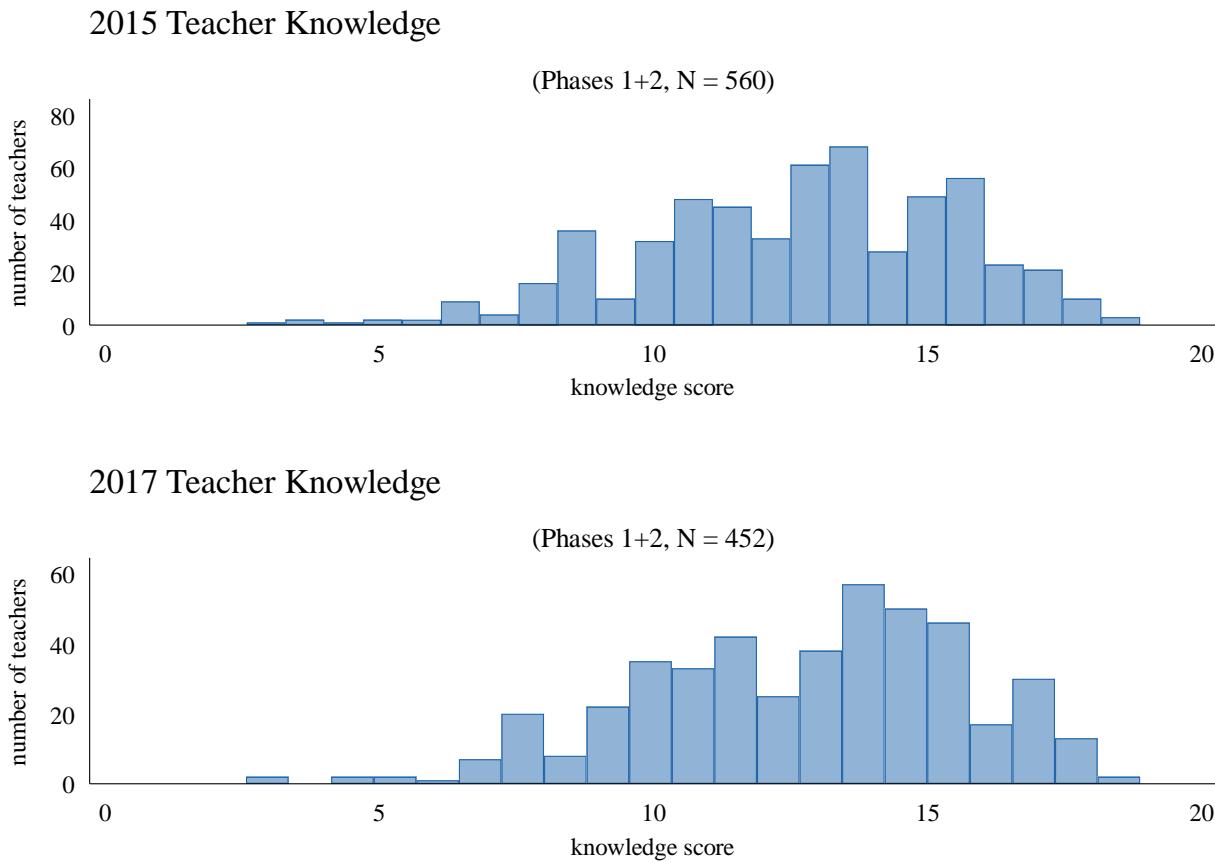
The sustainability of training impact on classroom environment remains susceptible to factors beyond teachers' control. Teachers may not be adding or changing posters and student work on classroom walls on a regular basis, but this may be caused by general lack of materials rather than lack of capacity or effort. Follow-up school visits may help keep teachers motivated to display print in the classroom, and changes in the resource levels (i.e. paper and marker supply) in schools may facilitate this. In order to foster long-sustaining impact on classroom print environment, teacher training programs might consider utilizing regular post-program follow-ups to encourage teachers to continue to display print materials in

their classrooms, and encourage plans to sustain resource levels to facilitate this. Alternatively, local officials may be encouraged to follow up on classroom print environment during their ongoing monitoring and observations in schools.

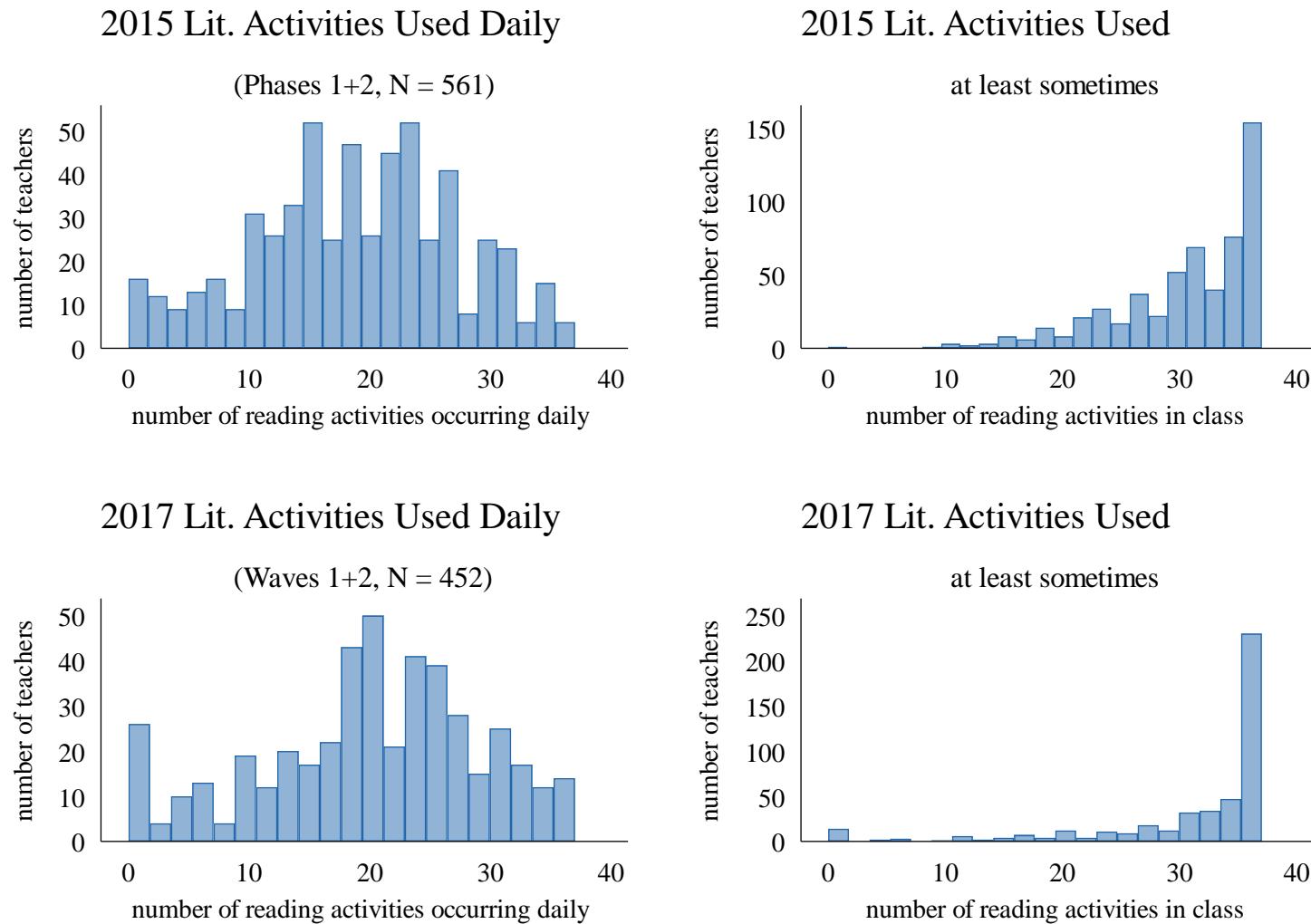
## 2.Appendix

### Graphs Displaying Teacher Outcomes

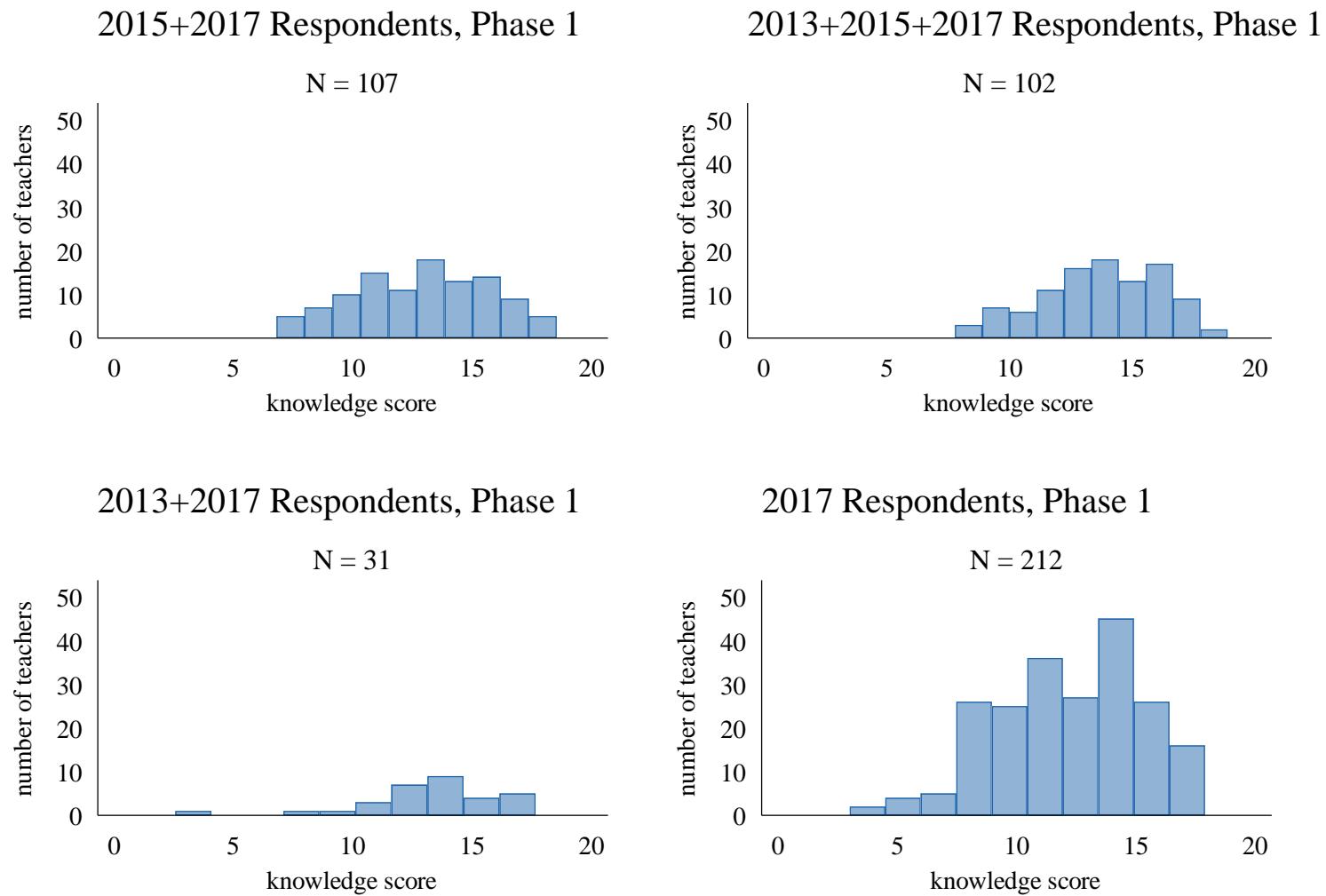
Figure 9: Teacher Knowledge in 2015 & 2017



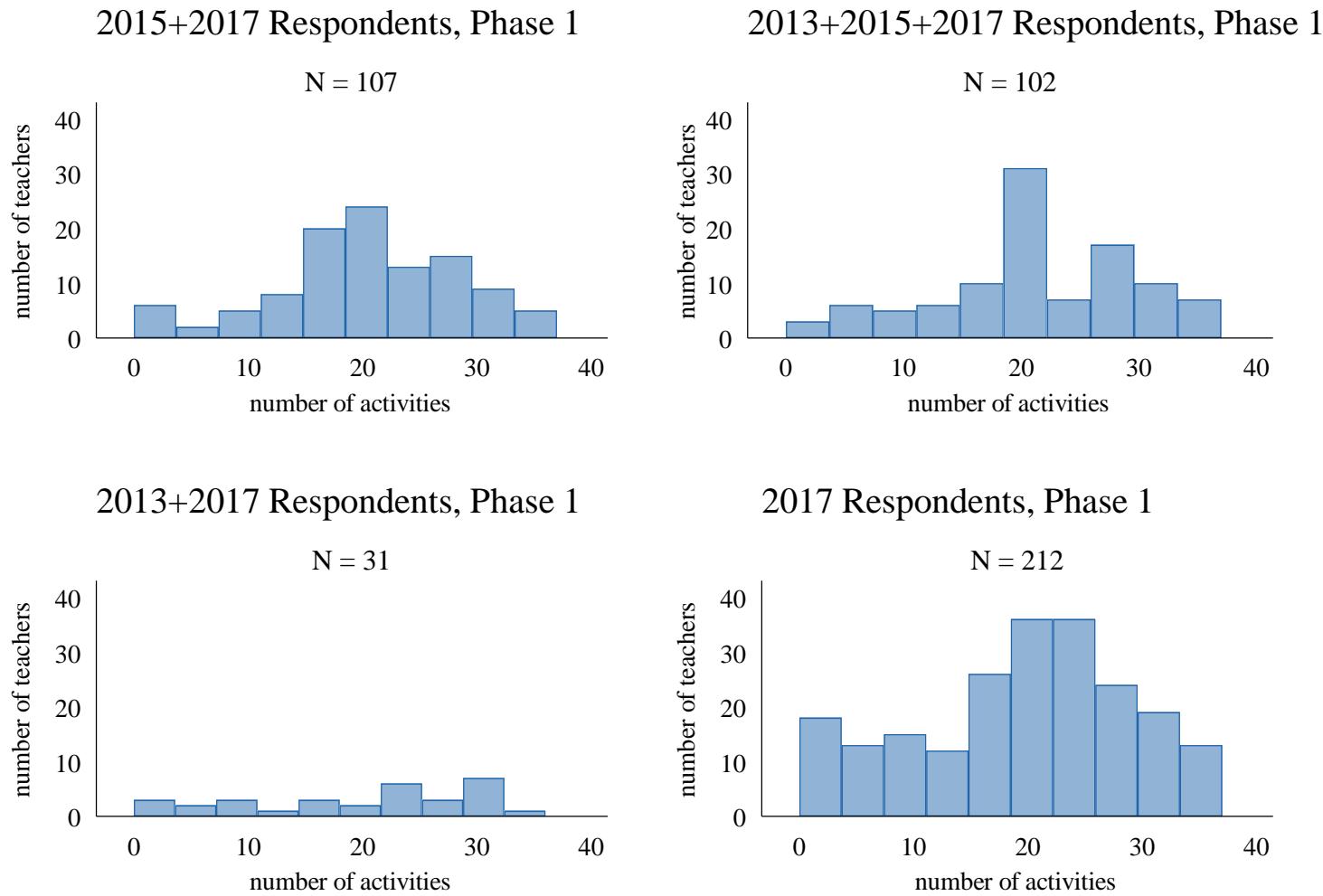
*Figure 10: Teacher Self-Reported Practices in 2015 & 2017*



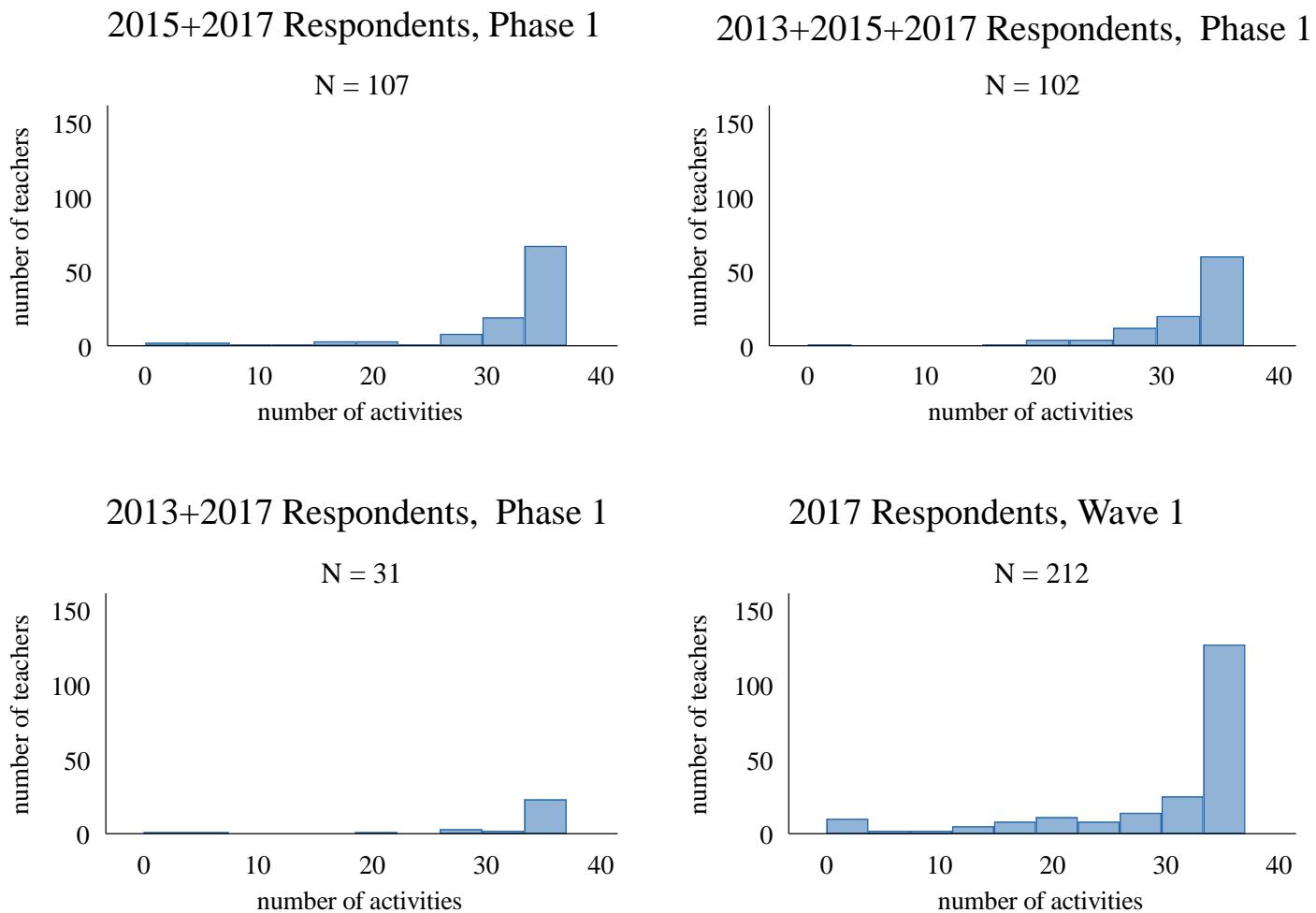
*Figure 11: Knowledge Scores for Phase 1 Trained teachers by Survey Response in 2017*



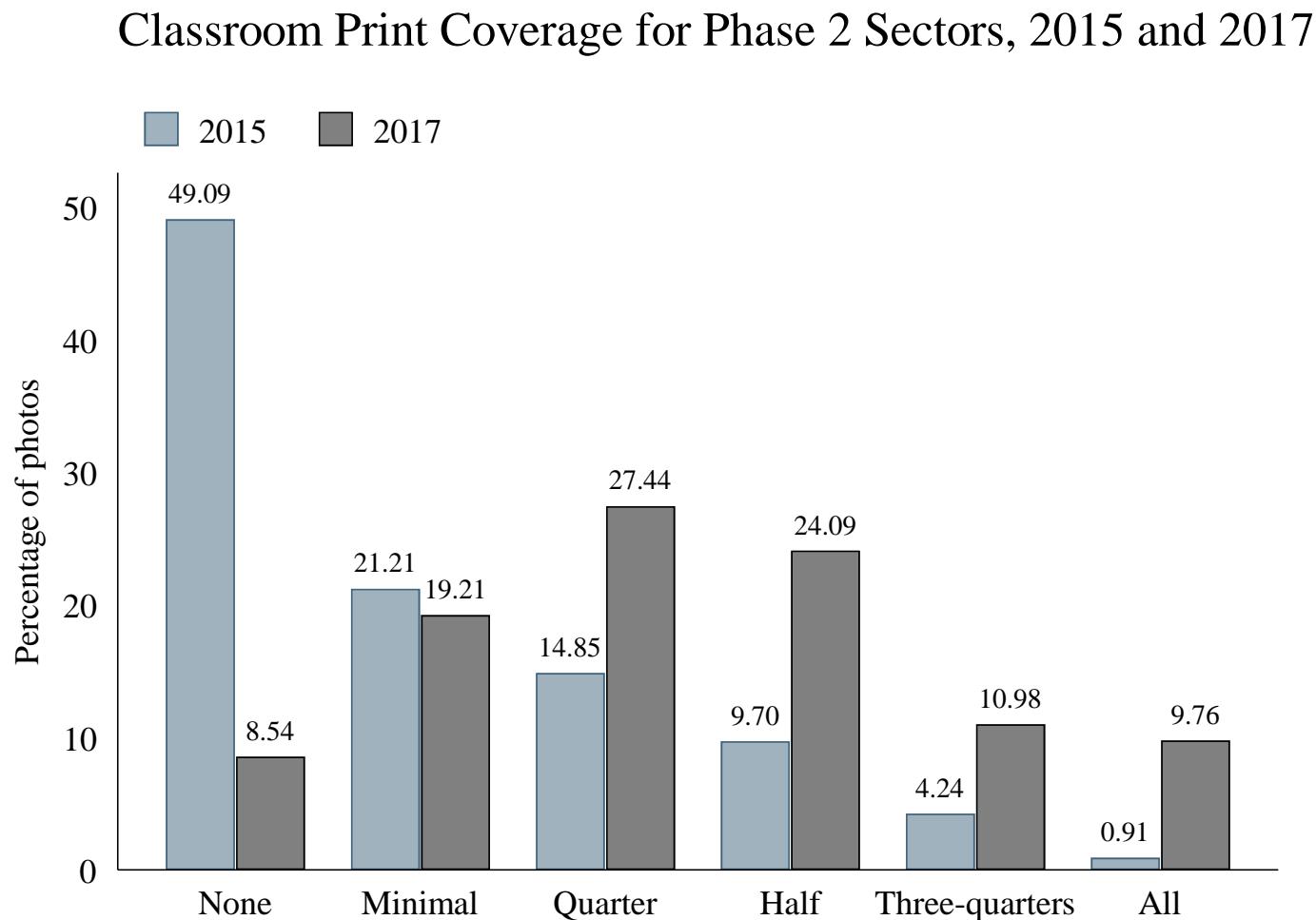
*Figure 12: Self-Reported Reading Activities Used Daily (Phase 1 Trained teachers) in 2017*



*Figure 13: Self-reported Reading Activities Used At Least Sometimes in 2017*



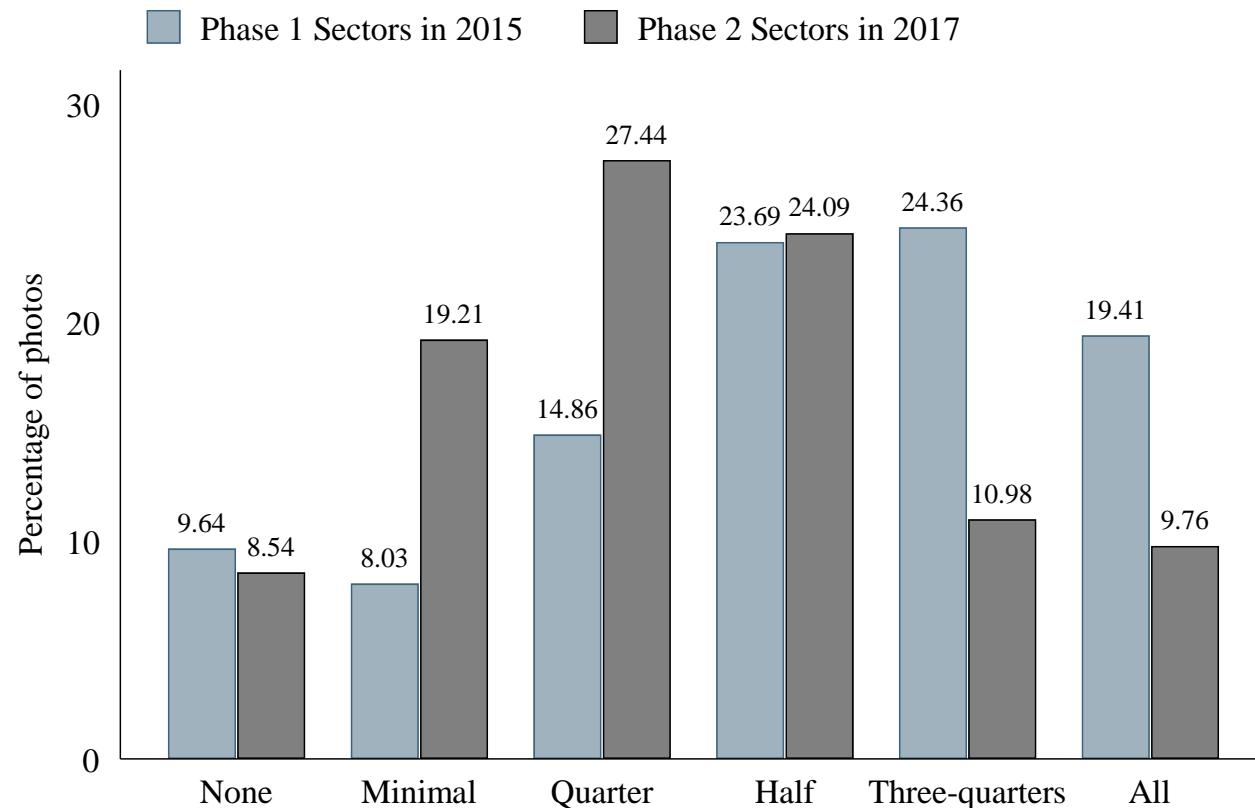
*Figure 14: Classroom Print Coverage for Phase 2 Sectors, 2015 & 2017*



Phase 2 sectors increased the amount of classroom print coverage between 2015 (n=330) and 2017 (n=328). The percentage of classroom walls with quarter coverage or more increased, and the percentage of classroom walls with no or minimal coverage decreased. The difference between 2015 and 2017 for this group is also statistically significant ( $p=0.000$ ).

*Figure 15: Classroom Print Coverage, Phase 1 in 2015 and Phase 2 in 2017*

## Classroom Print Coverage, Phase 1 in 2015 & Phase 2 in 2017



A year after training, a higher percentage of classroom walls in Phase 1 sectors had three-quarters or full coverage than classroom walls in Phase 2 sectors. A lower percentage of classroom walls in Phase 1 sectors had minimal or quarter coverage compared to classroom walls in Phase 2 sectors. The percentage of classroom walls that had no or half coverage were very similar for the two groups. Overall, Phase 1 sectors had significantly higher amounts of print coverage than Phase 2 sectors ( $p=0.000$ ), one year after the end of teacher training.

*Teacher Response Averages on Selected Survey Items*

**Responses to Individual Practice Items (2015 and 2017 Surveys)**

	2015 survey (N=411)			2017 survey (N=452)		
	% do not use	% some- times	% every day	% do not use	% some- times	% every day
<b>Self-Reported Practice</b>						
identify letters, letter names, letter sounds	26.76	30.66	41.85	21.02	32.96	46.02
practice drawing letters in the air	30.17	40.15	29.20	18.36	37.61	43.81
write or copy letters on board in notebooks	16.79	19.71	63.26	15.71	14.38	69.69
blend letters together to form syllables	12.90	19.71	67.15	14.38	21.24	64.38
practice decoding words	18.98	38.20	42.58	19.03	33.63	47.35
show parts of words that make specific sounds or point to words while read	18.98	34.06	46.47	16.59	29.65	53.76
ask students to write words or sentences, encourage use knowledge of letters/sounds	12.90	24.09	62.77	14.82	25.00	59.96
identify or play with words orally that sound similar	26.03	53.77	19.95	22.12	57.08	20.58
separate words into SYLLABLES orally	11.68	32.60	55.23	14.82	28.76	56.19
explicitly teach about syllables	15.82	31.39	52.07	16.81	30.09	52.88
separate words into PHONEMES orally	30.41	37.71	31.63	22.57	41.37	36.06
clap or tap to count PHONEMES in words	14.11	28.71	56.45	16.37	21.68	61.50
clap or tap to count SYLLABLES in words	11.19	26.52	62.04	14.16	22.12	63.50
listen for/ identify a sound within a word said orally	28.22	38.69	32.85	23.67	38.94	36.95
generate words that contain specific sounds	32.36	35.28	31.63	25.00	36.73	38.27
explicitly teach spellings, root words, affixes, parts of speech, intonations, stresses, or implied context of words	37.71	40.63	21.17	31.86	41.15	26.77
teach meaning of words	4.87	20.44	74.70	5.75	16.81	77.43
practice new vocabulary words	8.03	31.14	60.58	9.51	24.78	65.71
have students think of synonyms/antonyms	27.25	39.17	33.58	19.47	41.59	38.72
teach meaning of words related to text	9.00	30.66	60.10	12.39	29.87	57.74
ask students to define vocabulary words	11.44	32.12	56.20	11.28	32.52	56.19
use instructional materials to teach vocabulary	7.54	34.79	57.18	9.07	28.32	62.61
model reading aloud with appropriate speed, inflection, & tone	6.33	12.90	80.29	8.41	15.04	76.33
explicitly point out how to read fluently	8.03	18.49	72.99	9.96	15.04	74.12
when students read aloud, encourage to read fluently	4.87	11.92	82.97	6.42	12.17	80.75
ask students questions related to text before read text	14.60	29.44	55.47	17.48	31.42	50.66
ask students questions DURING/AFTER reading text	6.33	19.71	73.48	11.95	20.35	67.48
ask students to express ideas or opinions about a text	10.46	23.11	65.94	11.50	23.67	64.60
ask students to summarize a text	16.79	42.09	40.63	20.58	43.36	36.06
ask students to link events in a text to their own lives	9.73	30.41	59.37	9.73	24.78	65.49
students practice reading silently	3.89	26.52	69.34	7.08	24.12	68.58
individual students read aloud to me	7.54	37.47	54.74	9.73	34.51	55.53
individual students read aloud to the whole class	4.38	37.71	57.66	6.64	33.63	59.73
individual students read aloud to a small group	12.41	43.07	44.28	13.50	40.49	46.02
individual students read aloud to a partner.	16.79	42.82	40.15	19.25	43.81	36.95
a group of students reads chorally to the class	14.84	42.58	42.34	15.71	40.27	44.03
the whole class reads together chorally	8.76	44.28	46.72	11.50	42.04	46.46

*QUESTION 20. Do you lend reading materials to students to read at school/home?*

(Please select ONE answer)

- Yes
- No
- I don't know

response	Number of teachers responding	Percent of teachers who took survey
no	9	1.99 %
yes	441	97.57%
did not answer	2	0.44%
Total	452	100%

*QUESTION 21. Which reading materials do students borrow?*

- Students do not borrow reading materials from the classroom bookshelves  
OR, please select all that apply.
- Story books
- Information books
- Text books
- Others: \_\_\_\_\_
- I don't know

response	N of teachers who chose response	% of teachers who took survey
Do not borrow	7	1.55%
Story books	340	75.22%
Information books	42	9.29%
Text books	365	80.75%
I don't know	2	0.44%

\* Responses are not mutually exclusive. Percentage does not add to 100.

*QUESTION 22. How often do students borrow reading materials from the classroom bookshelves?*

(Please select ONE answer)

- Students do not borrow reading materials from the classroom bookshelves
- Every day
- 2-4 times a week
- Once a week
- Every 2 weeks
- Every 4 weeks (once per month)
- Less than once per month
- I don't know

response	N of teachers who chose response	Percent of teachers who took survey
students do not borrow	13	2.88%
every day	163	36.06%
2-4 times a week	130	28.76%
once a week	112	24.78%
every 2 weeks	14	3.10%
once a month	8	1.77%
less than once a month	6	1.33%
don't know	1	0.22%
did not answer	5	1.11%
Total	452	100%

*QUESTION 23. Among boys and girls, who borrow the reading materials more often on monthly basis?*

(Please select ONE answer)

- Boys borrow more often than girls
- Girls borrow more often than boys
- They borrow them the same amount
- None of them borrow
- I don't know

response	N of teachers who chose response	Percent of teachers who took survey
boys more than girls	60	13.27%
girls more than boys	230	50.88%
same amount	135	29.87%
none borrow	11	2.43%
did not answer	16	3.54%
Total	452	100%

*QUESTION 24. How often are students able to access books (other than textbooks) independently (by themselves without the help of an adult or teacher)?*

- Never, there are no books (other than textbooks) in my classroom
- There are books in my classroom but students require the help of an adult to access the books  
OR, please select all that apply:
- Student can access books independently during class
- Student can access books independently even when the school is not in session
- Students may take books from the classroom home

Response	2015		2017	
	Teachers	Percent	Teachers	Percent
no books	140	24.96%	49	10.84%
books avail w/adult help	250	44.56%	133	29.42%
during class	76	13.55%	39	8.63%
school not in session	110	19.61%	170	37.61%
take home	393	70.05%	333	73.67%

\* Responses are not mutually exclusive. Percentage does not add to 100.

*QUESTION 28. In your opinion, what does it mean to be a fluent reader? (Select 1 answer).*

- Being able to understand new vocabulary words.
- Understanding that spoken words are made up of individual sounds.
- Being able to read a text out loud with accuracy, appropriate speed, and expression.
- Understanding, interpreting, and using information derived from a text.
- Being able to identify the letters of the alphabet
- Being able to answer questions about the plot of the text.

Response	2013		2015		2017	
	Teachers	Percent	Teachers	Percent	Teachers	Percent
understand new vocab	9	1.99%	6	1.07%	5	1.11%
knowing words are made of sounds	8	1.77%	6	1.07%	3	0.66%
reading out loud	376	83%	463	82.53%	394	87.17%
understand text	12	2.65%	34	6.06%	12	2.65%
id letters	29	6.4%	22	3.92%	13	2.88%
answering ques	11	2.43%	8	1.43%	3	0.66%
did not answer	8	1.77%	22	3.92%	22	4.86%
Total	453	100%	561	100%	452	100%

*QUESTION 47. How confident are you in your ability to teach your students how to read?*

(Please select ONE).

- Not confident - I do not believe I can teach my students how to read
- Slightly confident - I believe I can teach my students how to read but not that well.
- Very confident – I believe I have the ability to teach my students how to read.
- Extremely confident – I strongly believe that I have the ability to teach my students how to read.

Response	2015		2017	
	Teachers	Percent	Teachers	Percent
not confident	3	0.53%	4	0.88%
slightly confident	27	4.81%	33	7.3%
very confident	256	45.63%	238	52.65%
extremely confident	259	46.17%	167	36.95%
did not answer	16	2.85	10	2.21%
Total	561	100%	452	100%

*QUESTION 48. Did your teaching techniques improve as a result of the Literacy Boost training?*

(Please select 1).

- No
- Yes
- Not Sure
- I don't know

NOTE: 2015 wording is different ("have your teaching techniques improved in the past 6 months?")

Response	2015		2017	
	Teachers	Percent	Teachers	Percent
no	19	3.39%	15	3.32%
yes	525	93.58%	425	94.03%
not sure	0	0%	2	0.44%
did not answer	17	3.03%	10	2.22%
Total	561	100%	452	100%

**QUESTION 49.** If yes, which of your teaching techniques improved?

(Please select all that apply.)

- Teaching students to recognize letters
- Teaching students to be fluent readers
- Teaching students understand written texts
- Teaching students to recognize sounds within words
- Making classroom materials
- Using classroom materials
- Classroom management
- Engagement with students in lessons
- Incorporating reading into my lessons
- Other: \_\_\_\_\_

Response	N of teachers	% of teachers who took survey
Teaching letter recognition	339	75.00%
Teaching fluency	374	82.74%
Teaching understanding written texts	308	68.14%
Teaching recognizing sounds within words	325	71.90%
Making classroom materials	336	74.34%
Using classroom materials	288	63.72%
Engagement with students	322	71.24%
Incorporating reading	233	51.55%
Other	18	3.98%

\* Responses are not mutually exclusive. Percentage does not add to 100.

**QUESTION 62.** Save the Children's Literacy Boost has provided support for these three activities: (1) Teacher training, 2014-2015, (2) teacher training refresher 2016, (3) Peer learning circles.

Please select all of the Literacy Boost activities you participated in:

- Literacy Boost Teacher Training 2014-2015
- Literacy Boost Teacher Training refresher 2016
- Peer Learning Circles in my school
- None of these activities – please skip to question 72

Response	Teachers	Percentage
Literacy Boost Teacher Training 2014-2015	407	90.04%
Literacy Boost Teacher Training refresher 2016	241	53.32%
Peer Learning Circles	228	50.44%
None	14	3.1%

\* Responses are not mutually exclusive. Percentage does not add to 100.

**QUESTION 63.** Do you still use some of the new teaching techniques you learned in the Literacy Boost activities? (Please select ONE.)

- No, I use none of the new teaching techniques I learned in the Literacy Boost training
- Yes
- I don't know

Response	Teachers	Percentage
no	10	2.21%
yes	425	94.03%
did not answer	17	3.16%
Total	452	100%

**QUESTION 64.** Why do you continue to use some of the teaching techniques you learned in the Literacy Boost activities?

- I did not continue using some of the teaching techniques  
OR, please select the top 3.
- They improve my students' learning
- My students enjoy the techniques
- The head teacher asks us to use the techniques
- The techniques are more student-centered now
- They are the same as the new Competency Based Curriculum
- The techniques make my job easier
- Save the Children taught us about Peer Learning Circles
- My head teacher provided more teaching aid materials
- My head teacher made time for us teachers to meet in Peer Learning Circles
- Other: \_\_\_\_\_

Response	Teachers	Percentage
Did not continue to use	9	1.99%
Improved student learning	359	79.42%
Students enjoy techniques	273	60.40%
Head teacher asks to use	93	20.58%
Techniques student-centered	142	31.42%
Techniques same as Competency Based Curriculum	136	30.09%
Make job easier	200	44.25%
Save the Children taught about Peer Learning Circles	153	33.85%
Head teacher provided aid materials	97	21.46%
Head teacher made time for Peer Learning Circles	74	16.37%
Other	6	1.33%

\* Responses are not mutually exclusive. Percentage does not add to 100.

*QUESTION 65. If there are some teaching techniques you learned in the Literacy Boost activities that you did not continue using, why don't you continue using some of the teaching techniques?*

(Please select all that apply.)

- No longer have enough materials
- The techniques were not helpful
- My head teacher does not support my using these techniques
- My students do not like the techniques
- I don't remember the techniques
- I no longer teach young children
- Other: \_\_\_\_\_

Response	Teachers	Percent of teachers who took survey
Not enough materials	206	45.58%
Techniques not helpful	9	1.99%
Head teacher not support	20	4.42%
Students not like	7	1.55%
Don't remember techniques	20	4.42%
No longer teaching young children	9	1.99%
Other	35	7.74%

\* Responses are not mutually exclusive. Percentage does not add to 100.

*QUESTION 66. What additional support(s) do you think you need in order to continue using the teaching techniques you learned in the Literacy Boost training?*

- I do not need additional supports  
OR, please select all that apply.
- More training on how to use the techniques
- More support from my head teacher
- More reading materials for students
- More materials to create visual aids
- More time in the schedule to conduct Peer Learning Circles
- More visits from Save the Children
- Other: \_\_\_\_\_

Response	Teachers	Percentage
Do not need additional support	5	1.11%
More training	347	76.77%
Support from head teacher	111	24.56%
More reading materials	271	59.96%
More materials for visual aids	68	15.04%
More time for Peer Learning Circles	174	38.50%
More visits from Save the Children	134	29.65%
Other	10	2.21%

\* Responses are not mutually exclusive. Percentage does not add to 100.

*QUESTION 67. How many times in 2017 have you participated in Peer Learning Circles either as an observer or the teacher being observed? (If you're not sure, please estimate.)*

Write the numbers of times you participated in Peer Learning Circles here: \_\_\_\_\_

Number of times	Teachers	Percent	Cumulative Percentage
0	209	46.24%	46.24%
1	47	10.4%	56.64%
2	74	16.37%	73.01%
3	34	7.52%	80.53%
4	25	5.53%	86.06%
5	10	2.21%	88.27%
6	11	2.43%	90.71%
8	8	1.77%	92.48%
10	4	0.88%	93.36%
11	1	0.22%	93.58%
14	1	0.22%	93.81%
30	1	0.22%	94.03%
32	1	0.22%	94.25%
did not answer	26	5.75%	100%
Total	452	100%	

**QUESTION 68. What challenges, if any, do you face when trying to attend Peer Learning Circles?**

(Please select all that apply.)

- There is no time in my schedule
- Students are left unattended when teachers participate in Peer Learning Circles
- My head teacher does not support Peer Learning Circles
- My colleagues do not like Peer Learning Circles
- I never received training on Peer Learning Circles
- Other: \_\_\_\_\_

Response	Teachers	Percent
No time in schedule	35	7.74%
Students left unattended during Peer Learning Circles	169	37.39%
Head teacher does not support	36	7.96%
Colleagues do not like	30	6.64%
Did not get Peer Learning Circle training	80	17.7%
Other	24	5.31%

\* Responses are not mutually exclusive. Percentage does not add to 100.

**QUESTION 69. Why do you participate in Peer Learning Circles?**

(Select all that apply.)

- They help me improve my teaching techniques
- I like working with other teachers
- I like to practice new teaching techniques
- Head teacher requires that I participate in Peer Learning Circles
- It makes me feel more confident in my teaching practice
- My students' reading has improved
- I use Literacy Boost techniques more effectively
- Other: \_\_\_\_\_

Response	Teachers	Percentage
Help improve teaching	340	75.22%
Like working with other teachers	244	53.98%
Like to practice new techniques	242	53.54%
Head teacher requires Peer Learning Circle participation	97	21.46%
Makes me feel more confident in teaching	272	60.18%
Student reading improved	153	33.85%
Use Literacy Boost techniques more effectively	196	43.36%
Other	10	2.21%

\* Responses are not mutually exclusive. Percentage does not add to 100.

**QUESTION 70. Are Peer Learning Circles a sustainable strategy for helping you continue to implement the teaching techniques you learned from Literacy Boost? (Please select ONE.)**

- No
- Yes
- I don't know

Response	Teachers	Percentage
No	10	2.21%
Yes	384	84.96%
Did not answer	58	12.83%
Total	452	100%

**QUESTION 71. Whose responsibility is it to ensure that teachers participate in Peer Learning Circles?**

(Please select all that apply.)

- Teachers
- Model Teachers of Kinyarwanda
- Model Teachers
- Head teachers
- Sector Educations Officer
- District Education Officer
- Village leader
- Other: \_\_\_\_\_

Response	Teachers	Percentage
Teachers	120	26.55%
Model teachers of Kinyarwanda	219	48.45%
Model teachers	149	32.96%
Head teachers	192	42.48%
Sector Education Officer	58	12.83%
District Education Officer	31	6.86%
Village leader	7	1.55%
Other	9	1.99%

\* Responses are not mutually exclusive. Percentage does not add to 100.

**QUESTION 72. Whose responsibility is it to encourage children to learn how to read?**

(Choose all the people you think have responsibility.)

- Teachers
- Mother
- Father
- Guardian/Caregiver
- Siblings
- Other family members: \_\_\_\_\_
- Cooperative leaders
- Village leaders
- Church leaders
- Local government
- National government

Response	Teachers	Percentage
Teachers	438	96.90%
Mother	397	87.83%
Father	397	87.83%
Guardian/Caregiver	323	71.46%
Siblings	324	71.68%
Other family members	216	47.79%
Cooperative leaders	115	25.44%
Village leaders	216	47.79%
Church leaders	246	54.42%
Local government	252	55.75%
National government	220	48.67%
Other	30	6.64%

\* Responses are not mutually exclusive. Percentage does not add to 100.

Teacher Survey Administered in 2017 (English version, unformatted)

Note: The survey reproduced below is the unformatted English version. For the Kinyarwanda version, or the version properly formatted, please contact the authors.

This questionnaire consists of SEVEN (7) sections:

- Section A: Teacher Information
- Section B: Literacy in the Classroom
- Section C: Literacy Instruction in your classroom
- Section D: Literacy Instruction in Other Classrooms
- Section E: Instructional Practices
- Section F: Teacher Perception of Parent Engagement in Literacy Development
- Section G: Sustainability

**SECTION A: Teacher Information**

1.	Name of school that you teach at						
2.	Today's date						
3.1	Your Kinyarwanda name						
3.2	Your other name						
4.	Your gender (Circle one)	Female			Male		
5.	Class grade(s) you mainly teach (Circle all that apply)	P1	P2	P3	P4	P5	P6
6.	If you teach more than one grade, which grade will you answer questions about in this survey? Please select ONE grade and answer all questions about that grade only.	P1	P2	P3	P4	P5	P6
7.	Which subjects do you teach? Please select all that apply.	<input type="radio"/> Kinyarwanda <input type="radio"/> English <input type="radio"/> French <input type="radio"/> Maths <input type="radio"/> Science & Technology	<input type="radio"/> Social Studies <input type="radio"/> Sports <input type="radio"/> Culture <input type="radio"/> Drama <input type="radio"/> Music				
8.	What year were you born?						
9.	What is your highest level of formal education? Select one.	<input type="radio"/> A0 <input type="radio"/> A1 <input type="radio"/> A2 <input type="radio"/> A3 <input type="radio"/> D4 <input type="radio"/> D6 <input type="radio"/> D7 <input type="radio"/> L1 <input type="radio"/> S6 <input type="radio"/> Other: _____					
10.	In what year did you start teaching? Please write only a 4-digit number (e.g. 2008)						

11.1	In what year did you start teaching at your current school? Please write only a 4-digit number (e.g. 2011)			
11.2	Have you taught at a different school in the past 5 years (2013-present)?	Yes      No		
11.3	If yes, please list all of the schools in the table.	Year	School	Sector
		2013		
		2014		
		2015		
		2016		
11.4	Do you remember taking this survey in 2013?	No	Yes	Not sure
11.5	Do you remember taking this survey in 2015?	No	Yes	Not sure
12.	What is your position at this school? (Place an 'X' next to all that apply)	<input type="checkbox"/> Volunteer Teacher <input type="checkbox"/> Government Teacher <input type="checkbox"/> Assistant Headmaster <input type="checkbox"/> Headmaster <input type="checkbox"/> Temporary Teacher <input type="checkbox"/> Other (Please specify)		

13. Have you received any training on the Competency-Based Curriculum ? (if no, skip to question 17)	No      Yes
14. If yes, specify Competency-Based Curriculum training topics attended:	
15. Have you received Literacy Boost training by Save the Children? (circle one. If no, skip to 17)	No      Yes
16. How many days of Literacy Boost training by Save the Children? (If you don't remember, please give your best estimate)	All Some 1-2
17. If yes, specify training topics attended (circle all that apply):	(a) Introduction (b) Formative Assessment (c) Phonemic Awareness (d) Letter Knowledge (e) Vocabulary (f) Reading Comprehension (g) Reading Fluency (h) Teaching L2 Learners (i) Conclusion (j) Management of storybooks (k) Culture of Reading (l) Print Rich Environment

## SECTION B: Literacy in the Classroom

18. How many of the following types of reading materials do you have in your classroom? (**Please put select only one box per row.**)

Type of Reading Material	None	1-5	6-10	11-20	More than 20
Storybooks/Poetry/Song books					
Newspapers/Magazines					
Students' textbooks (Kinyarwanda, Maths, social studies, science,...)					
Teachers' manuals					
Posters with words on the wall					
Dictionary					
Handmade books					
Religious books					
Comics					
Other: _____					

19. If there are books present in your room, where are they kept?

- There are no books present in my classroom  
**OR, please select all that apply:**
- In student's desks
- Displayed in the room
- Stacked/piled in the room (visible to students)
- In a cupboard that locks or closed in the classroom
- In another room or office at the school
- Other, please specify: \_\_\_\_\_

20. Do you lend reading materials to students to read at school/home? (**Please select ONE answer**)

- Yes
- No
- I don't know

21. Which reading materials do students borrow?

- Students do not borrow reading materials from the classroom bookshelves  
**OR, please select all that apply.**
- Story books
- Information books
- Text books
- Others: \_\_\_\_\_
- I don't know

22. How often do students borrow reading materials from the classroom bookshelves? (**Please select ONE answer**)

- Students do not borrow reading materials from the classroom bookshelves
- Every day
- 2-4 times a week
- Once a week
- Every 2 weeks
- Every 4 weeks (once per month)
- Less than once per month
- I don't know

23. Among boys and girls, who borrow the reading materials more often on monthly basis? (**Please select ONE answer**)

- Boys borrow more often than girls
- Girls borrow more often than boys
- They borrow them the same amount
- None of them borrow
- I don't know

24. How often are students able to access books (other than textbooks) independently (by themselves without the help of an adult or teacher)?

- Never, there are no books (other than textbooks) in my classroom
  - There are books in my classroom but students require the help of an adult to access the books
- OR, please select all that apply:**
- Student can access books independently during class
  - Student can access books independently even when the school is not in session
  - Students may take books from the classroom home

25. If you had unlimited funds, which would be your **TOP THREE (3)** items to buy to help your students with their reading skills? (**Please select only 3 items**)

- Textbooks (e.g.: Kinyarwanda, Social studies, Maths,...)
- Storybooks
- Soccer balls/other play equipment
- Posters with vocabulary words
- Newspapers
- Posters of letters of the alphabet
- Science Equipment
- Magazines
- Religious Books
- Flashcards

26. Some people have said there are 5 key skills that help students become good readers. Of the list below, which do you think are the 5 most important for children to read well? **Please select FIVE (5) of the answers below.**

- Memorizing passages
- Being able to identify letters and the sound they represent
- Identification of the days of the week
- Awareness of how words can be broken down into individual sounds
- Clear Handwriting
- Reading accurately with proper pacing and intonation
- Having a good vocabulary
- Understanding what you read
- Sitting quietly
- Paying good attention
- Good grammar and pronunciation

#### **SECTION C: Literacy Instruction in YOUR classroom**

**We want to know more about the different kinds of reading activities that teachers use in their classrooms in Gicumbi district. Please help us by answering the following questions based on the activities YOU use in YOUR classroom.**

27. A) Place a tick for each activity that occurs in your classroom **AT LEAST SOMETIMES** and a tick for each activity that occurs in your classroom **DAILY WHILE TEACHING KINYARWANDA**. If an activity never occurs in your classroom, please leave it blank.

READING ACTIVITY		ACTIVITY OCCURS AT LEAST SOMETIMES	ACTIVITY OCCURS DAILY
1	My students and/or I identify letters, letter names, and/or letter sounds (e.g. 'T' makes the /t/ sound)		
2	My students and/or I practice drawing letters in the air or with our fingers, etc.		
3	My students write or copy letters on the board in their notebooks		
4	My students and/or I blend letters together to form syllables		
5	My students and/or I practice decoding (sounding out) words		
6	I show students the parts of words that make specific sounds, or point to the words as I read them out loud for students		
7	I ask students to write words or sentences, encouraging students to use their knowledge of letters and sounds.		
8	My students and/or I identify or play with words orally that sound similar in some way (the same beginning, middle or ending sounds)		
9	My students and/or I separate words into SYLLABLES orally		
10	I explicitly teach students about syllables (tell them that we are breaking words into sound segments when I orally separate words into syllables)		
11	My students and/or I separate words into PHONEMES orally		
12	My students and/or I use clapping or tapping to count PHONEMES in words		
13	My students and/or I use clapping or tapping to count SYLLABLES in words		
14	My students and/or I listen for and/or identify a sound within a word (after we hear it) said orally (e.g., listen for the sound /g/ in 'yego')		
15	My students generate words that contain specific sounds		
16	I explicitly teach my students the spellings and/or root words, affixes, parts of speech, intonations and stresses, or implied context of words		
17	I teach my students the meaning of words		
18	I practice new vocabulary words with my students.		
19	I have students think of synonyms/antonyms.		
20	I teach the meanings of words related to a text that my students read.		
21	I ask students to define vocabulary words.		
22	I use instructional materials (i.e. teaching aids) to teach vocabulary.		
23	I model reading out loud with appropriate speed, inflection, and tone		
24	I explicitly point out to students how to read fluently - with appropriate speed and inflection to approximate natural speech		
25	When my students read aloud, I encourage them to read fluently		
26	I ask students questions related to a text BEFORE we read the text		
27	I ask students questions DURING OR AFTER reading a text		

28	I ask students to express ideas or opinions about a text		
29	I ask students to summarize a text (orally, written, or in a drawing)		
30	I ask students to link events in a text to their own lives		
31	My students practice reading silently		
32	Individual students read aloud to me		
33	Individual students read aloud to the whole class		
34	Individual students read aloud to a small group		
35	Individual students read aloud to a partner		
36	A group of students reads chorally to the class		
37	The whole class reads together chorally		

27. B) Which of the 5 reading activities mentioned in the table above occur **MOST FREQUENTLY** in your classroom (please write the numbers (1-37) of **the TOP 5 ACTIVITIES** from question 27. A) (on the lines below) (for example, 4, 16, 27, 34, 35): \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

28. In your opinion, what does it mean to be a fluent reader? (**Please select ONE answer**).

- Being able to understand new vocabulary words.
- Understanding that spoken words are made up of individual sounds.
- Being able to read a text out loud with accuracy, appropriate speed, and expression.
- Understanding, interpreting, and using information derived from a text.
- Being able to identify the letters of the alphabet
- Being able to answer questions about the plot of the text.

29. For this question, please select all that apply. In your opinion, what does it mean to **comprehend** a text? (**Please select ALL that apply**)

- Being able to read it out loud with no mistakes.
- Being able to summarize accurately in your own words.
- Understanding, interpreting, and using information from a text.
- Being able to read a text out loud with accuracy, appropriate speed, and expression.
- Being able to repeat it from memory without looking at it.
- Being able to relate it to a similar text you have read.
- Understanding that spoken words are made up of individual sounds.
- Being able to answer questions about the plot of the text.
- Being able to identify the letters of the alphabet.

30. Some teachers think it is important to teach reading comprehension and others think it is not important. There are many different ways to teach reading comprehension, not all teachers use all ways. If you teach reading comprehension, what are some strategies you use to teach reading comprehension?

- I don't teach reading comprehension.  
**(OR, please select all that apply)**

- Read the passage several times to the students.
- Have students repeat the story as you read it (echo reading)
- Tell students the meaning of the story
- Ask students to make predictions about the text before you read it.
- Ask students to make predictions about the text while you are reading it.
- Ask students to answer questions about what is happening in the text
- Ask students to summarize the text
- Ask students to make visual representations (drawings) of the text
- Ask students to express their opinions about a text.
- Point to letters and ask students to say the name of the letter out loud.

31. How often do you give homework that involves reading or writing? (**Please select ONE answer**)

- Never
- Once per school term
- Once a Month
- 2-3 Times a Month
- Once a Week
- 2-4 Times a Week
- Daily

32. If you read out loud to your students, what do you read and how often do you do it? (**Please select ONE response for each type of text in the table**):

TYPE OF TEXT	HOW OFTEN DO YOU READ EACH TYPE OF TEXT OUT LOUD TO STUDENTS?			
Newspapers/Magazines	NEVER	RARELY (less than once a week)	SOMETIMES (at least once a week)	VERY OFTEN (at least once a day)
Textbooks	NEVER	RARELY (less than once a week)	SOMETIMES (at least once a week)	VERY OFTEN (at least once a day)
Storybooks	NEVER	RARELY (less than once a week)	SOMETIMES (at least once a week)	VERY OFTEN (at least once a day)
Words students write on the board	NEVER	RARELY (less than once a week)	SOMETIMES (at least once a week)	VERY OFTEN (at least once a day)
Words I write on the board	NEVER	RARELY (less than once a week)	SOMETIMES (at least once a week)	VERY OFTEN (at least once a day)
Flashcards / Word Strips	NEVER	RARELY (less than once a week)	SOMETIMES (at least once a week)	VERY OFTEN (at least once a day)
Other (Describe: _____)	NEVER	RARELY (less than once a week)	SOMETIMES (at least once a week)	VERY OFTEN (at least once a day)

33. Different teachers track student's literacy skills and progress in different ways. Which ways do you assess your students' literacy skills / progress?

- I do not track my students' progress
- (OR please select ALL that apply)**
- I give them written exercises
- I give them dictation
- I have them read out loud one by one from the board and/or book
- I have them arrange words in sentences
- I have them fill in words to complete sentences
- I ask individual students questions about a text they have read and check their responses for comprehension
- I ask them to write words or sentences on the board/in their notebook
- Other, specify: \_\_\_\_\_

34. How often do you keep a written record of students' literacy skills/progress? (**Please select ONE**).

- Never
- Once per school term
- Once a Month
- 2-3 Times a Month
- Once a Week
- 2-4 Times a Week
- Daily

35. Informally assessing means a teacher assesses students' literacy skills/progress but does not write down marks. How often do you informally assess students' literacy skills/progress? (**Please select ONE**).

- Never
- Once per school term
- Once a Month
- 2-3 Times a Month
- Once a Week
- 2-4 Times a Week
- Daily

36. How can you tell whether your students have understood a text?

- I do not focus on this in my teaching.

**OR, please select all that apply.**

- I can tell by their facial expressions if they understand.
- My students understand all of the texts we read so I don't need to check for understanding.
- I ask students about specific vocabulary words.
- I ask students to summarize the text.
- I ask students to give the main points from the text.
- I have children write a response to the text.
- I ask students to answer questions about the text.
- I ask students to act out the story

#### **SECTION D: Literacy Instruction in Other Classrooms**

**Teachers use different strategies to teach reading and writing skills to their students. Imagine that you are observing a teacher teach his class during reading period. For the following questions, read the activity the teacher is using and choose which literacy skill he is focusing on with his students.**

37. The teacher writes "Muraho" on the board and shows the students how the syllables "Mu" "ra" "ho" come together to form the word. Which of the following is the teacher teaching? (**Please select ONE**):

- Phonemic Awareness
- Memory Building
- Reading Fluency
- Letter Knowledge / Alphabetic Principle
- Reading Comprehension
- Handwriting
- Vocabulary

38. If a teacher asks her students, "How many syllables are in the word 'muramuke'?" Which of the following student answers would be correct? (**Please select ONE**):

- 2
- 3
- 4

- 5
- 6

39. The teacher has children listen carefully to a word the teacher says out loud, and then asks them to say what the word would sound like without the first letter. For example, the teacher would say "Meza" and the children would say "eza". Which of the following is the teacher teaching? (**Please select ONE**):

- Phonemic Awareness
- Memory Building
- Reading Fluency
- Letter Knowledge / Alphabetic Principle
- Reading Comprehension
- Handwriting
- Vocabulary

40. The teacher tells her students the meaning of words they might not know in a story before they read the story together. As they read the story together, the teacher asks students the meanings of the words she taught them. Which of the following is the teacher teaching? (**Please select ONE**):

- Phonemic Awareness
- Reading Fluency
- Letter Knowledge / Alphabetic Principle
- Reading Comprehension
- Handwriting
- Vocabulary

41. The teacher asks the students, "How many phonemes are in the word "muraho"?" Which of the following student answers would be correct? (**Please select ONE**):

- 2
- 3
- 4
- 5
- 6

42. The teacher asks the students, "How many phonemes are in the word "ishyushye"?" Which of the following student answers would be correct? (**Please select ONE**):

- 5
- 6
- 7
- 8
- 9

43. The teacher asks children to practice reading out loud so that when they read, their reading sounds as smooth as if they were talking naturally. Which of the following is the teacher teaching? (**Please select ONE**):

- Phonemic Awareness
- Memory Building
- Reading Fluency
- Letter Knowledge / Alphabetic Principle
- Reading Comprehension
- Handwriting
- Vocabulary

**44.** The teacher reads a story with children. The teacher pauses half way through and asks the students to make predictions about what will occur next. Which of the following is the teacher teaching? (**Please select ONE**):

- Phonemic Awareness
- Memory Building
- Reading Fluency
- Letter Knowledge / Alphabetic Principle
- Reading Comprehension
- Handwriting
- Vocabulary

#### **SECTION E: Instructional Practices**

**45.** How often do you teach English as a subject in your classroom? (**Please select ONE**).

- Never - I do not teach English as a subject.
- One day per school term.
- One day per month.
- 1-4 days per week.
- Daily - I teach English as a subject every day.

**46.** How comfortable are you with teaching IN English? (**Please select ONE**).

- I never teach in English
- Not comfortable - I speak only a few words or not at all.
- Somewhat comfortable - I know some words and phrases but not enough to teach in it.
- Very comfortable – I can speak and understand the language well enough to use it to explain the concepts I am teaching to my students.
- Extremely comfortable – I speak it fluently and I am confident teaching in it.

**47.** How confident are you in your ability to teach your students how to read? (**Please select ONE**).

- Not confident - I do not believe I can teach my students how to read
- Slightly confident - I believe I can teach my students how to read but not that well.
- Very confident – I believe I have the ability to teach my students how to read.
- Extremely confident – I strongly believe that I have the ability to teach my students how to read.

**48.** Did your teaching techniques improve as a result of the Literacy Boost training? (**Please select ONE**).

- Yes
- No (skip to Section G)
- I don't know

**49.** If yes, which of your teaching techniques improved? (Please select all that apply.)

- Teaching students to recognize letters
- Teaching students to be fluent readers
- Teaching students understand written texts
- Teaching students to recognize sounds within words
- Making classroom materials
- Using classroom materials
- Classroom management
- Engagement with students in lessons
- Incorporating reading into my lessons
- Other: \_\_\_\_\_

50. If yes, on a scale of 1-10 (1 being the least important and 10 being the most important) how important do you think your improved techniques are for the development of your student's reading abilities? (**Please circle ONE number only**)

0	1	2	3	4	5	6	7	8	9	10
<b>Not Important</b>										<b>Extremely Important</b>

51. If yes, how did the improvements in your teaching techniques affect your students? (**Please select ALL that apply**).

- My students read more fluently in class
- My students' vocabularies are better
- My students comprehend texts better
- The quality of my students' homework assignments improved
- My students are more confident when they read out loud
- My students actively participate more in class
- Other: \_\_\_\_\_

#### **SECTION F: Teacher Perception of Parent Engagement in Children's Literacy Development**

52. How many caregivers of your students spoke with you about the reading and writing skills of their child in the past three months? (**Please select ONE**).

- None – **None (0%)** of the caregivers
- A few – **Less than a quarter (1%-24%)** of the caregivers
- Some – **A quarter to a half (25%-50%)** of the caregivers
- Most – **More than half to three quarters (51%-75%)** of the caregivers
- Almost all--All – **More than three quarters to all (76%-100%)** of the caregivers

53. How many caregivers of your students have you ever spoken to about what they do AT HOME to help their child learn to read and write? (**Please select ONE**).

- None – **None (0%)** of the caregivers
- A few – **Less than a quarter (1%-24%)** of the caregivers
- Some – **A quarter to a half (25%-50%)** of the caregivers
- Most – **More than half to three quarters (51%-75%)** of the caregivers
- Almost all--All – **More than three quarters to all (76%-100%)** of the caregivers

54. How many families of your students do you think actively teach their children reading and writing skills AT HOME? (**Please select ONE**).

- None – **None (0%)** of the caregivers
- A few – **Less than a quarter (1%-24%)** of the caregivers
- Some – **A quarter to a half (25%-50%)** of the caregivers
- Most – **More than half to three quarters (51%-75%)** of the caregivers
- Almost all--All – **More than three quarters to all (76%-100%)** of the caregivers

55. Which of these activities do you think **MOST OF** your students' caregivers do to help their child learn to read and write (**Please select ALL that apply**)

- Use alphabet charts
- Use flash cards
- Create learning materials (Specify): \_\_\_\_\_
- Play learning games (Specify): \_\_\_\_\_
- Read to him or her something other than school work or school note books.
- Help the child with his or her homework

- Purchase school materials
- Others (specify) \_\_\_\_\_
- I do not think that MOST of my students' parents do things at home to help them learn to read and write
- I do not know.

56. Are you aware that Literacy Boost has a parent and community component? (**Please select ONE.**)

- Yes
- No
- I don't know

57. What changes, if any, have you noticed after the community reading activities? (**Please select all that apply.**)

- I haven't noticed any changes
- My students read at home more often
- My students do not do their homework
- My students skip school to go to Reading Clubs/Umuahuza
- Parents ask me more about their children's education
- My students are absent from school more often
- My students are more confident
- My students can read better than they used to
- My students come to school more often
- My students complete their homework more often
- Other: \_\_\_\_\_

58. Describe any other impacts of the community activities.

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59. Do you know the teacher School General Assembly Committee representative for your school?  
(**Please select ONE.**)

- Yes, it is me
- Yes, their name is: \_\_\_\_\_
- Yes, but I do not know their name
- No
- I don't know

60. To what extent does a School General Assembly Committee member encourage you to support reading at home and in the village where your school is located?

- Never
- Rarely – Once per year or less
- Sometimes – Between 1-2 times per term
- Often – Between 1-3 times per month
- Very frequently - Once per week or more

61. To what extent does your head teacher encourage you to support reading at home and in the village where your school is located?

- Never
- Rarely – Once per year or less
- Sometimes – Between 1-2 times per term
- Often – Between 1-3 times per month
- Very frequently - Once per week or more

## **SECTION G: Sustainability**

62. Save the Children's Literacy Boost has provided support for these three activities: (1) Teacher training, 2014-2015, (2) teacher training refresher 2016, (3) Peer learning circles. Please select all of the Literacy Boost activities you participated in:

- Literacy Boost Teacher Training 2014-2015
- Literacy Boost Teacher Training refresher 2016
- Peer Learning Circles in my school
- None of these activities – please skip to question 72

63. Do you still use some of the new teaching techniques you learned in the Literacy Boost activities? **(Please select ONE.)**

- Yes
- No, I use none of the new teaching techniques I learned in the Literacy Boost training
- I don't know

64. Why do you continue to use some of the teaching techniques you learned in the Literacy Boost activities?

- I did not continue using some of the teaching techniques

**OR, please select the top 3.**

- They improve my students' learning
- My students enjoy the techniques
- The head teacher asks us to use the techniques
- The techniques are more student-centered now
- They are the same as the new Competency Based Curriculum
- The techniques make my job easier
- Save the Children taught us about Peer Learning Circles
- My head teacher provided more teaching aid materials
- My head teacher made time for us teachers to meet in Peer Learning Circles
- Other: \_\_\_\_\_

65. If there are some teaching techniques you learned in the Literacy Boost activities that you did not continue using, why don't you continue using some of the teaching techniques? **(Please select all that apply.)**

- No longer have enough materials
- The techniques were not helpful
- My head teacher does not support my using these techniques
- My students do not like the techniques
- I don't remember the techniques
- I no longer teach young children
- Other: \_\_\_\_\_

66. What additional support(s) do you think you need in order to continue using the teaching techniques you learned in the Literacy Boost training?

- I do not need additional supports
- OR, please select all that apply.**
- More training on how to use the techniques
  - More support from my head teacher
  - More reading materials for students
  - More materials to create visual aids
  - More time in the schedule to conduct Peer Learning Circles

- More visits from Save the Children
- Other: \_\_\_\_\_

67. How many times in 2017 have you participated in Peer Learning Circles either as an observer or the teacher being observed? (**If you're not sure, please estimate.**)

Write the numbers of times you participated in Peer Learning Circles here: \_\_\_\_\_  
**(Write 0 if you did not participate in any.)**

68.What challenges, if any, do you face when trying to attend Peer Learning Circles? (**Please select all that apply.**)

- There is no time in my schedule
- Students are left unattended when teachers participate in Peer Learning Circles
- My head teacher does not support Peer Learning Circles
- My colleagues do not like Peer Learning Circles
- I never received training on Peer Learning Circles
- Other: \_\_\_\_\_

69. Why do you participate in Peer Learning Circles? (**Please select all that apply.**)

- They help me improve my teaching techniques
- I like working with other teachers
- I like to practice new teaching techniques
- Head teacher requires that I participate in Peer Learning Circles
- It makes me feel more confident in my teaching practice
- My students' reading has improved
- I use Literacy Boost techniques more effectively
- Other: \_\_\_\_\_

70. Are Peer Learning Circles a sustainable strategy for helping you continue to implement the teaching techniques you learned from Literacy Boost? (**Please select ONE.**)

- Yes
- No
- I don't know

71. Whose responsibility is it to ensure that teachers participate in Peer Learning Circles? (**Please select all that apply.**)

- Teachers
- Model Teachers of Kinyarwanda
- Model Teachers
- Head teachers
- Sector Education Officer
- District Education Officer
- Village leader
- Other: \_\_\_\_\_

72. Whose responsibility is it to encourage children to learn how to read? (**Choose all the people you think have responsibility.**)

- Teachers
- Mother
- Father
- Guardian/Caregiver
- Siblings
- Other family members: \_\_\_\_\_
- Cooperative leaders
- Village leaders
- Church leaders
- Local government
- National government
- Other: \_\_\_\_\_

73. Do you have any other suggestions for ways to encourage teachers to continue using Literacy Boost techniques in their classrooms?

74. Do you have any suggestions for ways to encourage literacy activities in the homes and communities of your students?

## Summary of Peer Learning Circles Report

*Peer Learning Circles: A Sustainable Strategy for Literacy Boost in Rwanda*  
Author: Danni Falk

This report examines the potential of Peer Learning Circles to sustain the impact of Literacy Boost on teachers in the 2 treatment groups of the Literacy Boost randomized control trial in Gicumbi, Rwanda.

### **What is a Peer Learning Circle?**

A Peer Learning Circle is a teacher professional development initiative promoting collaboration and shared learning. There are three components to a Peer Learning Circle: 1) Lesson Preparation; 2) Lesson Observation; and 3) Lesson Feedback. During Lesson Preparation, teachers sit together and plan a lesson including pedagogical strategies learned in the Literacy Boost teacher training and teaching aides needed for the lesson. The second component is Lesson Observation where teachers observe one of their colleagues delivering the lesson they co-planned. After the Lesson Observation, teachers share constructive feedback in Lesson Feedback, emphasizing what went well in the lesson before providing advice on where/how to improve.

### **When were Peer Learning Circles introduced?**

By the end of 2015, Literacy Boost teacher training had concluded in 14 sectors in Gicumbi, and the Save the Children International staff shifted their focus accordingly. One Literacy Boost Program Officer remained in charge of the 14 Literacy Boost sectors with a total of 73 schools while his four Literacy Boost Program Officer colleagues redirected their efforts to the seven sectors in Gicumbi that had not received Literacy Boost teacher training. Between the end of Literacy Boost implementation in the 14 Literacy Boost sectors in November 2015 and July 2016, a series of refresher trainings were held focusing on Peer Learning Circles.

### **Research questions and data analysis**

Data collection and analysis revolved around four main research questions:

1. Are gains from Literacy Boost sustained by Peer Learning Circles?
2. Are Peer Learning Circles reliable models to sustain group meetings?
3. What kind of challenges are teachers encountering in continuing to use the targeted strategies of Peer Learning Circles in their schools?
4. What are some of the benefits from direct implementation 2014-2015 that have not been sustained in 2016?
5. If Umuhuza has been active in the sector, has it had an effect on the parents' relationship to the school? If Umuhuza has not been in the sector, what support would the teachers like to see from the parents of the learners?

### **Data sources, sampling procedure and data collection**

The Peer Learning Circle study employed qualitative and quantitative data collection to explore the potential of Peer Learning Circles as a strategy for sustaining the positive effects of Literacy Boost.

**Table: Data Collection Summary**

Data collection timeline	August to September 2016
Sectors	13
Schools	29
Pre-Focus Group Questionnaires	122
Focus Group Discussions	20
Interviews	10
Peer Learning Circle observations	8
Teachers	123

### **Emerging findings/results**

#### *RQ1: Are gains from Literacy Boost sustained by Peer Learning Circles?*

Yes, from the teachers' perspectives gains from Literacy Boost have been sustained by Peer Learning Circles. In 10 out of 14 Focus Group Discussions (70%), teachers organically brought up Peer Learning Circles when asked how they plan to sustain the effects of Literacy Boost. More specifically, teachers felt Peer Learning Circles were a helpful forum for improving and implementing the teaching strategies they learned in the training. Teachers explained that Peer Learning Circles provide space where they could learn from one another. One teacher expounds, “[Peer Learning Circles] makes us share our working experience. We learn from each other as we do not know the same things.” For example, when planning lessons together (in the Lesson Planning component of Peer Learning Circles), teachers can remind one another of different teaching aides to use in the lesson as everyone remembers (and forgets) different strategies from the training. Another teacher echoes this point by sharing how Peer Learning Circles are set up at the school:

*We have set up a plan whereby specific subject teachers will be meeting once a week and plan a lesson together, sharing views and experiences. This will also help us to remind one another of these techniques and strategies. That is what is referred to as [Peer] Learning Circle.”*

Additionally, teachers expressed feeling confident in their lesson plans because they had created them with their peers. One teacher explains, “The advantage of Peer Learning Circles is that the lesson plan we make in group is fair because many people have checked it.”

Further boosting the teachers' confidence was the Lesson Observation component of Peer Learning Circles. Teachers expressed feeling “bold” through having their peers observe them in their classrooms. Additionally, teachers felt classroom observations were beneficial for the Lesson Feedback component as they were able to provide specific advice after observing the lesson. For Director of Studies and head teachers, who may already conduct classroom observations with the teachers in their school, Peer Learning Circles helped teachers feel more comfortable thus gaining more from the feedback. One Director of Studies explained, “When people attend peer learning [circles], they gain new knowledge...it helps us during the inspection. When you are with [teachers] and observing a lesson and comment on it after, they gain something new through the comments.” Teachers also expressed that Peer Learning Circles helped them become more comfortable with receiving feedback. A female teacher remarked that before Peer Learning Circles, receiving feedback had been difficult, but now she looks forward to receiving advice from her colleagues and finds the feedback very helpful.

Speaking about the sustainability of the Literacy Boost training more broadly, a male teacher expressed he felt very confident that he and his peers would continue to practice what they had learned post-Save

the Children International support. He said, “*We rather, have these [strategies] with ourselves; it is in our blood. It is something we do regularly.*”

*RQ2: Are Peer Learning Circles reliable models to sustain group meetings?*

Yes, Peer Learning Circles are reliable models to sustain group meetings. Nearly all of the teachers expressed their belief that Peer Learning Circles have had an impact on their teaching. Despite the many challenges teachers face in organizing/attending Peer Learning Circles (explained in RQ3), they are highly motivated to do so because they feel Peer Learning Circles are very helpful (particularly lesson planning with nearly a quarter of teachers indicating lesson planning as the most or one of the most beneficial components of Peer Learning Circles). With the formal Literacy Boost teacher training concluded in the 14 treatment sectors in Gicumbi, many teachers felt the need to continue their professional development at the school level. One teacher explained:

*We were motivated by the need to increase our professional skills and knowledge through learning from one another and we really benefited from it. We saw how the teacher monitored individual learners' participation in their groups for our future practice in class."*

Another teacher felt that Peer Learning Circles help teachers continue to use the strategies learned in Literacy Boost through creating a culture of learning. He said,

*There [are] very many things Save the Children taught us, so if they can be lost it can be a problem for us. For me I think we can support this culture of Peer Learning Circles...we have to spread this culture [of shared learning] in all schools.*

Peer Learning Circles foster a culture of learning by providing a school-level opportunity for professional development and growth. Teachers noted an average of participating in two Peer Learning Circles this academic year (2016), and most schools try to have one Peer Learning Circle per month. The highest number of Peer Learning Circles a school had was six. Only one school had not yet had a Peer Learning Circle. Therefore, 28 out of the 29 schools had conducted Peer Learning Circles at the time of data collection (August-September 2016).

Many teachers also expressed that Literacy Boost and Peer Learning Circles were closely aligned with the new Competency-Based Curriculum. This affiliation is very promising for the reliability of Peer Learning Circles to sustain group meetings as teachers perceive it to be similar to other initiatives introduced by the national government. One teacher explained, “*This Peer Learning Circle is one of the things that will help us; because it matches with what they call competence-based curriculum; and this is also being implemented. So it will be beneficial for us.*” When asked how Literacy Boost and Peer Learning Circles are similar to the Competency-Based Curriculum, teachers from 4 schools explained both emphasize “continuous professional development” as well as “child-centered pedagogy”.

*RQ2A: How do schools support the functioning of Peer Learning Circles?*

School leadership plays a critical role in supporting the functioning of Peer Learning Circles. Teachers at schools with successful Peer Learning Circle programs (at least two Peer Learning Circles) noted having strong head teachers and Director of Studies who provided time, materials and encouragement to their planning of Peer Learning Circles. The teachers in all of the focus groups (19) expressed they felt supported by their school leadership. Many teachers gave specific examples of how their school leadership supported them.

*RQ2B: What incentives/barriers are in place for/to consistent participation?*

There are no external incentives put in place for consistent participation in Peer Learning Circles. The only incentive is internal motivation. Teachers feel internally motivated to attend Peer Learning Circles because they perceive their participation in Peer Learning Circles has had a positive effect on their teaching. Additionally, teachers felt that the Peer Learning Circles were aligned with their existing responsibilities as educators. One teacher explained, “[Peer] Learning Circles are somehow part of our tasks and responsibilities as teachers. For example, the lesson plan and learning materials for Peer Learning Circles are also used in our classes.” Therefore, the work required to participate Peer Learning Circles was already a part of the teachers’ responsibilities.

In terms of barriers for consistent participation in Peer Learning Circles, teachers mentioned the school timetable, lack of materials and unattended children. These challenges will be explored more in RQ3A.

*RQ2C: How do teachers perceive the importance of Peer Learning Circles?*

Teachers felt Peer Learning Circles were very important for continuing to develop the skills they gained in the Literacy Boost teacher training. As explained in RQ1 and RQ2, teachers felt internally motivated to participate in Peer Learning Circles because they viewed it as an opportunity to learn from one another. Perhaps most significantly (in terms of the sustainability of Literacy Boost), teachers felt Peer Learning Circles provided a place where teachers could remind one another of strategies they learned in the training. One teacher from explained,

*[Peer Learning Circles] gather all the concerned teachers and we help one another remember what we have forgotten and then we prepare the lessons of the learning cycle. As such, we continue to keep what we have learnt in our mind.*

Maintaining the knowledge gained in Literacy Boost was highly important to the teachers as many recognized the positive impact the training had on their experiences in the classroom and their students’ reading achievement. Another teacher from explained:

*As teachers, Literacy Boost has played a great role to us; when you are teaching a child who can read, it makes teaching process easier. A child cannot succeed in a lesson when he/she does not know to read...As we saw that Literacy Boost helps in developing reading culture, it helps us even in other subjects and in the real life enhancing and extending children’s knowledge, and it helps us as teachers to teach children who can grasp the content since they can read.*

School leadership echoed these sentiments of the teachers and felt Peer Learning Circles strengthened the positive effects of Literacy Boost. Furthermore, Peer Learning Circles enhanced individual teaching practice by providing an opportunity for teachers to gain knowledge and skills from one another. One head teacher explained:

*First of all I can see that [teachers] are happy of that because it helps them a lot; because sometimes teachers jump when they are confused or facing a challenge and then postpone the lesson. But now, it is no longer happening because of that learning [circle]. They help and teach each other in their respective teams or they can help those who are weak to prepare and deliver lessons.”*

*RQ3: What kind of challenges are teachers encountering in continuing to use the targeted strategies of Peer Learning Circles in their schools?*

40% of teachers (49) indicated they faced challenges in organizing and attending Peer Learning Circles. Teachers encountered three major challenges in organizing/attending Peer Learning Circles: 1) limited time; 2) lack of materials; and 3) unattended students. Despite these challenges, teachers felt the benefits of participating in Peer Learning Circles outweighed the obstacles.

*RQ3A: Is there flexibility in the school timetable to allow teachers to meet via Peer Learning Circles?*  
No, teachers felt there was no flexibility in the school timetable to meet for Peer Learning Circles. One teacher explained this obstacle succinctly, saying “*There is no time for Peer Learning [Circles] on the timetable.*” Two popular solutions to overcoming this barrier were 1) planning for Peer Learning Circles during break/free time; and 2) the school management organizing specific days in the week/month for Peer Learning Circles (such as Pedagogy Day).

*RQ3B: How does the school management facilitate teachers to have fully functioning Peer Learning Circles?*

The school management facilitates teachers to have fully functioning Peer Learning Circles by providing time, materials and encouragement.

*RQ4: What are some of the benefits from direct implementation 2014-2015 that have not been sustained in 2016?*

Teachers felt most benefits from direct implementation of Literacy Boost in 2014-2015 had been sustained. However, they felt these benefits (or practices) are not functioning at the same level as they were with direct support from Save the Children International or that they were vulnerable to ending. Specific examples are explained in RQ4A and 4B. Nearly all of the teachers requested more books.

*RQ4A: Does the school management facilitate teachers to get materials to create rich literature environments?*

Yes, all teachers (19 Focus Group Discussions) felt supported by their school management in acquiring materials to create literature rich environments. However, nearly all teachers expressed concern at the overall lack of materials and books. They did not blame this paucity on the school management but on the school budget.

*RQ4B: Do children have access to reading materials and borrow storybooks regularly?*

Yes, and teachers commonly expressed how much students love to read. However, many teachers felt there were challenges in the book borrowing system. The three major obstacles included: 1) lack of books in general; 2) lack of books for upper primary students (P4, P5, P6); and 3) students mishandling the books and/or not bringing them back to school.

*R4C: Do teachers get feedback from Directors of Studies on how they are using specific Kinyarwanda techniques they were trained on through the Advancing the Right to Read programme?*

Yes, teachers said they get frequent feedback from the Director of Studies or head teacher on their use of specific Kinyarwanda techniques from the Advancing the Right to Read programme.

*RQ5: If Umuhuza has been active in the sector, has it had an effect on the parents' relationship to the school? If Umuhuza has not been in the sector, what support would the teachers like to see from the parents of the learners?*

In the randomized control trial, seven sectors in Gicumbi received Literacy Boost teacher training and community literacy activities implemented by Umuhuza, while seven sectors only received Literacy Boost teacher training (Friedlander & Goldenberg, 2016). Of the schools visited for Focus Group

Discussions and/or interviews for this study, 12 were in sectors where Umuhuza had worked and seven in sectors without Umuhuza. Regardless of Umuhuza's presence, all teachers expressed the importance of community/parental training on supporting early childhood literacy and a desire to be involved in the community training. None of the teachers working in sectors where Umuhuza was also active had participated in the organization's community training or outreach.

When asked how parents can better support their children in learning to read, the majority of the teachers felt parents should provide more time for their children to read at home. In nearly one third of the Focus Group Discussions (6), teachers spoke of the limited time students had to do their homework. While teachers working in sectors where Umuhuza was active mentioned that Umuhuza had helped parents understand the importance of reading, they still felt that students lacked sufficient time at home to do their homework.

Overall, teachers working in sectors with Umuhuza felt the initiative had a positive impact on their students and their families. However, despite this positive effect, teachers wanted a stronger relationship to the parents, community facilitators and the community training in general.

#### ***Unexpected findings: Reading Buddies***

Reading buddies emerged as a highly successful program as well as a strategy that teachers felt could sustain the benefits of Literacy Boost. In one school, the teachers explained that they first faced challenges with the reading buddy system. Parents were sometimes not happy to have their children working with students if there was a conflict that existed between the two families. Realizing this issue, the school authority asked parents to come to the school to explain the reading buddy system and the importance of reading. Teachers felt this meeting helped quell the issue and even allowed the reading buddy system to ameliorate conflicts between families. They said that when one family saw a child from another family helping their child read (if they are reading buddies), the families became happy and the conflict between them dissipated.

Additionally, while Umuhuza introduced the Reading Buddy system at the community level, nearly all of the teachers in the Focus Group Discussions (15) spoke of their involvement in the initiative. They explained that students select a peer to be their "reading buddy" and then the teachers grant approval of the partnerships. Sometimes the school even places guidance and/or requirements as to how these partnerships take shape. For example, some schools did not allow older male students to work with younger female students, while others were proactive in grouping students who live near one another so it was easier for them to read together after school. Teachers also spoke about their involvement in helping the students pick out books to read with their "reading buddies". While primarily implemented through Umuhuza, it seems that teachers play a critical role in maintaining the success of the Reading Buddy program. Their involvement may be linked to their belief in the potential of the program. Teachers in more than half of the Focus Group Discussions (10) felt that the Reading Buddy program could help sustain the positive impact of Literacy Boost and spoke highly of the initiative.

## **Part 3. Sustainability of Literacy Boost in Homes and Communities**

### **CHAPTER ABSTRACT**

#### **PURPOSE OF THE CHAPTER**

This chapter explores the sustainability of home and community literacy activities introduced in the Literacy Boost program. We evaluate the extent to which activities sustained in 5 villages in Gicumbi. We then seek to understand the mechanisms in place to promote sustainability at the Village, Sector, and District levels. We explore the functionality of these mechanisms. We also explore how other factors such as leadership, ownership, and accountability contribute to sustainability.

#### **DATA ANALYZED**

- 43 Interviews
- 2 Focus Group Discussions
- 3 Meeting Observations

#### **KEY FINDINGS**

- Some villages had sustained some or all of the community literacy activities, while other villages had sustained none of the literacy activities.
- Mechanisms of sustainability were: the use of local resources to make simple reading materials, the creation of Parent and Reading Club Volunteer Savings Groups, the inclusion of literacy-related goals in *imihigo* performance contracts, the recruitment of *urugerero* youth to lead activities, partnerships with pre-existing organizations like the church and a tea cooperative, and finally the creation of clear reporting hierarchies to ensure accountability.
- Partnerships with church denominations were beneficial but also demonstrated some drawbacks.
- The district, sectors, and villages all displayed varying degrees of leadership, ownership, and accountability. The villages where activities sustained had the strongest leaders that demonstrates examples of those characteristics.

#### **DISCUSSION & IMPLICATIONS**

- The function of the mechanisms of sustainability varied in strength, but they are promising ways to encourage a more long-term improvement in reading culture in rural Rwanda.
- Factors of leadership, ownership, accountability, and geography may affect how these mechanisms function to promote sustainability.

Beginning in 2013, the Literacy Boost in Rwanda randomized control trial tested whether a *School-Only* (SO) approach or a *Life-wide Learning* (LWL) approach helped improve students' early literacy development over the course of the two-year implementation period. The impact evaluation found that both treatments positively impacted students' learning, but that the LWL approach, which supported children's learning both at school and in children's homes and communities had the greater impact (Friedlander, Zhou, Arshan, & Goldenberg, 2016). In addition to improvements in children's learning, the homes of children in villages assigned to the LWL treatment showed improvements in the home literacy ecology (Friedlander, Zhou, & Goldenberg, 2016). Teachers who were assigned to participate in the

school-based activities also demonstrated significant improvements in their knowledge and practices regarding literacy instruction when compared to a control group (Sun & Galloway, 2016).

The impact evaluation however, could not shed light on one of the broader goals of the intervention: improving the overall culture of reading. Indeed, while it is possible to measure certain indicators of a reading culture in the short term, whether or not a reading culture has been established is a question to ask and answer several years in the future. This chapter lays the groundwork for that future assessment of the reading culture.

In this chapter, we map out the mechanisms and factors related to sustaining the project, as well as the positive impact it engendered in the lives of participants and the reading culture overall. We use qualitative data from interviews, focus groups, and observations to explore how project implementers have laid the groundwork for sustained change. We provide examples from our data how these mechanisms and factors function, both in positive and negative ways. Our findings provide insight into adaptations and innovations that may spur sustainable positive change in the reading culture in rural Rwanda.

### **3.1 Community Activities Description & Implementation from 2014 to 2015**

In the implementation of Literacy Boost in Rwanda, four key activities were put in place across all randomly assigned treatment villages. Table 24 provides a brief overview of those activities. For Table 24: Home & Community Literacy Activities and Inputsfull details on these activities and their implementation in 2014 and 2015, refer to the Impact Evaluation (Friedlander & Goldberg, 2016).

*Table 24: Home & Community Literacy Activities and Inputs*

Community Literacy Activity	Description	Intended Duration
Reading Awareness Workshops	10 village-based workshops led by Umuhuza. Topics include: child brain development, children's language and literacy development, reading to children, and creating reading materials at home.	1 workshop (~90 minutes each) per week for 10 weeks
Reading Clubs	Weekly village-based meetings for children led by Reading Club Volunteers. Children play reading games, and practice literacy skills using materials in the Book Banks.	Indefinite
Reading Buddies	Reading Club Volunteers and/or primary teachers encourage children to borrow books and read with a buddy outside school.	Indefinite
Book Bank	A large box of Kinyarwanda language books managed by a person chosen within villages. Books are used during Reading Clubs and children may borrow them.	Provided one time only, indefinite usage

*Image 1: A Village Reading Club in Action*



Photo credit: C. Galloway

After the end of the randomized control trial of Literacy Boost, Umuhuza, began implementing community activities across the villages that had served as the control group during the randomized control trial. Learning from its experience in 2014 and 2015, Umuhuza made certain adaptions to the community activities with the goal of helping them sustain themselves following the end of direct implementation.

*Image 2: A Village Reading Club in Action (2)*



Photo credit: C. Galloway

### **3.2 Research Questions**

To explore the mechanisms and factors that may help sustain community literacy activities, we focus our inquiry on the following three research questions

- RQ 1: Which home and community literacy activities did community members sustain after the end of direct implementation?
- RQ 2: What mechanisms did the local implementation staff put in place in the project district since 2015 and how did they contribute to sustainability?
- RQ 3: What factors or themes affect the likelihood of achieving sustainable change?

### **3.3 Data & Methods**

#### 3.3.1 Data

Methodologically, we approached data collection using a qualitative case study design (Merriam & Tisdell, 2015) with the Literacy Boost program as our 'case'. We individually interviewed and led focus group discussions with a wide range of participants and observed several meetings concerning Literacy Boost activities.

We developed a general semi-structured interview protocol based on key themes of sustainability identified in the literature as well as previous research findings regarding participant experiences throughout the project. Additional individualized questions were developed for different categories of participants. Our questions sought to determine participants' knowledge of community reading activities, opinions about these activities, and what mechanisms or factors might play important roles in sustaining the community activities.

### 3.3.2 District Level Sampling

In order to better understand mechanisms of sustainability at different levels of government and of participant experience, we first interviewed Umuhuza staff and partner staff. We also requested to meet with relevant district and sector level officials.<sup>16</sup>

### 3.3.3 Village Sampling

To understand the local events that might influence sustainability, we drew our sample from participants living in one of 5 villages. To identify four of these villages, we asked Umuhuza to provide a list of 9 villages that they thought best represented a range of successful implementation and potential sustainability. We did not define ‘high’ and ‘low’ sustainability for Umuhuza, allowing them to decide for themselves. From the provided list, we sampled two high- and two low-sustaining villages. Three of the villages had participated in community activities during 2016 and 2017 (and therefore had implementation geared towards sustainability), and one had participated during the first phase of implementation in 2014 and 2015.

During the early stages of data collection, we sampled a fifth village after learning from Umuhuza that a tea cooperative was a partner for local implementation (described in detail below). We interviewed participants in this village in order to better triangulate our data and findings, and understand the interaction between the village and the tea cooperative.

### 3.3.4 Participants & Observations

The iterative process for sample selection followed a theoretical sampling method (Merriam & Tisdell, 2015). We analyzed data as we collected them and used preliminary findings to determine who next to interview, or which meetings might be relevant to our research. We began by interviewing Umuhuza staff, and then sought out interviews with Sector and District officials, two administrative levels of the Rwandan government (for more on these levels, refer to the Impact Evaluation). In the selected villages, we sampled a range of participants, including children, parents, Reading Club leaders, village leaders, and others. Table 25 explains the full sample participants we interviewed and how we selected them, Table 26 explains the focus groups and selection procedures, and Table 27 explains the meetings we observed.

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<sup>16</sup> For more information on the administrative levels in Rwanda and in the project district, refer to the appendix to this chapter.

*Table 25: Interviews & Sampling Procedures*

<b>Interview Participants</b>	<b>N</b>	<b>Description</b>	<b>Admin Level</b>	<b>Sampling Rationale (Sector &amp; District level) / Sampling Procedure (Village level)</b>
Umuhuza Staff	4	Staff at various levels of the organization who oversaw implementing all home and community literacy activities.	District	Selected due to their in-depth knowledge of the program's implementation in Gicumbi. They also served as facilitators for other interviews and meeting observations.
Local education officials	2	Officials in charge of primary schools at the District level.	District	Selected because there were only 2 in that position; selected based on their involvement in Literacy Boost activities.
Sector Education Officers	2	Officials in charge of education at the Sector level. They report to officials at the District level.	Sector	Selected because we were already conducting interviews in these sectors and it would facilitate possible data triangulation and vertical analysis.
Village Leaders	5	Focal point for village activities; first contact in every village for Stanford research team.	Village	Selected because they were the only one in each village.
Parents	10	Caregivers of children in P4 and below who had taken part in home and community literacy activities.	Village	Asked the Village Leader for names of 3 parents who were active in Reading Awareness Workshops and 3 who were not. We then randomly selected 1 from each group.
Reading Club Volunteers	10	Villagers selected from among their communities to lead Reading Clubs.	Village	Asked the Village Leader to identify the Reading Club Volunteers in his/her village, of which there were usually two.
Church Leaders	4	Leaders of churches that were focal partners for Umuhuza's implantation strategy in 2016-2017.	Village	Asked the Village Leader to refer us to the Church Leader responsible for facilitating Reading Awareness Workshops and/or Reading Clubs in the village, when relevant.
Urugerero youth	4	Youth service volunteers that worked with Umuhuza in 2016 & 2017 to conduct RAWs and, in some cases, set up of Reading Clubs.	Village	Asked the Village Leader to refer us to the <i>urugerero</i> youth in charge of leading Reading Awareness Workshops in the village, when relevant.
Children	2	Children who attended a Reading Club in the first village.	Village	Randomly selected from Reading Club attendees.

*Table 26: Focus Groups & Sampling Procedures*

<b>Group</b>	<b>N of participants</b>	<b>Description</b>	<b>Admin Level</b>	<b>Sampling Procedure and/or Sampling Rationale</b>
Sector-level Reading Club Volunteer Savings Group	6	A group of all Reading Club Volunteers in a sector. Groups were formed and supported by Umuhuza. See findings for RQ2 for more details.	Sector	Randomly selected from a list of the 14 sectors for which we had contact of the leader. Following the selection of the sector, which contained three cells, from which we selected one village each. Each village had two Reading Club Volunteers, so the total number of participants in the focus group was six
Leaders of the tea cooperative	3	The tea cooperative is an organization that manages farmers who grow tea in some parts of Gicumbi.	Sector	Selected due to their involvement in Literacy Boost activities.

*Table 27: Observations & Sampling Procedures*

<b>Observation</b>	<b>N of meetings</b>	<b>Description</b>	<b>Admin Level</b>	<b>Sampling Procedure and/or Sampling Rationale</b>
District Sustainability Meeting	1	Consultative meeting between the local NGO partner, Umuhuza, and various district partners, including government officials from the district and sector levels, head teachers, and representatives of implementation partners from churches and the tea cooperative.	District	Only 1 took place during the period of data collection. Umuhuza invited us to attend.
Sector Meetings	2	A sector level meeting that was called by the Sector Education Officer with encouragement from the district-level education official to discuss the sustainability of Literacy Boost community-based activities.	Sector	One Sector was selected based on referral from Umuhuza, and the other was selected based on referral from the district-level education official.

### ***3.3.5 Research Assistants***

To conduct the qualitative case study, we recruited two Rwandan research assistants, one male and one female, to conduct data collection activities in Gicumbi. Both research assistants held bachelor's degrees in education. We trained them in interview techniques and best practices for conducting interviews in rural areas, how to follow the semi-structured interview protocol to gain information on our themes of interest, how to probe for more in-depth responses, and how to avoid leading questions. We also trained them on the process of listening to interview recordings and writing out responses in to English in preparation for data analysis. Throughout data collection, the research assistants conducted all interviews in Kinyarwanda, stopping occasionally to confer with an accompanying Stanford research team member. Following data analysis and the drafting of this chapter, the two research assistants provided in-depth feedback on our findings.

### ***3.3.6 Timeline and Procedures***

We collected data for the qualitative case study over a period of four months from July-October 2017. We sought permission from local government officials and informed them of our plans to conduct interviews at this time. After the research team obtained informed consent, interviews were audiotaped and later translated into written English.

### ***3.3.7 Analysis***

We analyzed the data iteratively as we collected them, following up on information we learned in interviews with Umuhuza staff and during meeting observations. We then summarized and compared data from different participants within each village to understand any mechanisms and factors of sustainability at the village level. Once we had finished data collection, we coded the dataset using an open coding process on Nvivo qualitative research software. We began with codes related to the dimensions of sustainability identified and synthesized from existing literature,<sup>17</sup> and added other themes to the codebook as they emerged during data collection and analysis.

## **3.4 Findings on RQ1. Which Literacy Boost Community Literacy Activities Were Sustained?**

Across the 5 villages we visited, we found a considerable range in the degree to which specific activities were sustained. Some villages had maintained all of the community activities, while others had maintained some or none of the activities. This first finding indicates that partners at Umuhuza provided us with a reliable list of villages from which we could capture a range of experiences around sustainability. Table 28 shows which activities were continuing and which activities had stopped in each village in our sample.

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<sup>17</sup> See the Appendix for a description of these dimensions.

*Table 28: Sustained Activities across the Five Sampled Villages*

Activity	Village 1	Village 2	Village 3	Village 4	Village 5
<i>Implementation</i>					
Years	2014-2015	2016-2017	2016-2017	2016-2017	2016-2017
Reading Clubs	yes	yes	yes	partial	no
Reading Awareness Workshops	yes	yes	yes	no	partial
Reading Buddies	yes	partial	unknown	no	no
Book Bank in use	yes	unknown	unknown	partial	no

*Notes.* The rankings (yes, no, partial, unknown) are based on reports from participants in villages. Yes = still functioning in a similar manner to when it was first implemented; no = not occurring at all; unknown = no evidence on whether the activity was continuing; partial = participants' accounts within the village differed.

### **3.5 Findings on RQ2. Mechanisms to Promote Sustainability**

After two years of experience implementing Literacy Boost, Umuhuza adapted or altered certain features of the program implementation to maximize efficiency and sustainability.

To do this, Umuhuza used structures, practices, and institutions that already existed in the villages, cells, sectors, and the district to overcome barriers to creating sustainable change. These barriers included financial incentives, access to resources, and institutional permanence. They put in place many district-level down to village-level mechanisms to encourage the sustaining of activities, with the intent to use locally familiar activities and concepts that would support or continue to promote literacy. In this section, we describe each mechanism and explore its advantages and disadvantages for sustainability.

#### **3.5.1 Homemade Reading Materials**

An integral part of the Literacy Boost program is the use of locally-available resources to create reading materials. In Gicumbi, the last session of the Reading Awareness Workshops covered ways that parents could make their own reading materials using resources like banana leaves, charcoal, rice sacks, and discarded cartons made from cardboard. Image 3 **Error! Reference source not found.** shows an example of the materials parents created during Reading Awareness Workshops.

*Image 3: Reading Materials Created with Locally Available Resources*



The clear advantage of these homemade reading materials was that they provided access to learning materials outside of school without the need for external assistance. One parent had clearly adopted the creation of homemade materials as a way to overcome the problem of low supply of text-based materials, saying "*there is a time we as parents all come together and make reading materials so that we may not run out of them.*" Many participants said that they continued to create reading materials to use with their children at home. For example, in one village where Reading Clubs no longer occurred, one mother said, "*For homemade materials, some parents are still doing it. Even here (in my home) we have some materials that we use to teach children.*" The homemade materials allowed her to continue to reinforce a culture of reading for her children, even though the village-wide community activities had not been sustained.

*Image 4: Home-made Books Kept in the Village Book Bank*



The creation of homemade reading materials was not limited merely to the home. One Reading Club Volunteer showed us books he created using discarded rice sacks and cardboard, which were placed alongside the books given by Umuhuza to use during Reading Clubs, as seen in Image 4. The creation of materials using local resources was clearly empowering; when we asked one volunteer what might cause the Reading Clubs to stop functioning, he **Error! Reference source not found.** replied “*Nothing. It may be [a lack of] books, but we have been taught how to make reading materials/stories by ourselves.*”

Despite the enthusiasm we observed for the homemade reading materials, we cannot be certain that such materials will meet the demand of early learners, particularly once they begin to master the basics of the alphabet and simple word reading. Though not a solution in and of itself for the lack of print materials, homemade reading materials emerged as an important, sustainable practice that can serve as a useful resource for early learners.

### 3.5.2 Parent Savings Groups & Reading Club Volunteer Savings Groups

Savings Groups were pre-existing institutions within villages across Rwanda. Umuhuza seized on the savings group structure to create Parent and Reading Club Volunteer Savings Groups.

In each village, Umuhuza encouraged RAW attendees to continue meeting by assisting the attendees to form a Parents Savings Group, led by a President, a Secretary, and an Accountant. Membership required attendance at weekly meeting and a monthly contribution of 400 to 1200 Rwandan francs, (£0.35 to £1.05). Members were eligible to borrow money from the savings group (to pay for livestock, for example), and repay the loan plus interest. In all but one of the villages we visited, we found that the groups were operating and facilitating continued meetings between RAW attendees, even in one village where other community literacy activities had not sustained.

Umuhuza also helped organize Reading Club Volunteer Savings Groups, which were similarly led by a President, a Secretary, and an Accountant. One of these Reading Club Volunteer-Savings Groups was established in each sector (21 sectors total). At the founding of the group, which occurred at the end of direct implementation activities within a sector, Umuhuza seeded the group with 12,000 RWF per volunteer member. The members of the group had meetings once per month to manage the fund and discuss their work as Reading Club Volunteers. Members of these groups could borrow money to repay to the group with interest.

The goal for the parent & volunteer savings group, according to Umuhuza staff, was threefold: to ensure a continued focus on literacy, to address motivation issues by providing participants with financial incentive, and to provide funds that could be used towards enriching the community literacy ecology.

The first goal was to ensure a continuity of focus on early literacy, with parents meeting weekly to discuss the community literacy activities in the villages and Reading Club Volunteers meeting to discuss the successes and challenges in leading the clubs in the respective villages. One Reading Club Volunteer explained that, “*...when volunteers come from different corners of the sector and meet at one point, we discuss how it is going in our Reading Clubs, if children are still coming, if the activities are still taking place, etc.*” These groups would serve as resources and mentors to one another and establish an institutional knowledge around literacy that would not evaporate if one or two members no longer participated. We found evidence of this in our data when a Reading Club Volunteer mentioned the induction of a new member. When we asked who trained this new Reading Club Volunteer as Umuhuza had already ended their direct implementation, he replied, “*No one trained him. But in our cooperative, we have to meet once a month, the new member must be present, and we tell him about it, but we never*

*receive any other trainings.*" While they do not view it as training, by attending meetings, the new volunteer had the opportunity to gain knowledge from his peers. Of course, we did not observe the new volunteer leading a Reading Club, so we are unable to determine whether this soft training was sufficient to ensure a high-quality Reading Club.

In another sector, as Umuhuza explained, the Reading Club Volunteers went as a group to visit one member's Reading Club to learn from its success, though we did not witness this firsthand in our observations.

The second goal, financial incentives, were necessary to address continuing motivation to engage in community literacy activities, a common issue in activities that rely on volunteers. A Sector Education Officer explained the potential barriers to Reading Club Volunteers' continued participation in Literacy Boost activities:

*Another challenge, it may be easier to work with volunteers once they are motivated [with financial incentives]. If they are not [financially] motivated, we will be obliged to look for other people to do the task.*

But the President of one of the savings groups suggested that the group was a good vehicle to maintain interest in reading and motivation to continue participation. He explained:

*Our objective is for parents to encourage each other to bring children to the Reading Club, that's why the cooperative is called 'JYA MBERE MWANA' [Move Forward Child]. Every parent must make sure their children attend every [Reading Club] meeting. Another objective is to improve peoples' living conditions. When someone needs something, we lend them money, and they return it back when they find the money again.*

The access to finances that came with group membership would provide a further 'hook' with which to capture the attention and time of participants. One Reading Club Volunteer told us, "*We like the group because we are proud of being Reading Club Volunteers, we communicate easily, and when we end in September, we are given shares and interests. This helps us a lot.*"

The third goal of these groups was to establish an independent enterprise to generate revenue to reinvest in the print environment and literacy ecology of the village. In one village we visited, the President of the Parent Savings Group reported that they had already used some of the income generated to purchase materials for use in the Reading Clubs and in homes.

As the savings groups we visited were a maximum of 24 months old, we are unable to determine how long they will continue to operate, and whether the accrued interest will be put toward reading materials in the future. But at present, at least one group leader indicated that his group used the money to support children's reading. He said, "*From that interest, we buy materials like sacks, pens, markers, etc. and we make our children's materials during the Reading Awareness Workshops.*"

### 3.5.3 Inclusion of Literacy Boost Practices in *Imihigo*

Possibly unique to Rwanda, *imihigo*<sup>18</sup> are annual performance contracts between the national government and districts, sectors, cells, villages, and households. That is, everyone in Rwanda contractually commits to achieving certain goals (e.g. farm an acre of land; improve sanitation in the village) each year and held accountable annually to the goals to which they committed.

Umuhuza recognized this unique opportunity as a potentially effective way to encourage literacy activities in the villages, with accountability mechanisms in place to ensure participants reached their goals. One Village Leader explained how *imihigo* can be a powerful mechanism of accountability,

*The activity is incorporated in the imihigo of the district. So, in the village, every family has to decide which activities he must put in his imihigo. In my village we incorporated reading activities, and those activities regards not only the children, but also old people who do not have literacy skills.*

We found that Literacy Boost activities were included in *imihigo* at many levels throughout Gicumbi to promote accountability for sustaining home and community literacy activities. District officials informed us that the upkeep of Book Banks was included in the district *umuhigo*<sup>19</sup> registered with the national government. One Sector Education Officer informed us that his *umuhigo* also contained literacy objectives: “*General objective: to encourage or to improve the culture of reading in our sector. Specific objective: all Reading Clubs in all 27 villages of our sector must be active.*” At the village and household levels, we found some evidence that participants included home and community literacy activities in their *imihigo*. Five participants specifically said they put children’s reading activities in their household level *imihigo*, and a Reading Club Volunteer told us he had committed to creating 10 books to include in the Book Bank (at the time of the interview, he had already completed four. Two Village Leaders said they put specific Literacy Boost activities in their *imihigo*. One of those village leaders explained,

*Yes, the first item is to improve the culture of reading either in adults or in children. Another item is not to wait for sponsorship to bring us reading materials, so we created a cooperative which will help us to solve some problems like lack of money for buying books or newsletters, or some simple materials needed in Reading Club activities.*

The inclusion of literacy activities in *imihigo* is a potentially excellent way to spread reading activities throughout home and communities and ensure that those activities happen. However, as some partner staff suggested in interviews, *imihigo* commitments generally focus on measurable outputs (ex. the number of books in a Book Bank) rather than less observable practices (ex. reading to children at home). Furthermore, staff said that *imihigo* may encourage participants to focus on achieving the goal of the *imihigo* without paying attention to the quality of the output. Finally, people are encouraged to change their *imihigo* commitments from year to year, meaning that a focus on literacy in one year may not be sustained in subsequent years.

### 3.5.4 Implementation with *Urugerero* Youth

Another institution that Umuhuza identified as a potential important partner in sustainability are *urugerero* youth. These youths are recent graduates of secondary school who participate in a nationwide half year of community service.

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<sup>18</sup> Imihigo is the plural form of the word umuhigo and as such, is used as a plural noun.

<sup>19</sup> Umuhigo is the singular form of the word imihigo

Umuhuza worked with the organizers of *uruggerero*, called *itorero* officers, to recruit *uruggerero* youth to implement Literacy Boost activities. During the 6-month *uruggerero* service period, they led Reading Awareness Workshops in their villages following a training with Umuhuza. After the RAWs were completed, they assisted RAW attendees to establish a Reading Club. Umuhuza explained that some stayed on to become *intore*, or ‘committed ones’, to support the next generation of *uruggerero* as they began their service.

Using *uruggerero* youth had its advantages and drawbacks. On the positive side, the *uruggerero* youth perform their community service in their own villages, and thus they are well-positioned to remain involved in activities following Umuhuza’s phase out and the completion of their national service period. However, following the six-month service period, it is not uncommon for *uruggerero* youth to leave their villages to gain employment or to attend further studies. Of the four *uruggerero* youth we interviewed, two still lived in their communities, while the other two had accepted jobs that would require them to move away. All four were very engaged and enthusiastic about the activities, but our interviewers noted that all of them spoke about their own participation in community literacy activities using the past tense.

### 3.5.5 Partnerships with Pre-Existing Organizations: Churches & Tea Cooperatives

Umuhuza partnered with pre-existing organizations to be focal partners to continue implementation of activities in villages following Umuhuza’s phase out. Two such organizations were churches and tea cooperatives. Umuhuza delegated specific responsibilities to these partners, including the identification and selection Reading Club Volunteers and at times the management of the Book Banks. We first describe the church partnership before moving on to the partnership with the tea cooperative.

Because the population may attend any of several different church denominations, Umuhuza approached church officials at the district level to coordinate their partnership. Two denominations were interested to engage in the partnership, and agreed to work together with Umuhuza to strategize the sectors in which either denomination would work to contribute to community literacy activities. As Umuhuza explained, one of these two churches would be selected as a partner when they had a significant following in that village. If neither of the two partner churches satisfied this criterion of having a significant following in a village, Umuhuza would use other modalities to implement in that village without partnership from a church.

While churches are not typically approached by secular non-governmental organizations, Umuhuza recognized that the church organizations were large, established systems that interacted with a majority of the population on a weekly basis. Hence, the organization and communication around Reading Clubs could quickly spread through the churches’ congregants. Two Reading Club Volunteers in two different villages told us that the church leader in their villages assisted with encouraging members of their church to send children to Reading Clubs through short notices. Furthermore, the churches provided some infrastructure – buildings, benches, etc. – that could be used to host community literacy activities without additional cost. Many participants confirmed that the church partner in their village provided them with a place to meet, which is an important factor for sustaining Reading Clubs.<sup>20</sup>

While the positive assumptions of Umuhuza staff were confirmed by many of the participants with whom we spoke, other participants highlighted shortcomings with the church partnership initiative,

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<sup>20</sup> See section 3.6.4 Geography.

which include the exclusion of non-church members, the physical location of the church, and the agency of villagers to select the activity leaders themselves. One Sector Education Officer highlighted the first two of these shortcomings:

*You have to know that not everyone in the village attends the same church. Once you select only one church, those who don't belong to that church may not come/attend. Which means that it is better when Reading Club Volunteers were selected by people themselves in the village... Because [when the villagers] select [the Reading Club Volunteer] themselves, they may replace him/her if it does not work well.*

The situation of one of the villages in our sample illustrates this shortcoming in detail. In this village, our respondents told us that the partner church did not facilitate the community literacy activities as Umuhuza intended. First, the partner church did not actually have many followers living in the village. Second, the church was located so far away from the village center that participants we interviewed disagreed about whether the church was actually located within the official boundaries of the village.

The issue of who is selected to lead the Reading Clubs also was a sore point in this village. The Reading Club Volunteer that the church selected for this village said he would need to walk for two hours to reach the center of this village. Living so far away, the Reading Club Volunteers for this village were very disconnected from all the other participants we interviewed. These church-selected Reading Club Volunteers did not attend the Reading Awareness Workshops in this village. According to those we interviewed, the leaders of the partner church in the village refused make it more accessible to all participants by collaborating with other churches. A parent in this village explained, "... *[the Reading Club Volunteers] refused to lead Reading Clubs in churches they didn't belong to. [A member of one church denomination] refused to lead a Reading Club in a place which belonged to [another denomination].*" All these facts and opinions combine to explain why, despite assertions by the Reading Club Volunteer that the Reading Club was active, none of the other participants we interviewed in this village said that a Reading Club had ever occurred there. Attempts by an *urugero* youth to advocate with the village leader to fix the situation were to no avail.

The negative experience and implementation of Reading Clubs described in the paragraph above had further unintended consequences. Villagers we interviewed expressed a negative view of home and community literacy activities about which they had learned during the RAWs. One parent stated, "*People like these Umuhuza activities but due to what happened to our village, as I told you, we are deceived. People think that their time was wasted when they participated in these activities in the beginning.*" For similar reasons the same participant said that parents even stopped using the homemade reading materials at home because they felt discouraged after the Reading Club was not started in their village. Furthermore, parents stopped meeting after the official end of the Reading Awareness Workshops and did not continue to form a Parent Savings Group because their children did not have a Reading Club to attend. Due to poor implementation in this one village, participants perceived that they received an incomplete implementation of the program, which, according to some, made them far more likely to distance themselves from practices they learned from Literacy Boost.

Another non-religious partnership that Umuhuza created was with a local tea cultivation cooperative. This tea cooperative employed large percentages of the population in 11 out of 21 sectors of Gicumbi district; for example, in one village in our sample over 50% of the population worked for the tea cooperative. The partnership functioned in the same way it did with the church denominations; the

cooperative selected the Reading Club Volunteers and managed Book Banks in villages where they operated.

*Image 5: Tea Cultivation Area in the Project District*



Photo credit: C. Galloway

There were two main advantages to the partnership with the tea cooperative for sustainability. The first is that they used their organizational structures and regular meetings to encourage community literacy activities. In one village in our sample that worked closely with the tea cooperative, respondents told us that the cooperative held regular meetings in the village for work purposes, during which the tea cooperative leaders encouraged parents to send their children to Reading Clubs.

The second advantage was that the tea cooperative actively encouraged the continuation of Reading Clubs by providing a financial incentive to Reading Club Volunteers. A Reading Club Volunteer explained that the tea cooperative put 200,000 RWF into an account that all volunteers could access to buy reading materials. At the time of data collection in October 2017, the leaders of the tea cooperative stated they would allocate funds for reading materials in their 2018 budget. Furthermore, it was clear that continuing and supporting the community literacy activities aligned with their interests. Leaders of the tea cooperative reported that the activities helped them gain a higher rating to sell their tea because the Reading Clubs ensured that children were not present in the tea fields, which can be construed as child labor by the external certification institution.

### 3.5.6 Clear reporting structures

Umuhuza capitalized on the political will behind the drive to improve the culture of reading and the political organization of Rwanda to develop a reporting structure for Literacy Boost activities at the village level and continuing up to the district level. In this system, the Reading Club Volunteer reports

progress to the Village Leader, who then submits reports to the cell leader, who then submits reports to the Sector Education Officer. This reporting structure was intended to promote the accountability of sustaining the Literacy Boost home and community activities.

The reporting structure was not merely a log of activities and participants. Rather, it facilitated communication concerning home and community activities between different levels of government. One Sector Education Officer explained:

*All volunteers have one person who represents them at the sector level. I communicate to them through their representative when there is an urgent message I want them to know. It is easy to communicate messages to them because he lives with them in the village.*

One district-level education official spoke of the strong accountability structures in place: “*I work with Sector Education Officers, they report to us on how many books were given in schools of their respective Sectors and also on education related activities. We work closely with them, evaluating them and giving them instructions.*” While we did not observe this in action, it suggests there were strong mechanisms of communication and accountability in place between the District-level education official and Sector Education Officers; however, we found mixed strengths of these mechanisms at the sector and village level.

In our observations, we saw that the reporting structure was not functioning as intended. For example, in one sector meeting we observed, only 1 of the 5 cell leaders indicated that they had received a report from a Village Leader. Participants spoke of the difficulties with communication in rural areas may hinder the function of these reporting mechanisms. For example, one very engaged Sector Education Officer said that communication can be difficult due to lack of mobile phones or airtime.

### **3.6 Findings on RQ3. What Factors & Themes Influence the Mechanisms of Sustainability?**

During our iterative analysis of the data we collected, we identified certain themes, qualities, and factors that affect the degree to which activities are sustained. To answer this research question, we present our findings on five themes: Leadership, Ownership, Accountability, Geography, and Obstacles to sustained change in reading culture. We first define what we mean by each of these terms, and then present data on how these themes appeared in our data

#### 3.6.1 Leadership

Strong leaders are actively involved in project activities. They seek ways to address problems and mobilize participants to achieve project goals.

There were leaders at multiple levels of government who were clearly involved in the project and effectively mobilized others to continue home and community literacy activities. At the local government level, our data show there was strong leadership on the part of one district official, several district education officials, and some Sector Education Officers. We assert this after observing a consultative meeting between Umuhuza, the district official and several Sector Education Officers. As the meeting took place 4 months before the completion of the Literacy Boost program, the discussions focused on sustainability. During the meeting everyone was actively engaged with Umuhuza. The district official had encouraged beneficiaries to participate in the meeting, all with the goal of sustaining the positive impact of the home and community literacy activities. We witnessed the district official suggest

to the Sector Education Officers to convene meetings in their sectors to create plans for sustaining Literacy Boost activities, thereby mobilizing individuals to help sustain the project.

At the sector level, the quality of leadership we observed in the Sector Education Officers was mixed. One demonstrated strong leadership, as he/she mobilized people in their sector for Literacy Boost activities, *“Many times we visit Reading Clubs in order to show either children or parents that we are together. We motivate them through visiting them and their parents also became happy when they see that we visit their children.”* The account of one Reading Club Volunteer corroborated the reports of strong leadership from Sector Education Officers: *“The local authorities help us, they to communicate parents to encourage them to bring their children to the Reading Club. The sector makes the village level responsible for helping us in these activities.”* However, in one sector we noted a general lack of leadership for sustaining the Literacy Boost activities. In one meeting we observed, leaders did not mobilize participants to agree on a concrete plan to sustain activities at the sector level, resulting in a lack of plans for sustaining improvements in the culture of reading in this sector.

At the village level, the leadership quality of the Village Leaders was clearly linked to the degree to which activities were sustained. In the villages that had sustained its efforts to provide community literacy activities, the Village Leaders were heavily involved in the community reading activities and had taken on responsibility for continuing them. One of them stated, *“As a Village Leader, I have to talk about [Reading Clubs] and give time to the volunteers to say something about that. It is in my responsibility.”* The same two Village Leaders said that they worked with the Reading Club Volunteers to encourage children to attend, and sometimes even attended the Reading Clubs themselves. One of these Village Leaders stated, *“Every Saturday from 15:00 I visit Reading Club activities to know what went wrong and then I report them, or if it is easy we find another way to solve it.”* The Village Leaders also both led efforts to continue the meetings for the Parent Savings Groups, either by taking on one of the leadership roles in the group or working with the leadership to keep the group going. Other participants corroborated these Village Leaders’ accounts of involvement in community reading activities.

In these villages with continued and sustained community literacy activities, it was not merely the Village Leaders who had taken on leadership responsibilities. Other people, such as Reading Clubs Volunteers or leaders of the Parent Group, had also taken on leadership in continuing their activities, and in some cases the leaders overlapped between activities. This bound together the Parent Savings Groups, the Reading Clubs, and even village leadership. For example, in one village, one of the Reading Club Volunteers was also the leader of the Parent Savings Group and worked closely with the Village Leader. Members of the Parent Savings Group committee also helped manage the reading materials for the Reading Club. The way they worked together facilitated frequent communication and accountability among participants to ensure activities continued. Similarly, another one of the strong Village Leaders was part of the leadership of the Parent Savings Group, which facilitated easier management of community reading activities.

The strong example of leadership described in the village above stands in stark contrast with the low involvement of the Village Leaders in the two villages where little remained of the original Literacy Boost community activities. These Village Leaders did not participate in the community reading activities while they were being implemented, and therefore were not in a good position to lead any efforts to continue them. A Reading Club Volunteer in one of these villages stated, *“You know the challenge we had here is that the Village Leader never took part in any of these activities. Not his wife or any of his children attended our activities. If he was involved in these activities, it wouldn’t have stopped.”* We do not have

data to indicate the strength of this Village Leader's involvement in other activities, but we do know he was in this post for 1.5 years at the time of data collection (fully covering the implementation of home and community literacy activities by Umuhuza).

More broadly beyond the Village Leaders themselves, in low-sustaining villages we could not identify any other clear leadership of community reading activities. No one could point to the person or persons responsible for ensuring the continuation of activities. Participants mentioned problems of implementation, or lack of coordination between Reading Club Volunteers and the Village Leader, but there was no evidence of anyone actively seeking to resolve the problems. In one village the *urugerero* youth stated, "*Every day parents asked when the Reading Club would take place. I tried [to organize] with the Village Leader but nothing has changed.*" Without the support of the leaders in these villages, no other people had stepped in to provide leadership for community reading activities. Reading Club Volunteers appeared not to have reached out to parents and other community members to facilitate children's attendance. One Reading Club Volunteer said, "*As the Reading Club Volunteers, we should have visited children in their homes to show them how it is done. This is my weakness.*"

### 3.6.2 Ownership

Ownership is the valuing of project activities and the personal responsibility that participants feel for the project.

In our interviews and observations, many leaders throughout levels of government in Gicumbi appeared to have taken ownership over sustaining Literacy Boost activities. At the district level, there was a high degree of ownership over home and community activities among top officials. The meeting we observed between Umuhuza and district partners was well-attended, and one high-level district official demonstrated his/her ownership of the meeting by helping Umuhuza staff facilitate the meeting. This official displayed an understanding of ownership him/herself by discussing the need for the district partners to 'own' these activities and make plans to continue them after Umuhuza finished its work. During an interview, the district-level education official also demonstrated a high degree of ownership over the activities, stating:

*I contributed in terms of sharing ideas on how the district will keep these activities going. I am the one together with [Umuhuza] who had the idea of what can be done to plan for how the district will manage these activities. We are the initiators of owning these activities by the district.*

Umuhuza corroborated this account, telling us that this official had proposed to Umuhuza to link teachers with Reading Clubs to serve as technical advisers. Whether or not this actually occurs, the idea demonstrates the official's ownership of the program and desire to see it continue.

At the sector level, the degree of ownership varied among Sector Education Officials. One Sector Education Officer said he was driving the effort to continue activities, while another Sector Education Officer spoke more about the Literacy Boost activities in schools and said he did not do as much to manage reading activities in communities because he struggled to find time to visit the villages. During one sector meeting that was convened to create plans for sustaining Literacy Boost activities (as had been requested by the high-level district official), we observed a low degree of ownership on the part of many attendees. Throughout the meeting, the leader of the sector sought validation and leadership from us, the researchers, on the sustainability plans. From what we observed, the meeting did not culminate in any actionable plans to sustain activities.

The partner organization that had taken over a high degree of ownership over the reading activities was the tea cooperative. They were very enthusiastic about continuing the reading activities because they said it helped them gain a higher certification from a governing body to sell their tea. They explained that if children were occupied in Reading Clubs, they would not be mistaken for working in the tea plantations, which allowed for the higher certification status. Since the tea cooperative perceived this positive effect of the community reading activities, they exerted resources and management structures to encourage sustainability. The head of the tea cooperative stated, “*We decided that when these agreements end, we, the tea cooperative, are going to take over the responsibilities and prepare the budget for it. Because we want to keep the activities going.*”

At the village level, we found that ownership over the sustainability of Literacy Boost activities varied. In one high-sustaining village, participants had strong ownership over the community reading activities. They claimed to have the greatest responsibility for encouraging children to learn how to read, as opposed to Umuhuza or schools. The Village Leader in this village stated, “*I take the activities as my own because if I don't, my children will no longer benefit from them.*” A parent in this village stated took the Parent Savings Groups and Reading Clubs as their own and, “*It is us parents who are driving the effort to keep our groups going.*” However, in another a high-sustaining village, participants frequently cited Umuhuza as having responsibility for continuing activities or driving the effort to keep them going. When asked, in order of importance, who has responsibility to encourage reading activities outside schools, three participants said Umuhuza came first. It is worth noting that at the time of data collection, Umuhuza had not completed handover of the program in this village, so participants may have still felt an active Umuhuza presence.

In low-sustaining villages participants had not taken ownership over sustaining Literacy Boost community reading activities. When asked why activities ended, participants stated that it was according the schedule of Umuhuza, or because Umuhuza was not following up any more. An *urugero* youth in one of these villages stated, “*Even though I was not the one who led the Reading Club, I know that Umuhuza used to visit them to see how they are working, and understand what challenges they are meeting, etc. So, it ended because it was the time to end it as planned in the schedule.*”

### 3.6.3 Accountability

Accountability is the existence of transparent mechanisms to enforce the responsibilities for continuing project activities among community members.

The inclusion of Literacy Boost practices in *imihigo* at many levels and the use of clear reporting structures were mechanisms put in place by Umuhuza that encouraged accountability for sustainability. At the village level, we found evidence to suggest strong accountability in high-sustaining villages and not in low-sustaining villages. This is shown by similarities and differences within villages between participants' accounts of community reading activities. In high-sustaining villages, accounts generally agreed, but in low-sustaining villages, they differed greatly. In one low-sustaining village, the Village Leader and the two parents interviewed said that all activities had stopped, while the Reading Club Volunteer said they were continuing. Similarly, in the other low-sustaining village, the Village Leader and one of the Reading Club Volunteers said the activities had stopped, while the other Reading Club Volunteer said they were continuing. In fact, in this village, the Village Leader connected us to a church leader who he claimed was responsible for implementing Literacy Boost activities in this village, but later we found out this church leader worked in a different village. The conflicting reports indicate that no

one was checking and following up to make sure that activities were happening, and if they were not happening, to discover the cause why.

#### 3.6.4 Geography

Geography was another theme throughout our data that influenced whether certain activities were sustained. In particular, the location of a Reading Club was often a point of contention. If the place where the club meets is far from the center of a village or particularly inaccessible, like up one of the steep hills seen in Image 5, it may prevent children from attending or even prevent the Reading Club leader from convening a Reading Club. For example, one parent said that the Reading Club was too far away. When asked why they did not send their children to the Reading Club, they said, “*Because it takes long time to reach where Reading Club activities take place, and they are still young, it is not easy for them to reach it on their own.*” Rain also posed a challenge for the location and accessibility of the Reading Club, as many Reading Clubs are held outdoors. One Reading Club Volunteer explained, “*When it rains, it becomes a challenge to reach the Reading Club because I live very far from there. I may even not be able to attend.*” Furthermore, unless there is a covered area to hold the Reading Clubs, they are cancelled when it is raining.

#### 3.6.5 Obstacles to sustained change in the reading culture

Two other factors that may have hindered sustainability were a general lack of time, and the diminishing supply of professionally printed reading materials. For the issue of time, a church leader said he struggled to find time to go to Umuhuza meetings and said, “*Personally, I never went to Umuhuza trainings because of all the responsibilities I have. I have many parishes to control. I delegated my colleagues for different trainings, but I have attended three meetings.*” One Sector Education Officer said he also struggled to find time because the Reading Clubs took place on Saturdays.

The diminishing supply of books also was an issue. Despite efforts during implementation to encourage the production and use of homemade reading materials, many participants cited problems of book supplies. Participants said that books get damaged during the rain, or children may not return them after borrowing them, so the number in the Book Bank diminished over time. Another issue is that after reading each story book, children grew bored of the titles in the Book Bank and wanted new ones.

### **3.7 Discussion & Conclusion**

In this study, we set out to assess whether villagers and the broader community had sustained Literacy Boost community literacy activities; the mechanisms through which the activities were sustained; and the themes or qualities of participants that set apart the sustaining villages from those places where community literacy activities no longer took place.

We found that certain communities had sustained some or all of the community literacy activities, while other communities had sustained none of the literacy activities. We identified several mechanisms through which the activities were sustained, including the use of local resources to make simple reading materials, the creation of Parent and Reading Club Volunteer Savings Groups, the creation of literacy related outputs for *imihigo* performance contracts, the recruitment of *uruggerero* youth to lead activities, partnerships with pre-existing organizations like the church and a tea cooperative, and finally the creation of clear reporting hierarchies to ensure accountability.

As with the actual community literacy activities, these mechanisms varied in their strength and functionality. We identified several qualities within the participant population that seemed associated with activity success, including leadership, ownership, accountability, and geography.

The efforts of Umuhuza staff to evolve the Literacy Boost project into a sustainable endeavor with the goal of changing the reading culture is commendable. Umuhuza introduced several new innovations to the Literacy Boost program that, to the knowledge of the authors, do not exist in any other of the several dozen countries in which Literacy Boost is implemented. One of these innovations is the creation of the savings groups. All too often, community literacy programs rely on volunteers who receive little, if any, remuneration for their enormous efforts. Not surprisingly, attrition of volunteers can be high and make a program unsustainable. The Parent Savings Groups and Reading Club Volunteer Savings Groups address this issue by empowering these groups to take charge of activities themselves. Whether these Savings Groups actually function in the way they were intended, and whether the groups are ultimately self-sustaining, largely depends on the quality of leadership, ownership, and accountability that members of the groups embody.

An equally important goal of these groups is the generation of income to be used to buy books. At the time of data collection, it was not clear how many groups would use the money to purchase books or other materials. However, given the frequency with which our respondents mentioned the need for new books, the Savings Groups alone are unlikely to quench the demand for new and varied storybooks and other children's reading materials.

One technique that partially addresses the diminishing supply of materials, and which we saw ample evidence of in many villages, is the creation of materials using locally available resources. By guiding parents and family members in how to create simple materials, villagers feel empowered to directly contribute to their children's learning. But this only partially addresses the lack of books. More efforts are needed to ensure children have free access to a wide range and variety of reading materials throughout their day and life.

Another innovation led by Umuhuza was the formation of partnerships with pre-existing organizations. By partnering with these organizations, Umuhuza invested knowledge and skills into these organizations that would still function long after Umuhuza's operations in the district had ended. The church partnership, in particular, is one that holds much promise and many pitfalls. As we saw in the data, partnering with one church versus another can exclude certain members of other churches. And investing all ownership and leadership for community activities in church leaders may cause friction with the larger community. Yet if these and other potential problems can be resolved, a partnership with a wide variety of churches may accelerate improvements in the reading culture and the value people place on literacy. Churches exist everywhere across Rwanda, and the church itself is an institution that was built upon a textual foundation. That is, the tenets for virtually every denomination of Christianity, (not to mention Islam) is based on the written word, the Bible. Encouraging church leaders to help their parishioners learn to read, if done properly and according to solid guidelines, could be significant step forward in ensuring learning for all.

Umuhuza's partnership with the private tea cooperative was also an innovation. By doing so, the children and community members could take advantage of the cooperative's meeting structures and spaces. The cooperative also received some benefit to this partnership, as members reported that children's gains in their reading skills were useful to the parents (many of whom could not read themselves) and the fact that children were in Reading Clubs helped the cooperative gain a higher rating to sell their tea.

Finally, Umuhuza's efforts to align existing national programs are noteworthy. Rather than creating additional structures, programs, or initiatives with little hope for sustainability, Umuhuza worked with the strengths that were already present in Rwanda. Incorporating literacy objectives into the Imihigo performance contracts furthers the expansion of a reading culture by situating reading and learning not solely in school, but also in the personal goals individuals set for themselves. Recruiting and training *urugero* youth to lead or oversee certain activities also taps into a national program to mobilize a young and motivated group of educated persons around the country to bring literacy into their villages.

The success of all these mechanisms, however, ultimately relies on the individuals who are engaged in the activities. As we saw in our data, strong qualities of leadership, ownership, and accountability are highly associated with initial sustained success. These qualities will determine whether the mechanisms will lead to long-term sustained improvements in the reading culture in Gicumbi. The challenge now is to understand how to foster these qualities to ensure the milieu in which the community literacy activities take place support the success of the activities.

One limitation to our findings involves the Mureke Dusome project.<sup>21</sup> This Rwanda-wide initiative that expanded the Literacy Boost project to every school and its accompanying village in the country had some impact on our findings. The Mureke Dusome project was implemented in Gicumbi in 2017. Throughout data collection, it was difficult to distinguish the impact of Mureke Dusome and the impact of Literacy Boost because their goals and program activities are so similar. Participants in villages referred to all activities as Umuhuza. We did find, however, that one of the Mureke Dusome Literacy Champions was welcomed into a Reading Club Volunteer Savings Group, and that the Mureke Dusome parents committee had visited a Reading Club in one village. It is possible that this project may have helped to further mobilize parents to support their children reading in homes and communities.

Our sampling technique relied on the recommendations and judgement of Umuhuza staff. Sampling respondents based on the recommendations of an implementing partner is always a risky proposition: We requested to visit a range of villages and it was possible that Umuhuza could have sent us to their nine most exemplary villages, while hiding their least exemplary. However, based on the range of success we saw in the villages we visited, we believe that Umuhuza provided accurate information and options for data collection.

Our small sample size, and the timepoint at which our data were collected, prevent us from making any strong claims about the persistence and sustainability of the community activities overall. We can certainly assert that at least a few villages had very high degrees of sustained activities, and we can also assert that at least a few villages had almost no sustained activities.

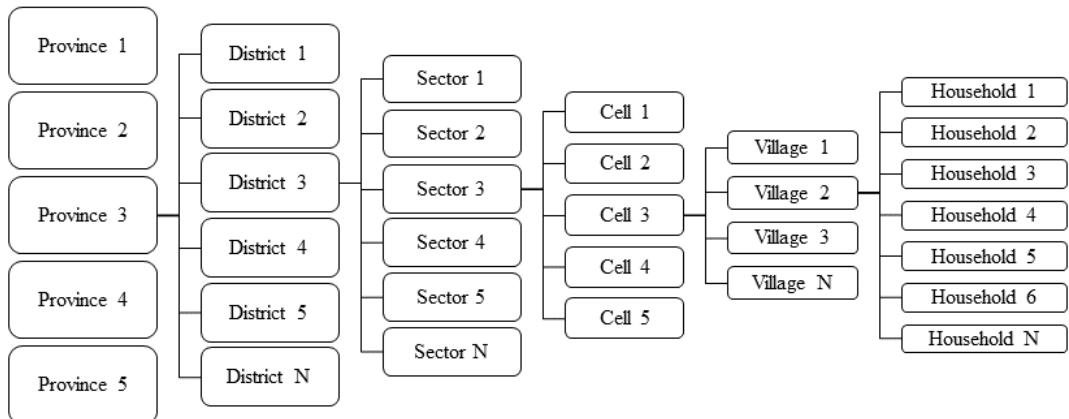
It is also important to note that simply because community activities had ceased to function does not mean that families and children would not continue to benefit from them. In one village where all community literacy activities had ceased, one parent explained how they created their own reading materials and read to their children three times a week after what they learned during the Reading Awareness Workshops. It is possible that sustained improvement in the reading culture will occur in a piecemeal fashion. But without a representative sample of all the villages in the district, we can only say that Literacy Boost's community literacy activities, adapted and innovated through the efforts of Umuhuza, show promise for a sustainable, positive change in the culture of reading.

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<sup>21</sup> For more on Mureke Dusome, see the Appendix.

### 3.Appendix

*Figure 16: Administrative Schematic of Rwandan Political Units*



		<u>Provinces</u>	<u>Districts</u>	<u>Sectors</u>	<u>Cells</u>	<u>Villages</u>	<u>Households</u>	<u>Residents</u>
Rwanda	Total	5	30	416	2,148	14,837	2,424,898	10,515,973
Overall	Average	--	6 per Province	14 per District	5 per Sector	7 per Cell	163 per Village	4.3 per Household
Study	Total			21	109	630	70,381	395,606
District	Average	--	--	--	5 per Sector	6 per Cell	112 per Village	5.6 per Household

\*All data taken from the 4<sup>th</sup> Population & Housing Census (NISR & MINECOFIN, 2012)

Image adapted from Friedlander, Arshan, Zhou, & Goldenberg, (2018)

### Prior Research on and Key Themes for Assessing Sustainability

The Development Assistance Committee, a committee of the Organization for Economic Cooperation and Development, is an international forum of the largest funders of foreign aid. It highlights sustainability in its *Criteria for Evaluating Development Assistance* (Development Assistance Committee, 2006). The Development Assistance Committee suggests that an assessment of sustainability should account for the following two aspects:

- 1) The extent to which benefits of the program continue after implementation ended, and
- 2) The factors that facilitated or hindered sustainability.

While frequently acknowledged as an important concept in development, sustainability is not often included meaningfully in evaluations of community-focused development programs (Chapman & Moore, 2010; Samoff, Leer, & Ready, 2016). However, the existing research looking into sustainability tends to focus only on the first aspect, rather than both aspects laid out by Development Assistance Committee (Bjorkman Nyqvist, De Walque, & Svensson, 2014; Duflo, Dupas, & Kremer, 2011; Muralidharan & Sundararaman, 2011).

Literature that explores the methods behind sustainability assessments generally highlight different elements of sustainability that may facilitate lasting change in community development programs. A sense of local ownership (Samoff et al., 2016), community acceptance of values and mechanisms of the program (Rogers, 2010), the extent to which community members participated in program activities, and local leadership and planning (Nkansa & Chapman, 2006) are all examples of elements that likely contribute to sustainability.

### Glossary of Key Terms

**Administrative levels of local government in Rwanda** There are four levels of local government. From smallest to largest, they are the village, the cell, the sector, and the district.

**(Tea) Cooperatives:** Groups that collectively pool resources for a common purpose. For example, contributing money individually for the goal of providing loans and gaining from the interest.

**District-level education officials:** Local government officials that oversee all education activities in the District. They report to the Mayor and Vice Mayor of the District.

**Imihigo:** Performance contracts at many levels, from the district to the household, against which Rwandans measure progress against goals.

**Literacy Champions:** Community literacy volunteers initiated by Mureke Dusome. They lead Reading Clubs and manage community Book Banks distributed by Mureke Dusome.

**School General Assembly Committees:** Parent teacher organizations at every school.

**Sector Education Officers:** Local government officials that oversee all education activities in a Sector. They report to the District-level education official.

**Umuganda:** The national community service morning that takes place on the last Saturday of every month in Rwanda. All citizens are required to participate.

**Urugerero youth:** National youth service Rwandans carry out after completing secondary school. **Itorero** is the larger government commission responsible for the urugerero program, among other things.

**Village Leaders:** The highest leader at the village level. They are elected to terms of 5 years by their constituents.

### *Mureke Dusome*

Mureke Dusome is another Save the Children program that seeks to scale up the Literacy Boost home and community activities at the national level. Gicumbi was chosen as a pilot district for implementation in 2016 so as to build on existing structures in place for Literacy Boost. Mureke Dusome sought to better link community action activities to schools and create capacity within local governance structures to encourage reading activities in communities. The program trained local government leaders to build the capacity of School General Assembly Committees, parent-teacher organizations, to encourage reading activities outside school. They also mobilized Literacy Champions, which are similar to Reading Club Volunteers in the Literacy Boost set of community action activities, from each school to manage Reading Clubs outside school. Further, Mureke Dusome provided a community Book Bank of 100 books to each village that contained a school for use during Reading Clubs (Save the Children, 2016). Umuhuza was also an implementing partner for Mureke Dusome.

The key difference between Mureke Dusome and Literacy Boost is that Mureke Dusome's approach was created to facilitate a national scale-up of community action activities with fewer resources. As such, Mureke Dusome had a lighter implementation strategy that did not cover every village in Gicumbi, instead targeting villages that contained schools. For more on Mureke Dusome, see its annual 2016 report available at [http://pdf.usaid.gov/pdf\\_docs/PA00MJBT.pdf](http://pdf.usaid.gov/pdf_docs/PA00MJBT.pdf).

*Table 29: Dimensions of Sustainability*

Dimension	Description	Example of Strong	Example of Weak
<b>Planning</b>	The organization of human and economic resources for a project's agenda, including organizational structures.	<ul style="list-style-type: none"> <li>• Communities have clear roles and responsibilities for the management of project activities.</li> <li>• Regular meetings to coordinate ongoing project activities.</li> <li>• Contingency plans exist in the event of problems</li> </ul>	<ul style="list-style-type: none"> <li>• Communities demonstrate lack of organizational structures</li> <li>• Communities and homes indicate the discontinuation of project activities</li> </ul>
<b>Accountability</b>	The responsibilities for continuing project activities among community members are clear. There are transparent mechanisms that enforce those responsibilities.	<ul style="list-style-type: none"> <li>• Participants demonstrate presence of clear mechanisms that hold leaders to account for continuing project activities.</li> <li>• Participants display clear communication regarding the project activities.</li> <li>• Participants have a common understanding of who is responsible for managing project activities and how the project's resources are allocated.</li> </ul>	<ul style="list-style-type: none"> <li>• Participants indicate opaque responsibilities for continuing project activities.</li> <li>• Participants do not have a common understand for who is responsible for continuing project activities.</li> </ul>
<b>Leadership</b>	The nature and effectiveness of leaders that coordinate efforts to maintain project activities.	<ul style="list-style-type: none"> <li>• Leaders are actively involved in project activities.</li> <li>• Leaders seek ways to address problems.</li> <li>• Leaders mobilize participants to achieve project goals.</li> </ul>	<ul style="list-style-type: none"> <li>• Leaders are not involved in project</li> <li>• Leaders do not mobilize or coordinate efforts of their constituents</li> </ul>
<b>Ownership</b>	The valuing of project activities and the personal responsibility that participants feel for the project	<ul style="list-style-type: none"> <li>• Participants demonstrate a sense of responsibility for the project's outcomes and for keeping activities going.</li> <li>• Participants may initiate their own activities to keep the project going.</li> </ul>	<ul style="list-style-type: none"> <li>• Participants rely heavily on external actors for support to continue project activities.</li> </ul>
<b>Adaptation</b>	The ways in which community members adjust or innovate program practices in order to make them sustainable, or ways in which they incorporate program practices into pre-existing structures.	<ul style="list-style-type: none"> <li>• Actors use regularly occurring, pre-existing meetings to promote project activities</li> <li>• Actors use locally-found materials for project activities</li> </ul>	<ul style="list-style-type: none"> <li>• Actors rigidly implement activities do not account for local context/culture/other considerations</li> </ul>

## Village snapshots

### **Village 1 – high sustainability**

Implementation 2014-2015

Most Literacy Boost activities were continuing at the same intensity as when they were first implemented in 2014-2015. Reading Clubs met twice per week, children who attended Reading Clubs had Reading Buddies, and parents from the Reading Awareness Workshop met once per week and had formed a Parents Group for saving money. The Parents Group was run by small group of parent leaders chosen among the group. One of the Reading Club Volunteers was also the leader of the Parents Group. This man seemed to be someone that everyone in the village trusted and he had a lot of intrinsic motivation to keep the activities going. The Village Leader was heavily involved in all activities. He worked closely with the Reading Club Volunteer, visited Reading Clubs frequently, helped store reading materials, and discussed activities during *umuganda*, the national community service morning that takes place on the last Saturday of every month in Rwanda. The place where the Reading Club met was centrally located on a main road through the village and right next to the cell office.

### **Village 2 – high sustainability**

Implementation 2016-2017

All Literacy Boost activities except Reading Buddies were continuing in this village. Reading Clubs were taking place 2-3 times each week. Similar to Village 1, an elected group of parent leaders were running the ongoing Parent Savings Group. Participants did not mention any church involvement in the community reading activities, so it seems a church was not involved in implementation there. The Village Leader was very involved in the activities and is a member of the Parent Savings Group. Umuhuza still had presence in the village at time of interviews.

### **Village 3 – referred by tea cooperative**

Implementation 2016-2017

The accounts of sustainability in this village differed. Some participants said that Reading Clubs are continuing and that the Parents Group exists, but some said the Reading Clubs had stopped. Some participants mentioned that the Parents Group helped them to buy sheep but did not mention reading materials. Some participants said that Reading Awareness Workshops never happened in this village, and it is unclear if this is because they didn't think meetings with parents and the *urugerero* youth were Reading Awareness Workshops, or whether they simply did not take place. Two participants mentioned reading clubs for adults taking place with great frequency. This village is very close to the border with Uganda, and most children speak Rukiga, a dialect of Kinyarwanda, at home. Roughly 50% of people in this village work with the tea cooperative.

### **Village 4 – low sustainability**

Implementation 2016-2017

No Literacy Boost activities were occurring in this village at the time of data collection. Participants noted the occurrence of Reading Awareness Workshops, but some said that the Reading Clubs never happened in this village. Only one participant saw a Book Bank, and most people were unfamiliar with the terms 'reading corners' and 'Reading Buddies.' Umuhuza partnered with a church that was located very far from the middle of the village to implement Reading Clubs, making them inaccessible

to many children. Some participants said this church was not actually located within the borders of this village, while others said it was. The Reading Club Volunteers for this village were selected by this church, instead of among the parents who attended the Reading Awareness Workshops. The Reading Club volunteers for this village (from the church) did not attend Reading Awareness Workshops in this village. The Reading Club Volunteers would not move the Reading Club to a location more centrally located. The church received a book bank, which was kept at another person's house (unaffiliated with Reading Club). Another church volunteered to let the Reading Club be held in their facilities, but Umuhuza/the other church declined.

#### Village 5 – low sustainability

Implementation 2016-2017

Most Literacy Boost activities had stopped in this village, in particular the Reading Clubs were no longer meeting. None of the study participants in this village study said they were part of a Parent Savings Group, but one participant mentioned that they thought it was continuing. An *uruggerero* youth facilitated Reading Awareness Workshops in this village, and the Reading Club volunteers were selected by one of the church denominations in the village. According to participants' accounts, the church also offered to use their facilities for Reading Clubs in case of rain. The accounts of some participants in this village do not match; the Village Leader said he did not attend Reading Clubs, but one Reading Club Volunteer said the Village Leader helped to keep activities going, and also said Reading Awareness Workshops and Reading Clubs were still continuing. The other Reading Club Volunteer contradicted this account and said that the Reading Clubs had stopped and confirmed that Village Leader had no involvement. The *uruggerero* youth said the Village Leader was involved. This village was located next to the main road between Kigali and the border to Uganda and is close to the town of Byumba.

## **Part 4. Recommendations**

In this brief section we offer recommendation for future action based on the findings presented in the report.

### **4.1 Recommendations for Government Partners**

#### **➤ *Disseminate information on the critical role families play in supporting early learning***

The results of the sustainability analysis suggest that important, sustained change is possible through engagement with the family and community. Many families quickly acted upon the messages spread on the importance of reading to children and engaging children cognitively. By empowering families directly in children's learning, everyone – children, families, schools, Rwanda as a whole – stands to benefit. Expanding these messages nationwide might be an important step to fostering a culture of reading in Rwanda.

#### **➤ *Capitalize on the existing strengths and capacities found throughout Rwanda to better support children's learning***

In Rwanda, there exist assets and resources that could be applied to improving children's learning. These assets include, but are not limited to, *umuganda* meetings, *imihigo* performance contracts, and *urugerero* youth. For example, during *umuganda* monthly meetings, a new technique to support learning could be shared every month; every household could be recommended to include an early learning objective in their *imihigo*; and *urugerero* youth could be trained to lead reading clubs in every village.

#### **➤ *Improve coordination between the Ministry of Sports & Culture, the Ministry of Education, and the Rwanda Ministry of Local Government on responsibility & accountability for community literacy promotion & strategy***

As Umuhuza demonstrated, engaging actors outside of MINEDUC's normal sphere, such as *urugerero* youth, can aid MINEDUC in ensuring a quality education for all and improve learning for all. Communication to local and district authorities should continue to highlight the importance of community literacy promotion so that it does not lose the attention of the populations.

#### **➤ *Expand the national library initiative to provide children everywhere access to fun and engaging reading materials.***

Virtually all participants highlighted the lack of reading materials, particularly Kinyarwanda languages materials, as an issue that needs to be addressed. One possible technique to address this issue is the expansion of community libraries. We specifically mention community libraries because children may access them throughout the year, rather than school libraries which are only accessible when school is in session. Creating a culture of reading is dependent on a steady supply of a diverse set of reading materials, something that community libraries would address.

#### **➤ *Promote the alignment of private organizations' goals and national educational goals.***

We interviewed members of one tea cooperative who enthusiastically supported community literacy activities. These tea cooperative members referred to the many benefits they gained from having children attend reading activities: children's improved reading skills allowed them to read messages that their family could not, and the activities kept children far away from the fields. Helping private organizations discover these types of benefits will internally motivate members of the organization to sustain their support for children's learning.

- ***Develop guidelines and best practices to support early learning through partnerships with religious organizations, and form partnerships with religious organizations***

Partnerships with religious organizations could be a powerful tool to promote learning. Religious organizations have an incredible presence throughout Rwanda. Places of worship (ex. churches, mosques) are found even in the most remote areas. However, any partnership with religious organizations must be done with the utmost care so as not to exclude others who do not belong to a specific denomination.

#### **4.2 Recommendations for Program Implementers**

- ***Consider how to increase the involvement of local leaders for the duration of any intervention***

Ensuring the participation of local leaders provides a strong advocate for the activity both during the project's implementation phase and once direct implementation is over. Efforts should be made from the very beginning of a program to plan for sustainability and consult local leaders for how they could envision taking on leadership (and ownership) over program activities once project ends.
- ***Better connect school staff with communities***

Several respondents in our data mentioned that improving links between the communities and schools could provide greater accountability for sustainability and to encourage cohesion across literacy efforts. However, this must be done in a manner that values the central role that families and communities have in children's learning. If not done carefully, communities may assume that supporting early learning is the sole responsibility of the school.
- ***Include sustainability indicators in the monitoring and evaluation of any project***

Ongoing data collection and analysis of a program's sustainability potential will provide implementers with the information needed to adjust an intervention to better ensure lasting impact and change.
- ***Partner with pre-existing organizations to capitalize on the assets and resources already present in beneficiaries' communities***

Rather than starting from scratch and building systems that only last for the life of the project, partnerships with pre-existing organizations provide program implementers with an established structure within which to work and which will exist after the program has ended. However, any partnership should be undertaken cautiously, with written agreements about the goal, scope, and target population for the activities to ensure inclusivity.

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