

Webinar

The Untapped Potential of Supporting Learning Outside School

**EVIDENCE FROM A RANDOMIZED CONTROL TRIAL IN
RWANDA**

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Save the Children USA

October 26th, 2016

About this presentation

The first set of presentation slides (3 to 23) were presented during the Global Reading Network's October 26th, 2016 webinar. The remaining slides offer select details that were not presented in the webinar

For complete details about *Literacy Boost in Rwanda: a Randomized Control Trial*, please refer to the impact evaluation, available at these websites:

- › friedlanderresearch.org
 - › globalreadingnetwork.net
 - › rwanda.savethechildren.net
- Shortly after the webinar concludes, a recording of the webinar will be available on the GRN's YouTube channel: [youtube.com/channel/UCzhulfJBsTgjLXIh2HPKoMw](https://www.youtube.com/channel/UCzhulfJBsTgjLXIh2HPKoMw)

What is Literacy Boost?



8 Principles for Effective Literacy Action



1. Start Early



2. Provide More & Better Books



3. Engage Families & Communities



4. Ensure Teachers Can Teach Reading



5. Recognise that Language Matters



6. Practice, Practice, Practice

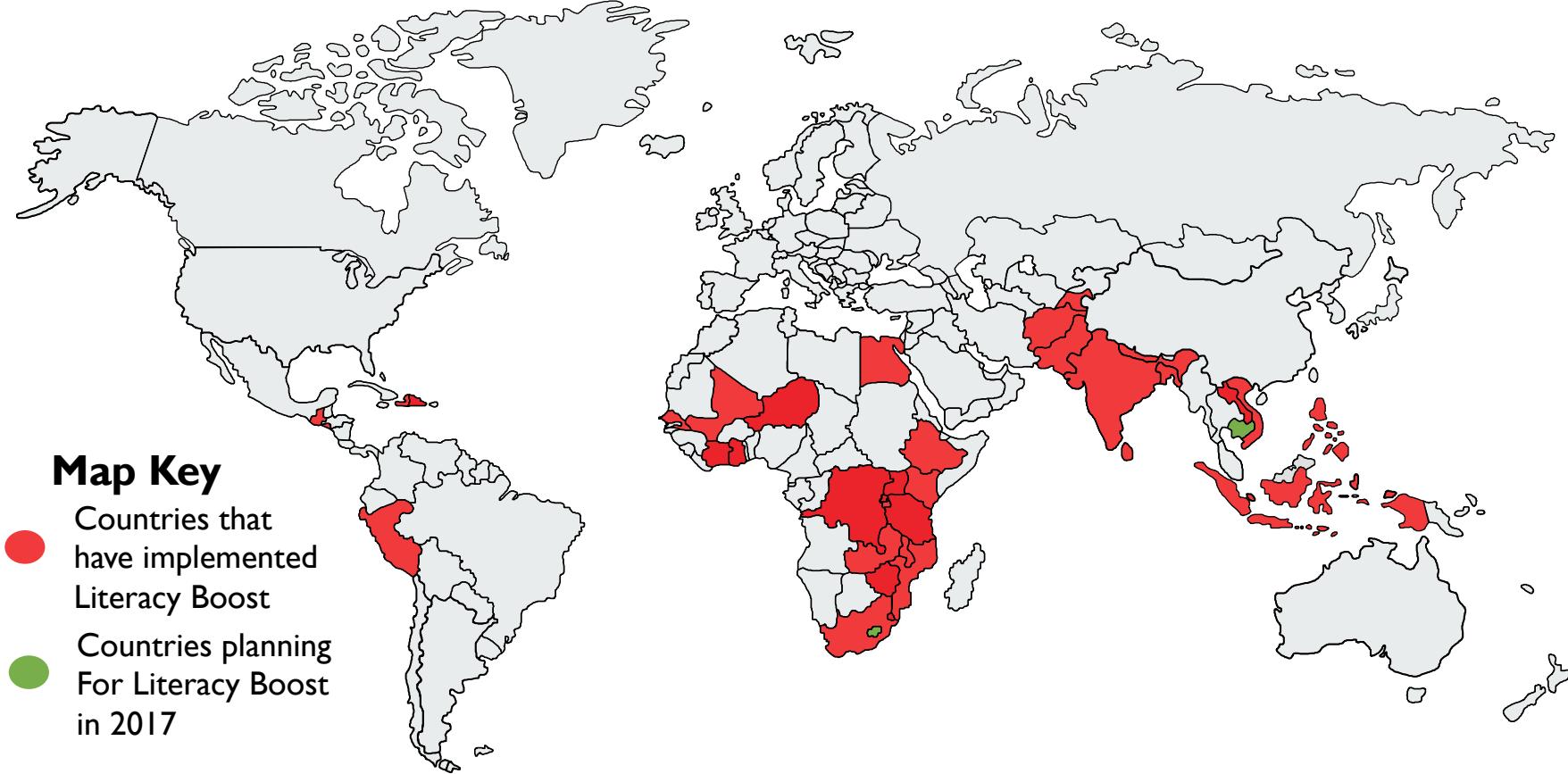


7. Assess & Track



8. Policy

Countries where LB has been implemented



Map Key

- Countries that have implemented Literacy Boost
- Countries planning For Literacy Boost in 2017

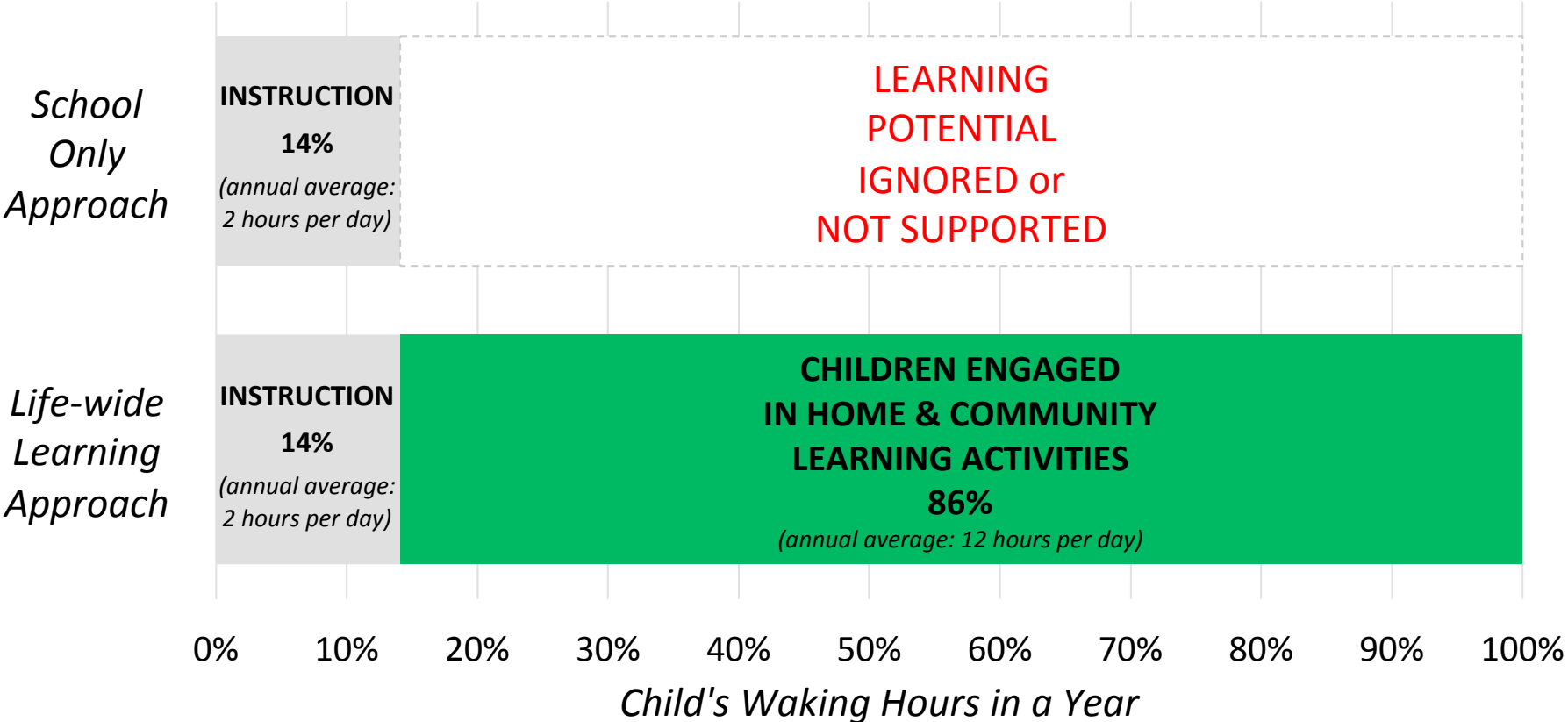
Literacy Boost in Rwanda: A randomized control trial

conducted by
Stanford University

in partnership with the
Rwanda Education Board

A New Approach to Supporting Learning?

A Comparison of Potential Approaches for Improving Learning



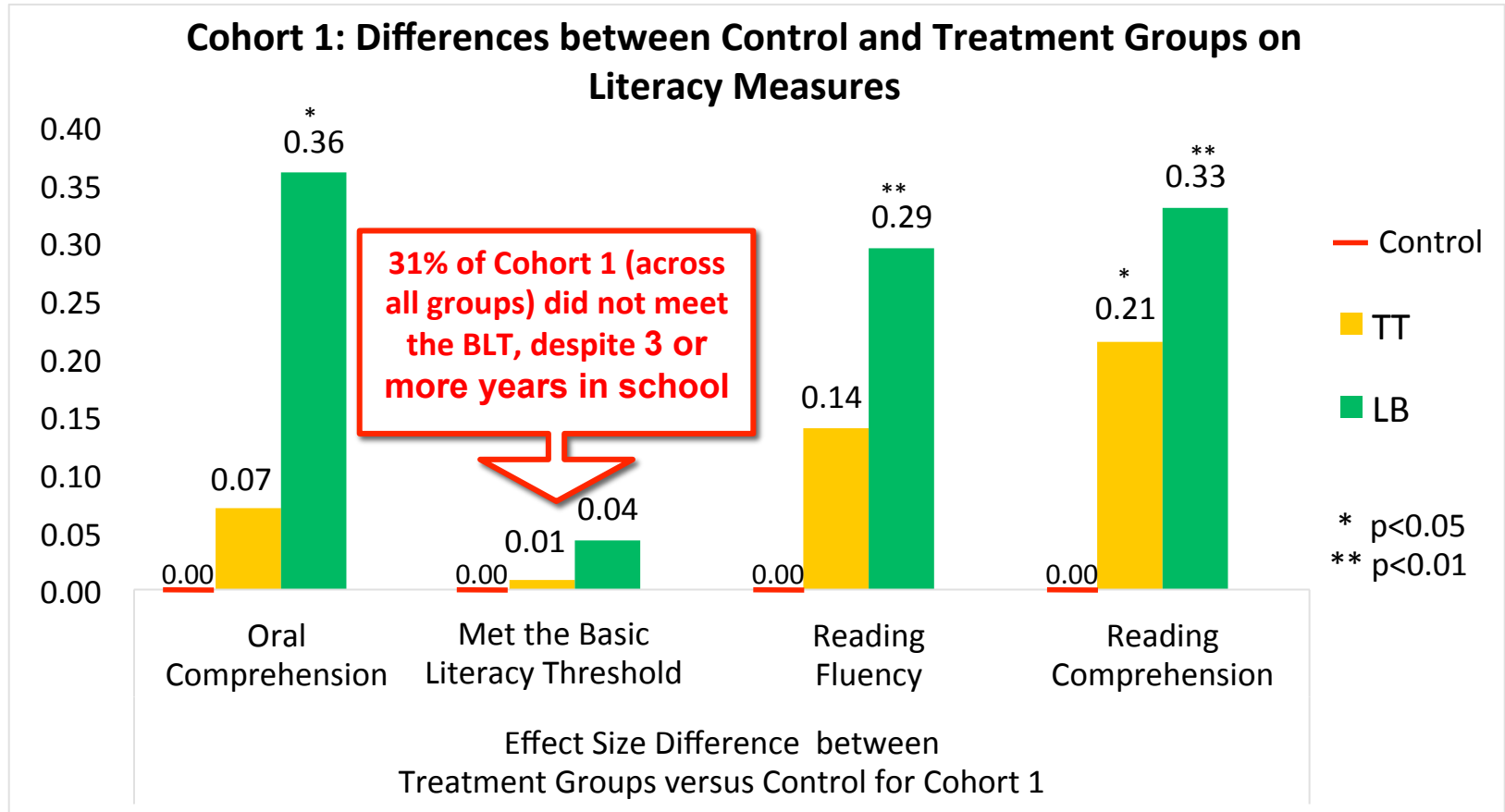
Literacy Boost in Rwanda: Groups & Activities

Group	LB Component(s)	Core Activities	Approach to Learning
Control	None	<ul style="list-style-type: none"> • 'Business as usual' • No SC / Umuhuza-led activities 	School-Only
TT	Teacher Training	<ul style="list-style-type: none"> • Teacher Training Sessions • School Book Banks 	School-Only (<i>enhanced</i>)
LB	Teacher Training + Community Action	<ul style="list-style-type: none"> • Teacher Training Sessions • School Book Banks • Village Book Banks • Reading Clubs • Reading Awareness Workshops • Reading Competitions & <i>Festivals</i> 	Life-wide Learning

Sample Overview: Baseline & Endline

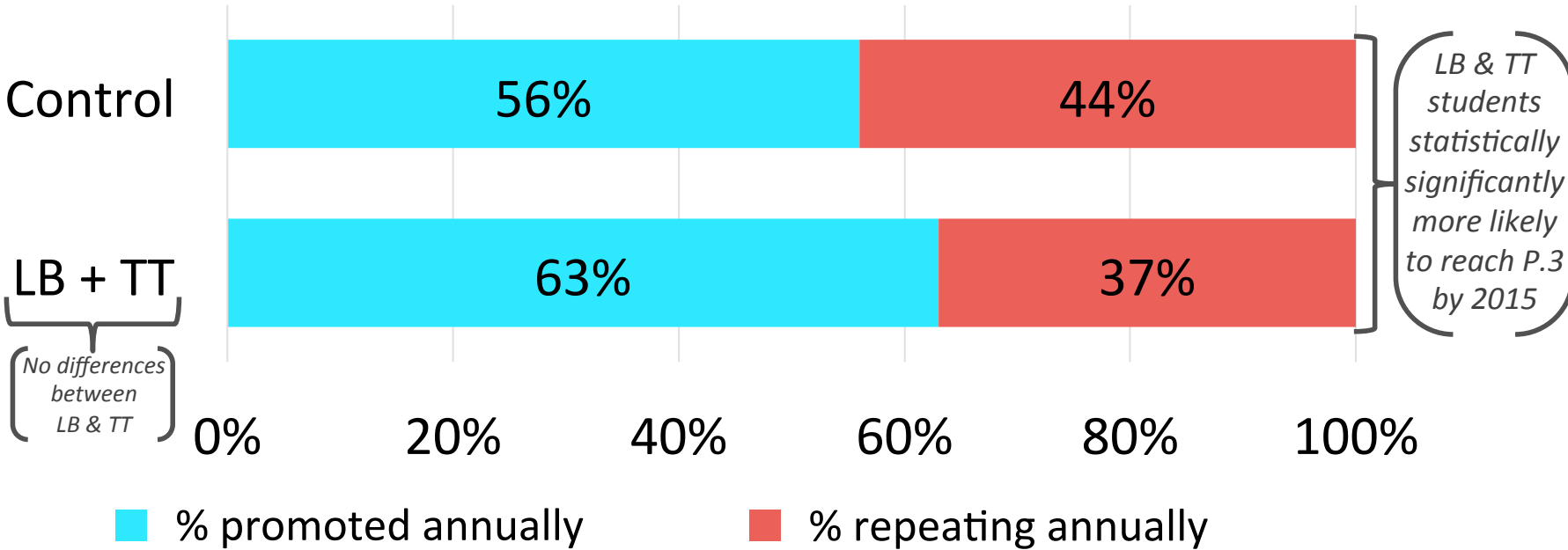
		Baseline (Year: 2013)	Endline (Year: 2015)	Longitudinal Or Cross-Sectional
Reading Assessment	Students: Cohort 1	2041	1668	longitudinal
Teacher Study	Teachers Surveyed	452	561	both
	Teachers Observed	42	42	cross-sectional
	Classrooms Photographs	--	95 schools ~1000 walls	--
Literacy Ecology Study	Families Surveyed	467	349	longitudinal
	Families Observed	Jolly's Family Flora's Family	Jolly's Family Flora's Family Marie's Family Daniel's Family	both

Cohort 1: Effect Size Differences for Literacy Skills

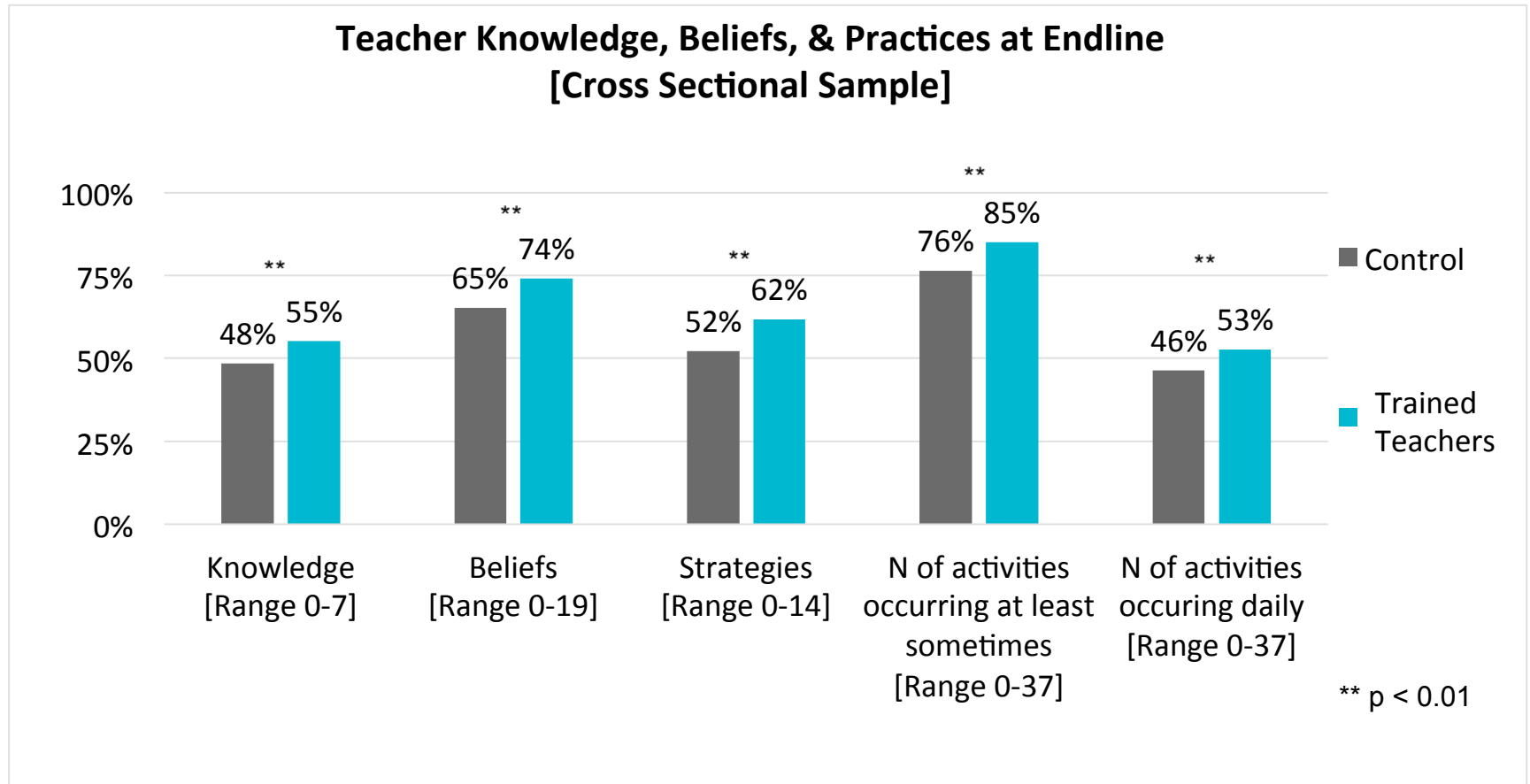


Findings: Early Primary Repetition & Promotion

Early Primary (P.1 - P.2 - P.3)
Annual Repetition & Promotion Rates



Findings: Teacher Knowledge, Beliefs, & Practices



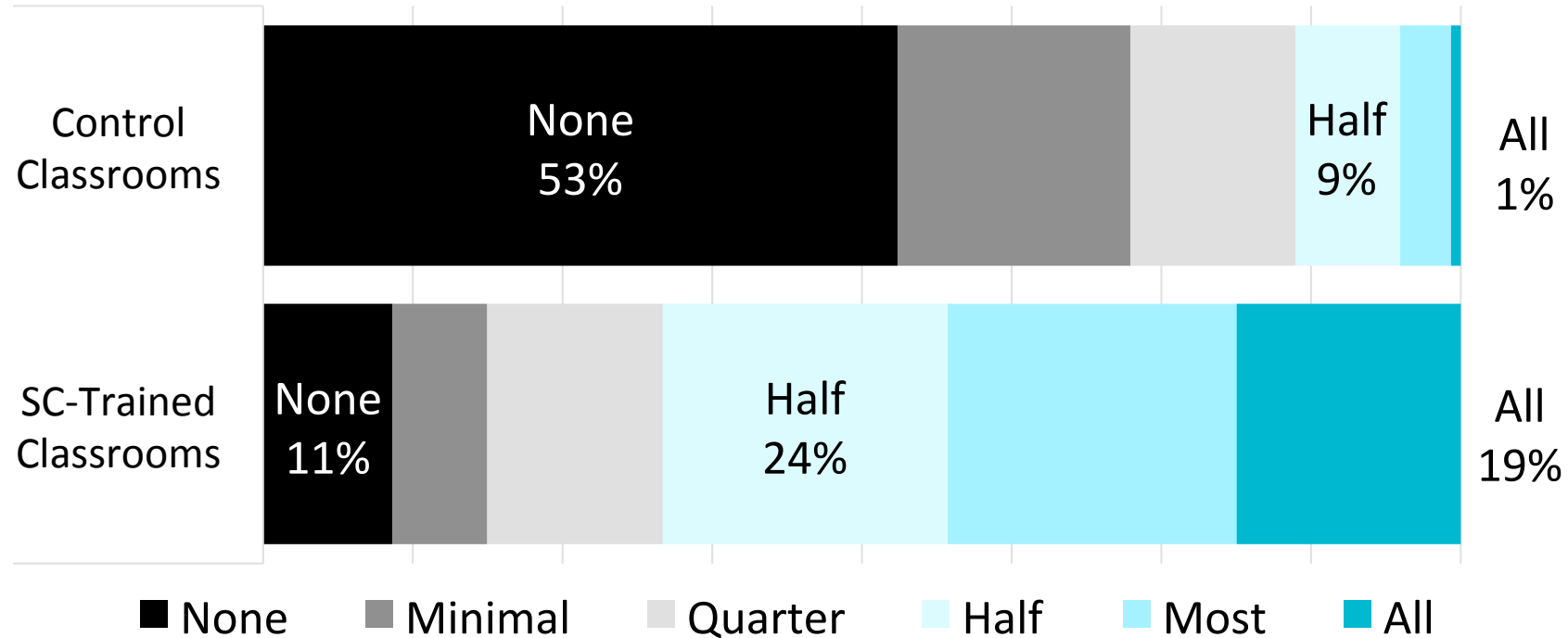
Note: The Trained teachers group includes teachers in both LB & TT sectors. All significant differences are between teachers in the Control group & the combined teachers in the LB & TT groups

Teacher Study: Classroom Print Coverage

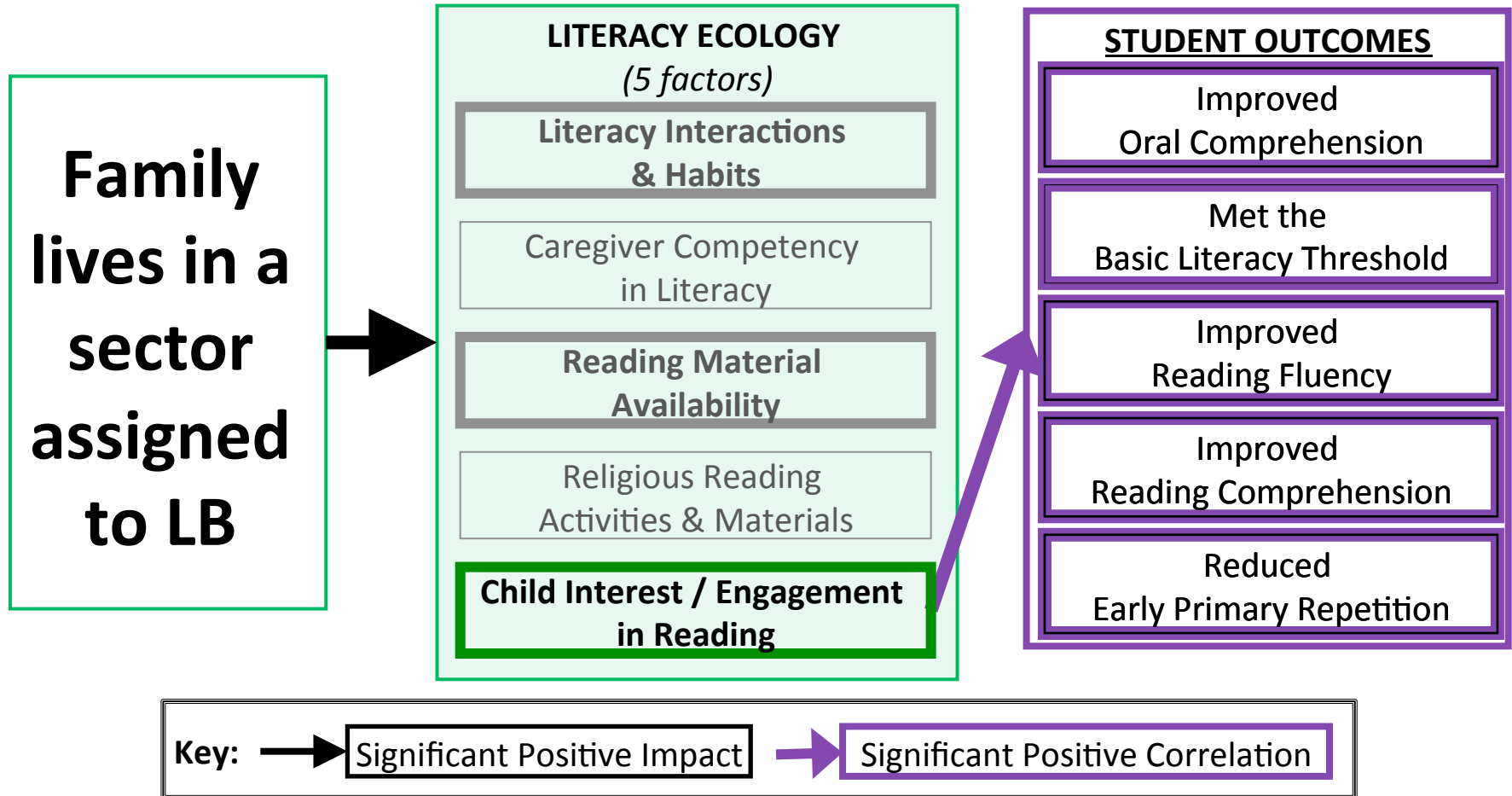


Findings: Classroom Wall Print Coverage

% of Classroom Walls Covered in Print by Treatment



LB Impact on the Literacy Ecology of the Home



Note: Other significant correlations between LE factors and student outcomes can be found in the full report

Evidence from Observations of the Literacy Ecology

LE Observation Quotes: Caregiver Perceptions

...why didn't you select Marie's elder sister? She is the one who is bright. **Marie is *Umuswa** at school.**
(Addressing a man standing next to him) **"She is *Umuswa*.** I don't know why she is the one they selected."

-- Marie's Father (2015)

**Umuswa*, a derogatory word in Kinyarwanda, does not have a perfect English equivalent. English words that near the meaning of *umuswa* include: dull, stupid, or intellectually disabled.

LE Observation Quotes: Marie's Self-Perception

Observer: *Why is reading important?*

Marie: **Knowing how to read makes you clever.**

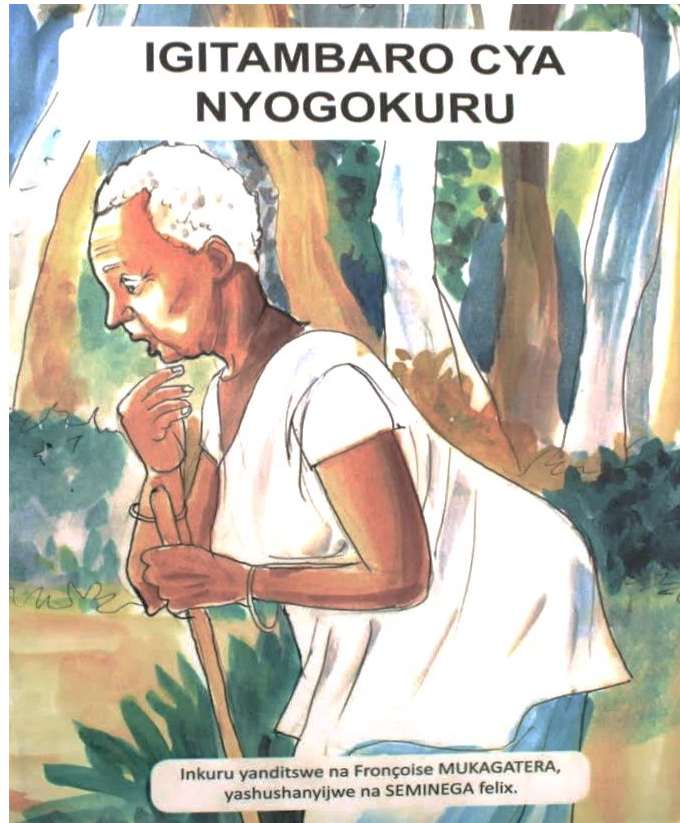
Observer: *Why it is important to be clever?*

Marie: **You stop being *Umuswa*.**

Observer: *What do you want to become when you finish school?*

Marie: **But I will not finish. I am *Umuswa*.**

LE Observation Quotes: Literacy Interactions



In the past, our children had nothing to read during holidays. Now, [Flora] has managed to borrow some books and reads many books with interesting and funny stories, but she does not really benefit from the stories otherwise. The children keep laughing when they are reading and we also laugh when they tell us about those stories.

-- Flora's Mother (2015)

LE Observation Quotes: Child Interest

At [Reading Clubs], we learn new things and when we reach at school, we are able to explain to other students who have difficulties. Students who attend [Reading Clubs] have improved their literacy skills. I love it when I am able to explain things to other students.



Photo Credit: Saima Malik

-- Flora (2015)

Concluding Thoughts



Photo Credit: E. Friedlander

QUESTIONS & DISCUSSION

The background of the slide features a photograph of three children in silhouette, looking upwards towards a bright, cloudy sky. The children are positioned in the lower-left quadrant of the frame. The sky is filled with soft, white clouds against a blue background. The overall mood is contemplative and hopeful.

For the full report, visit:

- Friedlander Research:

friedlanderresearch.org

- The Global ReadingNetwork:

globalreadingnetwork.net

- Save the Children Int'l- Rwanda:

rwanda.savethechildren.net

Thank you

For the complete impact evaluation of Literacy Boost in Rwanda, visit:

- Friedlander Research: friedlanderresearch.org/publications
- The Global Reading Network: globalreadingnetwork.net/publications-and-research
- Save the Children International – Rwanda: rwanda.savethechildren.net/resources

Or contact:

- Elliott Friedlander, Research Director, Stanford University: elliottf@stanford.edu / researchewf@gmail.com
- Claude Goldenberg, Principal Investigator, Stanford University: cgoldenber@stanford.edu
- Carol da Silva, Senior Advisor, Save the Children USA: cdasilva@savechildren.org

For more information about Save the Children, including Literacy Boost, visit:

- Save the Children International – Rwanda: rwanda.savethechildren.net/
- Save the Children UK: www.savethechildren.org.uk
- Save the Children USA: www.savethechildren.org

Appendix A

Research Study Background & Motivation

Children's Time Engaged in Schooling & Learning

Total Hours in a Year: [365 days * 24 hours per day] = 8760 hours per year
Annual Sleeping Time (Estimate): [365 days * 10 hours asleep] = 3650 sleeping hours
Annual Waking Time (Estimate): [8760 hours – 3650 hours] = **5110 waking hours**

Rwandan Primary School Days (2015): [5 days/week * 36 weeks] = 180 days per year
Daily Instructional Hours (Official): = 4 hours per day

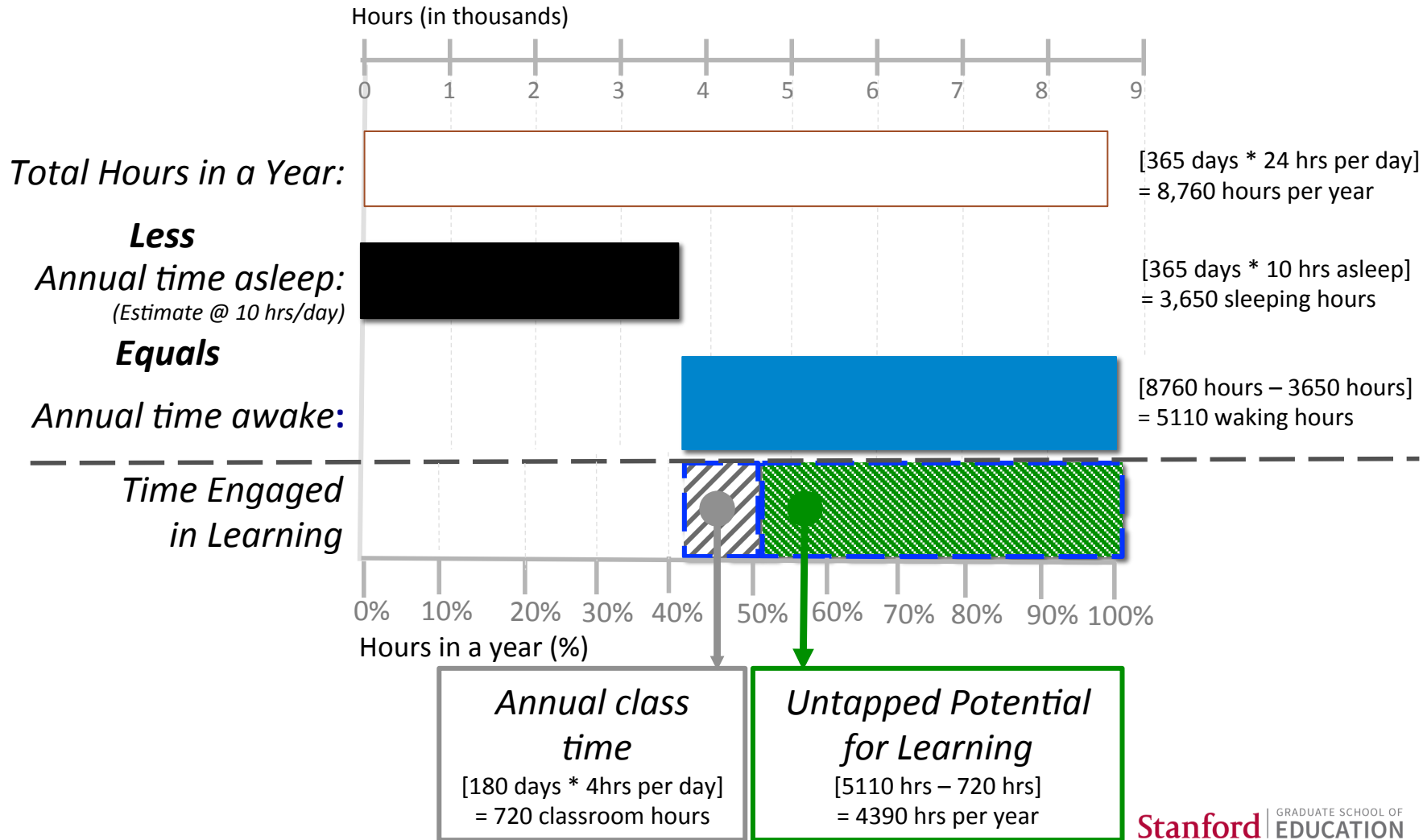
Annual Instructional Time: [180 days * 4 hours] = **720 instructional hours**

- *NOTE: **720 instructional hours** is an upper estimate of actual instructional hours. The actual number is likely lower due to various reasons, e.g. national & local holidays, random school closures, exam periods, teacher & student absences.*

Annual % of Child's Waking Year Dedicated to Instruction:
[**720 instructional hours** / **5110 waking hours**] = **14% of child's year in school**

Annual % of Child's Waking Year Unaccounted For:
[4390 non-instructional hours / **5110 waking hours**] = **86% not targeted for learning**

Children's Time Engaged in Schooling & Learning



Appendix B

Project Partnerships

Research Design

Research Questions

Literacy Boost in Rwanda Partners

Research Partners

▪ **Stanford University**

Students, Faculty, & Alumni including: Arshan, Nicole; Baker, Rachel; Cha, Kijoo; Dee, Thomas; Friedlander, Elliott; Goldenberg, Claude; Galloway, Catherine; Haertel, Edward; Klasik, Daniel; Malik, Saima; Mercado-Garcia, Diana; Raab, Erin; Sun, Angela; Zhou, Sen

▪ **Rwanda Education Board (REB)**

Co-Researcher: Janvier Gasana, Director General

▪ **Dr. Michael Tusiime**

Lecturer at the University of Rwanda – College of Education

Implementation Partners

- **Save the Children International**
- **Save the Children UK**
- **Save the Children US**
- **Umuhuza**

Funding Partners

- **Bernard & Irene Schwartz Foundation**
- **Comic Relief**
- **Isle of Man**
- **James Percy Foundation**
- **Jersey Overseas Committee**
- **Roy A. Hunt Foundation**
- **Private Donations**

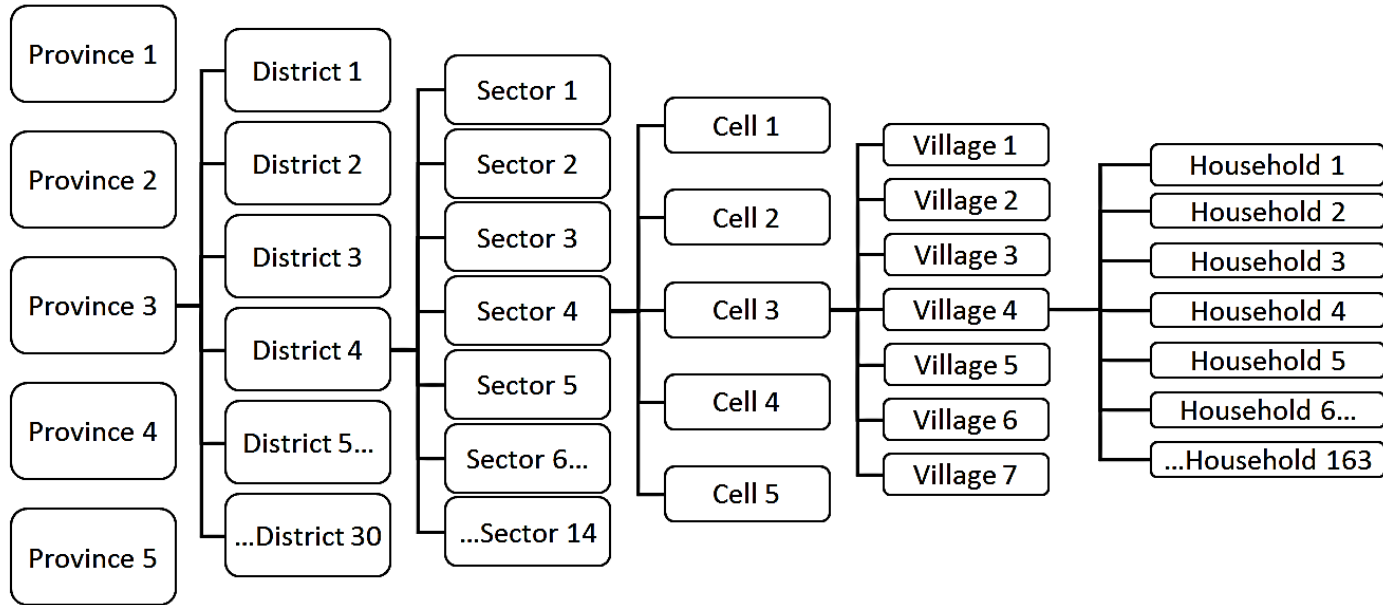
Ethical & Operational Oversight

- **Directorate of Science, Technology, & Research at the Rwanda Ministry of Education**
- **Rwanda National Ethics Committee**
- **Stanford Institutional Review Board**

Research Design: 3 Groups, 3 Phases

Group Name	CONTROL	TEACHER TRAINING ONLY	LITERACY BOOST
Group Abbreviation	Control	TT	LB
Phase 1 (2013): Setup	Project set up; baseline data collection; random assignment of 21 sectors to groups		
Phase 2 (2014-2015): Impact	--	Teacher Training Only	Teacher Training & Community Action
Phase 3 (2016-2017): Sustainability	Teacher Training & Community Action	Community Action Only	--

Generic Administrative Schematic of Rwanda



Total in Rwanda*	<u>Provinces</u>	<u>Districts</u>	<u>Sectors</u>	<u>Cells</u>	<u>Villages</u>	<u>Households</u>	<u>Residents</u>
	5	30	416	2,148	14,837	2,424,898	10,515,973
National Average	--	6 Districts per Province	14 Sectors per District	5 Cells per Sector	7 Villages per Cell	163 Households per Village	4.3 Residents per Household

*All data taken from the 4th Population & Housing Census (NISR & MINECOFIN, 2012)

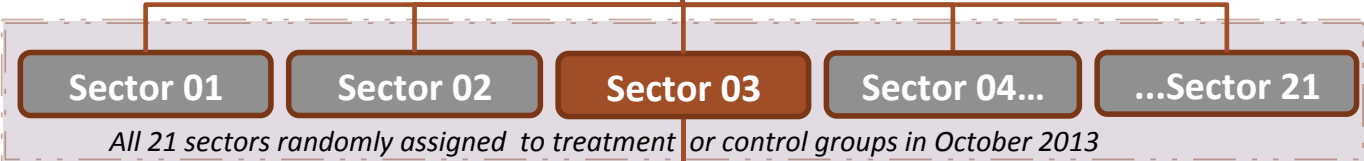
Administrative Schematic of Project District

Total in District

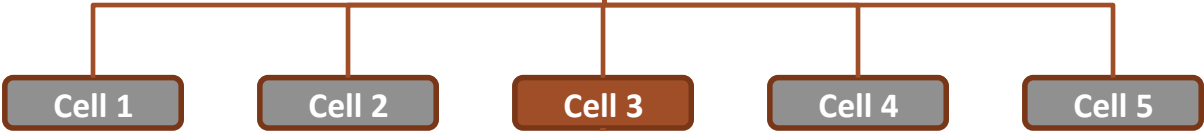
Districts: 1



Sectors: 21



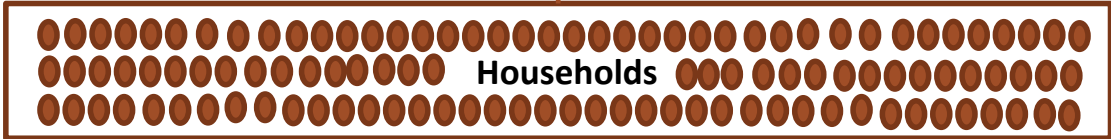
Cells: 109



Villages: 630



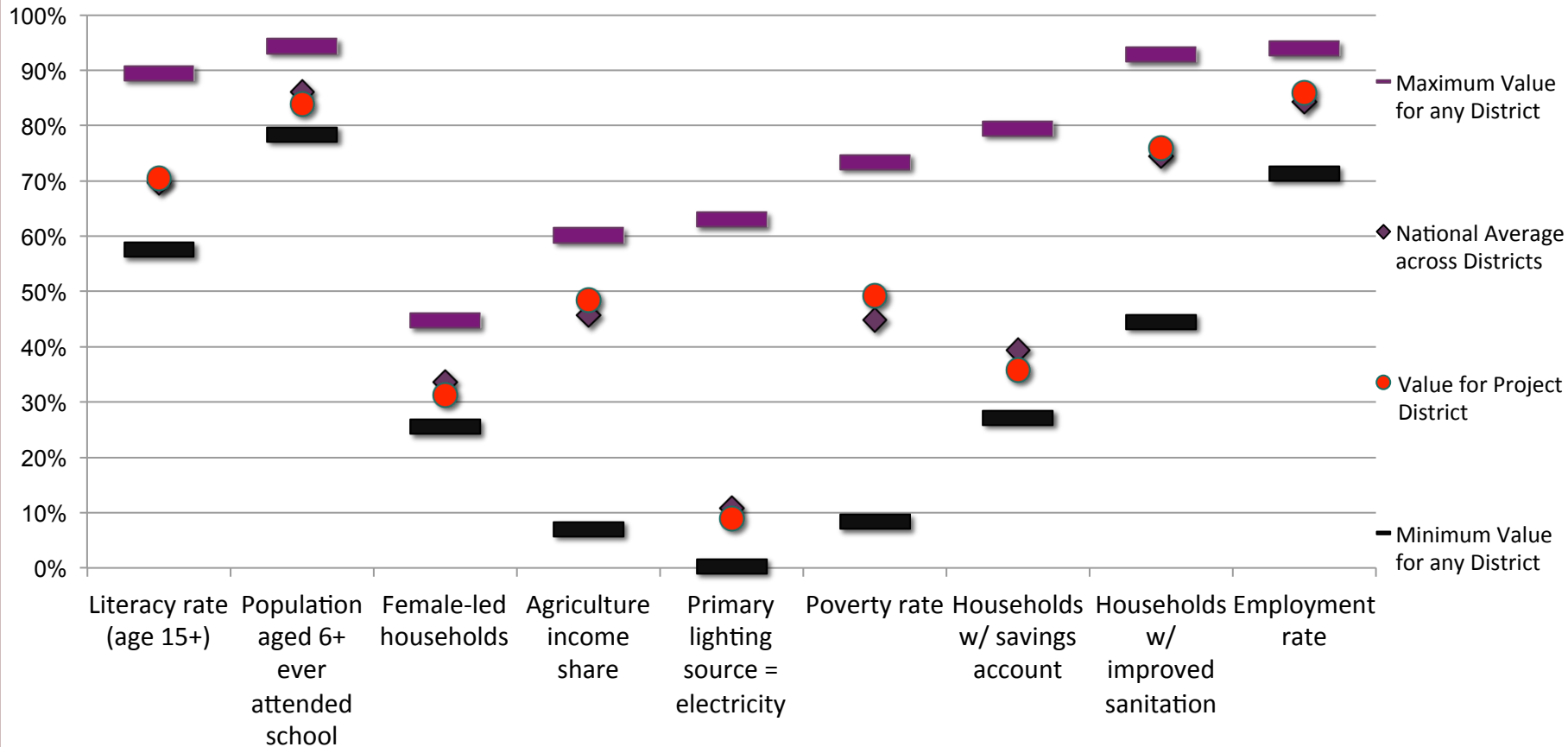
Households: 70,381



112 households / village --- 646 households / cell --- 3351 households / sector

Representativeness of the Project District

Comparing Rwanda's Districts on Select Education & Economic Indicators



*Data taken from EICV3, EICV4, and DHS 2014 surveys. For references, see Friedlander & Goldenberg (eds.) (2016).

Appendix C
Literacy Boost in Rwanda:
Treatment Groups,
Random Assignment
&
Research Questions

Detailed Research Questions by Sub-Study

■ Reading Assessment

1. What impact did TT and LB have on literacy skills?
2. What impact did TT and LB have on student promotion in early primary school?

■ Teacher Survey and Observation

1. How did Teacher Training impact teachers' knowledge, beliefs, & practices?
2. How did Teacher Training impact the classroom print environment?
3. Were teaching improvements related to reading achievement?

■ Literacy Ecology Survey & Observation

1. Did LB affect children's Literacy Ecologies (home environments)?
2. How were the Literacy Ecology factors related to reading achievement?
3. Is there evidence that Literacy Boost caused changes in the reading culture?

Detailed Sample Overview

Study			Baseline	Midline	Endline	N of Unique Participants	Total Collected
Reading Skills Study	Cohort 1: Students Assessed	N	2041	1712	1668	2041	5421
		Longitudinal: N (% of baseline)	-	1712 (84%)	1668 (82%)		
	Cohort 2: Students Assessed	N	-	-	1926	1926	1926
		Longitudinal : N (% of baseline)	-	-	-		
Teacher Study	Teachers Surveyed	N	452	-	561	750	1013
		Longitudinal : N (% of baseline)	-	-	263 (58%)		
	Teachers Observed	N	42	-	42	82	84
		Longitudinal : N (% of baseline)	-	-	2 (5%)		
Literacy Ecology Study	Families Surveyed	N	463	-	526	640	989
		Longitudinal : N (% of baseline)	-	-	349 (75%)		
	Families Observed	N	2 families / 14 days	-	4 families / 13 days	4 families	6 families / 27 days
		Longitudinal : N (% of baseline)	-	-	2 families (50%)		

Data Collection Tools Instruments

Tool	Development	Content
Reading Assessment	<ul style="list-style-type: none">Adapted in Kinyarwanda by Stanford & REB;Based on assessments by Save the Children US & RTI InternationalEnglish tasks added at midline	Sections include: background, home literacy activities; SES; program participation; phonological awareness; decoding; reading comprehension; reading fluency, etc.
Teacher Survey & Teacher Observation	<ul style="list-style-type: none">Created by Stanford	Measures the knowledge, beliefs, & practices identified in the Literacy Boost Teacher Training toolkit
Literacy Ecology Survey	<ul style="list-style-type: none">Created by Friedlander (2008)Adapted by Wiener (2010), &Adapted by Stanford, Save the Children & Umuhuza for Rwanda	Items measure knowledge, beliefs, and practices related to literacy in homes & communities, & participation in project activities

Section E

Reading Assessment: Analysis & Findings

Student Outcome Measures

Outcomes	Scale	Measurement
Student reached Primary 3	Binary	Observation by assessors
Oral Comprehension	Standardized Composite	a) Productive Vocabulary b) Listening Comprehension
Student Met the Basic Literacy Threshold (BLT)	Binary	BLT met if all three criteria met: a) Letter Identification ≥ 18 out of 24 letters b) Dictation Score ≥ 1 c) Decoding Score ≥ 1
Reading Fluency	Standardized Composite	Words correctly read per minute on 3 reading passages (P1, P2/P3, P4)
Reading Comprehension	Standardized Composite	a) Cloze b) Reading Comprehension

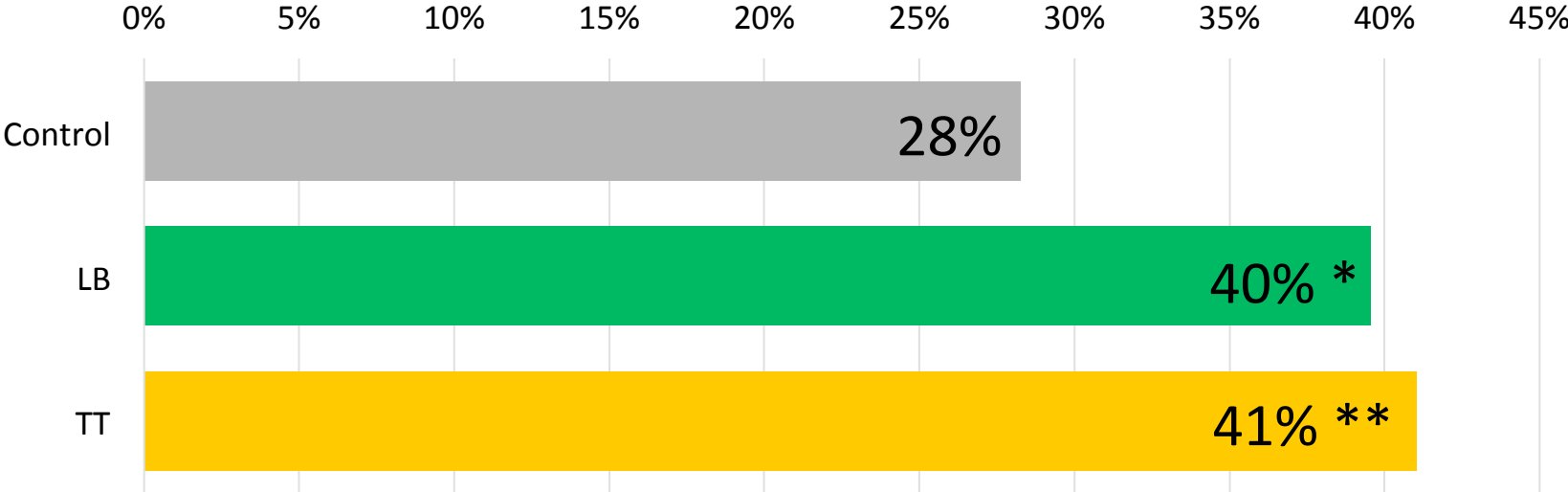
Calculating Repetition & Promotion Rates

<i>Column A</i>	<i>Column B</i>	<i>Column C</i>	<i>Column D</i>	<i>Column E</i>	<i>Column F</i>
Group	N assessed at baseline in P.1 (Year 0)	N assessed at endline in P.3 (Year 2)	Promotion rate over 2 years [C/B]	Annual Promotion Rate \sqrt{D}	Annual Repetition Rate [$100\% - E$]
Control Group	518	164	31.7%	56.3%	43.7%
TT Group	545	221	40.1%	63.3%	36.7%
LB Group	602	238	39.5%	62.8%	37.2%
TT & LB groups	1147	459	40.0%	63.2%	36.8%
Total Sample	1665 [†]	623	37.4%	61.2%	38.8%

[†] The total analytic sample is 1668 at endline. Three of these students were reported to be in P.4. We exclude them from our analysis, as we cannot be sure whether they skipped a year of Primary, or whether the assessor made an error in the data entry, or some other issue. The loss of 3 students will not affect the conclusions in any substantial way.

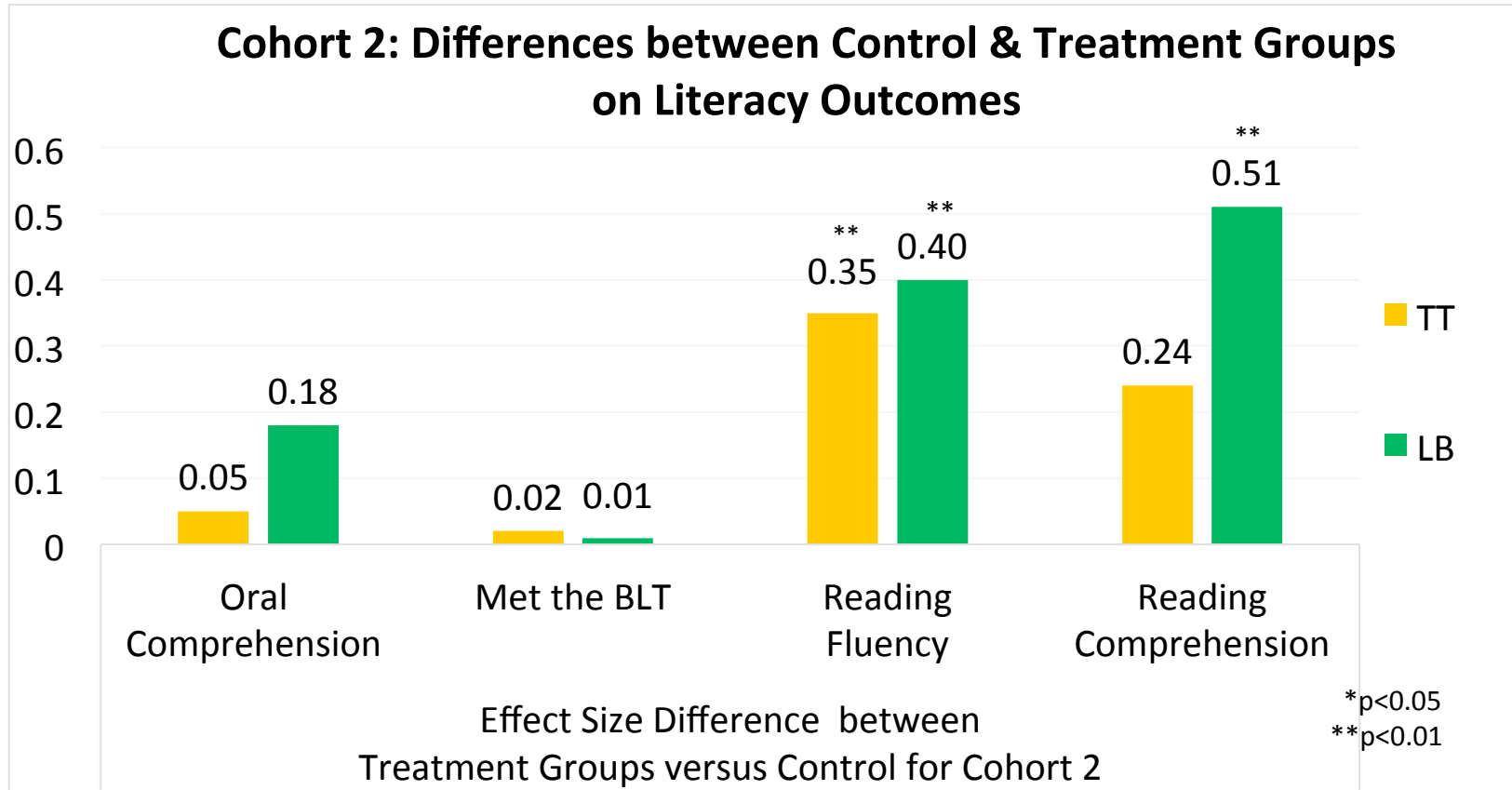
Findings: Students who Reached Primary 3

Cohort 1: Predicted Percentage of Students Promoted to P.3 in 2015



* Differences between Control and LB groups significant at $p < 0.05$; ** Differences between Control and TT groups significant at $p < 0.01$. No significant difference existed between LB and TT groups. Note: These data were collected by assessors who collected each child individually from a P.1, P.2, or P.3 classroom. Predicted percentages account for the hierarchical nature of the data and control for differences in baseline Phonological Awareness.

Cohort 2: Effect Size Differences for Literacy Skills



The * or ** symbol above specific bars indicate **significant difference from the Control group**. Analyses control for baseline phonological awareness

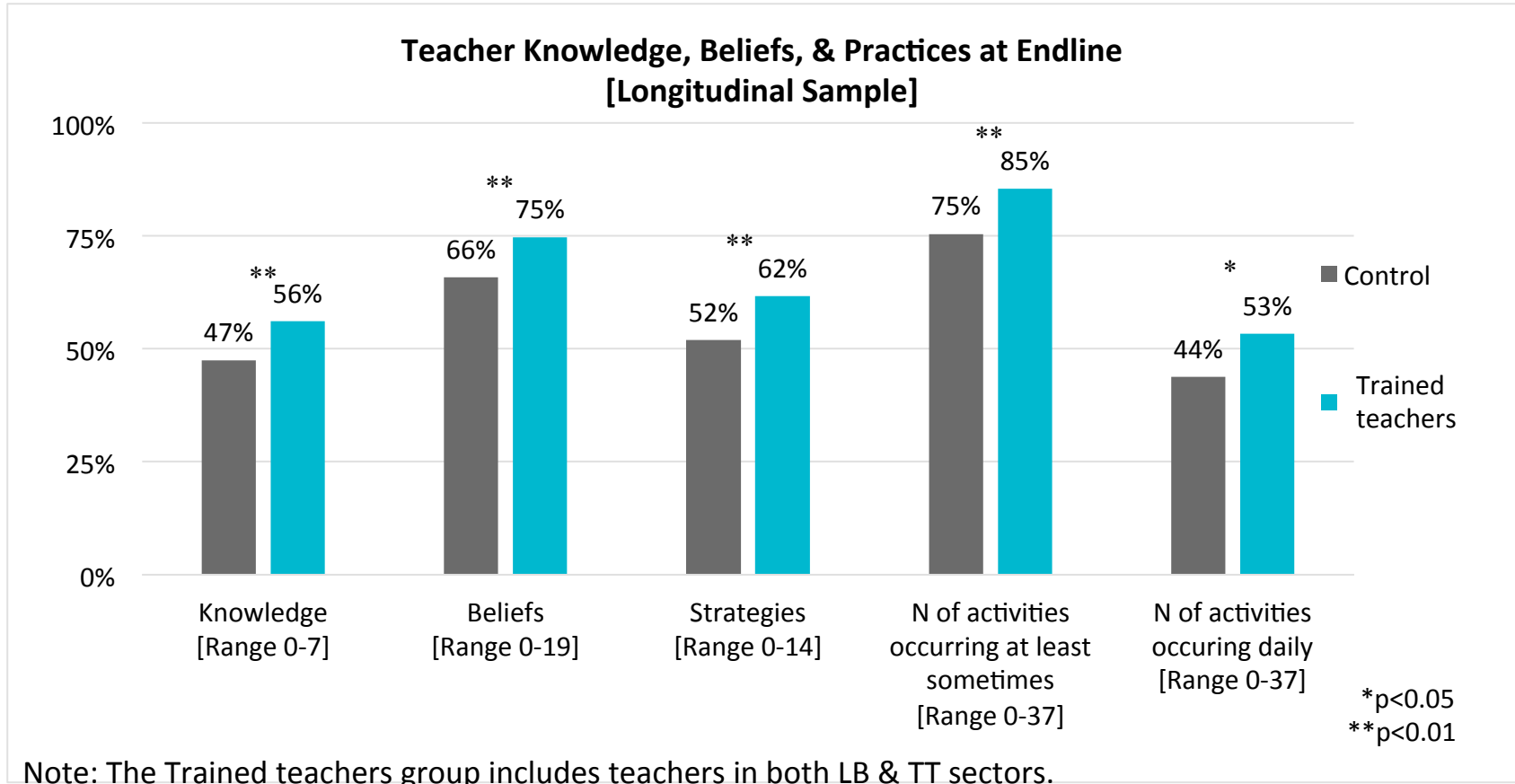
Section F

Teacher Study: Analysis & Findings

Outcome Measures: Teacher Study

Teacher Survey Responses	Example item
Teacher Content Knowledge	Identify the number of syllables or phonemes in a word
Teacher Literacy Learning Beliefs	Identify each instance of a resource that would help students become better readers
Identification of Reading Strategies	Identify “teaching students to summarize” as a strategy to improve reading comprehension
N of Activities Occurring “Sometimes” or “Daily”	Number of recommended activities teacher reports using to teach reading at least sometimes
N of Activities Occurring “Daily”	Number of recommended activities teacher reports using to teach reading daily

Findings: Teacher Knowledge, Beliefs, & Practices



All significant differences are between teachers in the Control group & the combined teachers in the LB & TT groups

Classroom Wall Print Coverage by Primary Level

Classroom Wall Covered in Print in Control & Treatment Classrooms by Primary Level



Section G

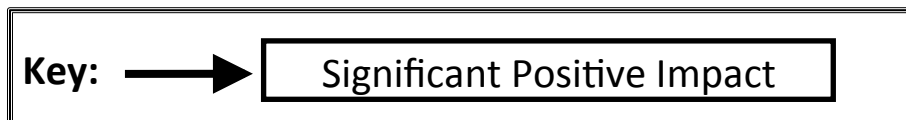
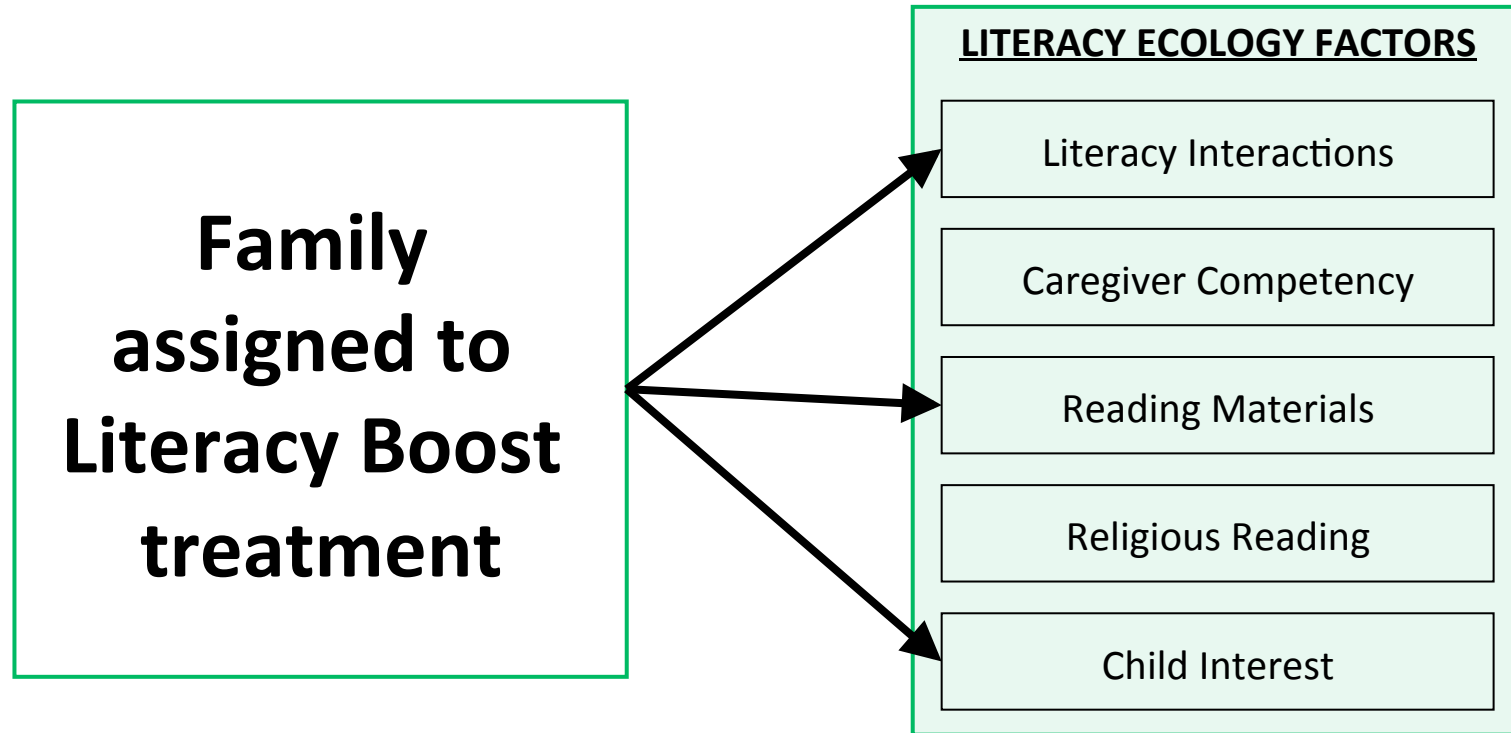
Literacy Ecology Survey & Observation: Analysis & Findings

5 Factors of the Literacy Ecology in Rural Rwanda

Factor Name	What the Factor Measures
Literacy Interactions	Characteristics, habits, and interactions related to literacy development in the home
Caregiver's Competency in Literacy	Caregiver's reading & writing abilities
Reading Materials	Availability of different reading materials in homes & villages
Religious Reading Activities	Religious materials & religious activities that involve literacy
Child Interest / Engagement	Caregiver perception of child's interest & engagement in literacy

For more on the Literacy Ecology, see Friedlander, E. (2015). *Towards Learning For All: Understanding the literacy ecology of rural Rwanda*. Doctoral Dissertation. Stanford, CA: Stanford University.

LB Impact on the Literacy Ecology of the Home



LE Observation Quotes: Reading Materials

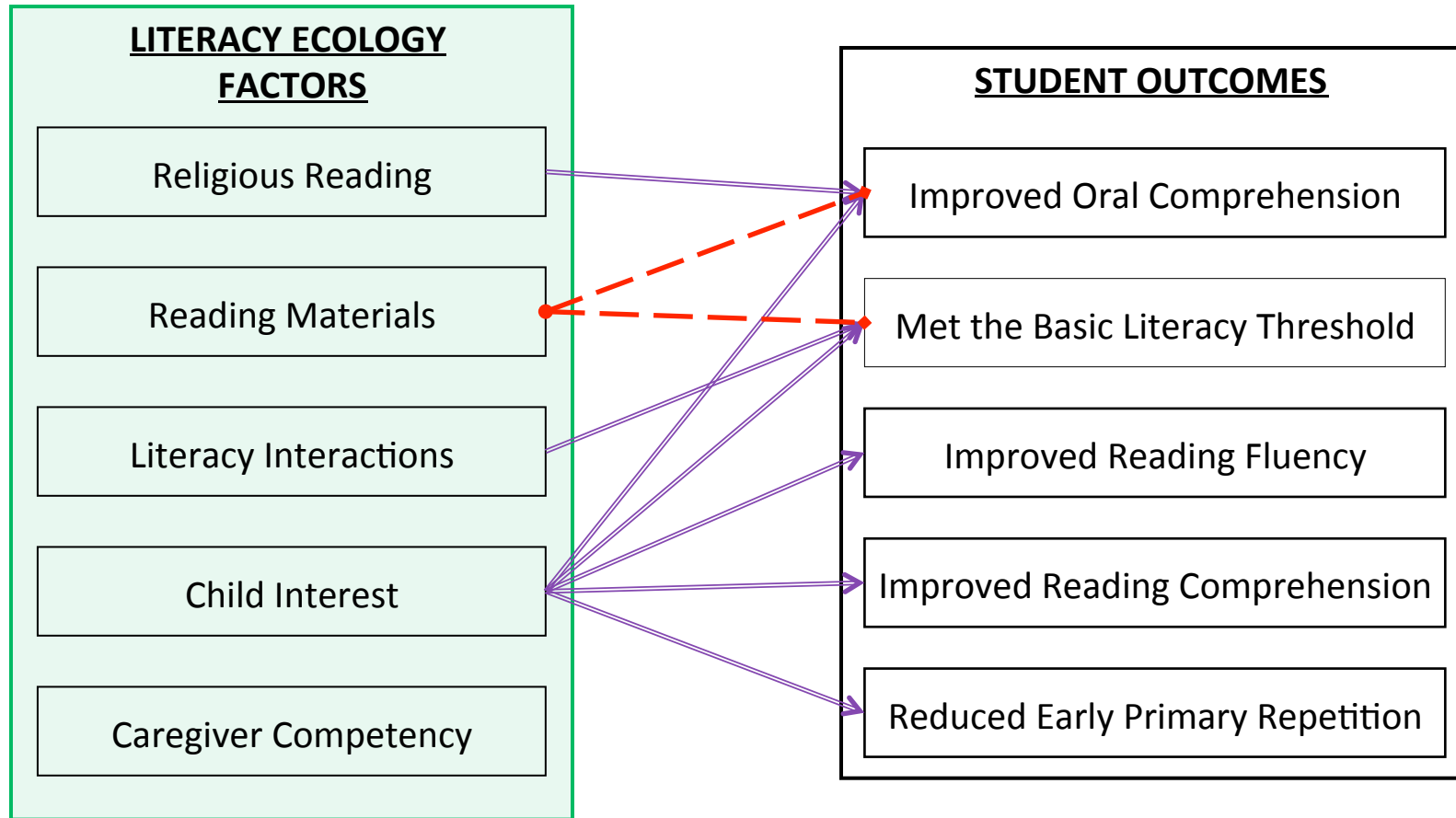


Even if they had ample time to rest, they would not have books to read. If books were available, she would be reading after bringing water.

-- Flora's Mother (2013)



Literacy Ecology Factors & Student Outcomes



LE Observation Quotes: Use of Reading Materials

Availability of literacy materials will not foster literacy if parents don't encourage their children to read. I know a rich family that have sufficient reading materials but do not encourage children to read... it is not the availability of materials but rather, encouraging children to use them.

-- Primary School Teacher (2013)

Appendix G

Recommendations

Findings & Recommendations

#	Finding	Possible ways to address or build on the finding
1	LB had positive effects on children's literacy skills & promotion rates.	Incorporate LB approaches in pre-service & in-service teacher training, parent support, and community activities.
2	Learners face diverse obstacles both within and outside of schools in their learning.	<p>REB work with other government ministries, NGOs, & others should work to provide learning opportunities outside of school.</p> <p>Example 1: Work with MOH to place storybooks in every clinic.</p> <p>Example 2: Work with MINEDUC and MIGEPROF to expand community library activities and supply of materials to support reading outside school</p> <p>Example 3: Work with MINALOC to incorporate reading support in performance contracts at the district, village, and household levels</p>
3	31% of students cannot read & 44% annual repetition rates in lower primary	<p>Research the issues preventing children from acquiring basic skills and preventing normal promotion is needed, including cost analysis of early primary repetition and drop-out.</p> <p>Data on possible causes both within & outside of school may lead to better solutions.</p>