Abstract Title Page

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Title: Life-wide Learning and Early Reading Development in Twelve African and Asian Sites

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Abstract Body

Limit 4 pages single-spaced.

Background / Context:

Description of prior research and its intellectual context.

For decades, the international education community has focused on schools as the primary vehicle of learning (UNESCO, 2012). However, learning assessments in dozens of developing nations show that repeated attempts to affect student learning in schools have largely failed (Pritchett, 2013; Samoff, 2012). Because students with perfect attendance in low-resource settings spend less than 25 percent of their time in a classroom (Dowd, Friedlander, & Guajardo, 2012), even if educational quality is excellent, focusing only on school-bound factors is inadequate to optimize learning. Reading programs should focus on engaging students both inside school and outside of school. A focus on life-wide learning refers to children's engagement in enjoyable, cognitively-demanding literacy-related activities not only while in school but also throughout the rest of the day, every day. In low-resource contexts, life-wide learning opportunities are afforded through the enabling environments of both the home and the community. At home, this is characterized by the diversity of reading materials—from textbooks, newspapers, religious texts and magazines, to storybooks and comics—as well as familial habits that support literacy acquisition, such as reading and talking together, and helping with homework. Outside of the home, the enabling environment includes opportunities to participate in community activities such as reading in groups or pairs or borrowing from a local mini-library to practice reading.

Research from the developed world clearly points to the critical role that an enabling environment plays in children's reading development. Specifically, researchers have found that the home literacy environment and opportunities to practice reading outside of school are positively correlated with children's reading growth (Park, 2008; National Early Literacy Panel, 2008). Based on this research, Save the Children (SC) designed Literacy Boost in 2008 to improve reading pedagogy in the classroom and to engage students, families, and communities in learning activities outside of school. In 2012, World Vision (WV) joined SC to reach more children with this intervention. Using data from 12 sites, this article investigates how home and community enabling environments contribute to children's learning.

Purpose / Objective / Research Question / Focus of Study:

Description of the focus of the research.

This paper delves into the relationships between children's reading abilities and the enabling environment for learning in the context of Save the Children's Literacy Boost program. We conceptualize the enabling environment at a micro level, with two components: 1. the home literacy environment, represented by reading materials and habits at home, and 2. the community learning environment, represented by community reading activities. Specifically, the research hypotheses explored are:

H1: At baseline, the enabling environment of the home, specifically reading materials and literacy habits, are positively associated with students' reading achievement, controlling for relevant demographic and school characteristics.

H2: At endline, the amount of community reading activities in which a student participates is positively associated with students' reading gains, controlling for baseline reading achievement and HLE, as well as relevant demographic and school characteristics.

Setting:
Description of the research location.

Data for this cross-country analysis comes from schools in Bangladesh, Burundi, Ethiopia, Indonesia, Malawi, the Philippines, and Rwanda where Save the Children and World Vision have partnered with teachers, administrators, and communities to implement Literacy Boost.

Population / Participants / Subjects:
Description of the participants in the study: who, how many, key features, or characteristics.

The sample for this cross-country analysis consists of 6,874 students in grades 1-4 from 12 different Literacy Boost project sites around the world, including East Africa (Malawi, Rwanda, Burundi, and Ethiopia), South Asia (Bangladesh), and Southeast Asia (Indonesia and the Philippines). Approximately half of the sample in each site consists of students who attended Literacy Boost program schools, while the remaining students attended schools that did not receive Literacy Boost, thus serving as a comparison group for the study. Fifty percent of the sample is female, and the average baseline age of students in the sample is 8.4 years. With the exception of the Philippines study and one of the Indonesia studies, all of the studies took place in rural areas. The participants are from under-resourced home and school environments given the contexts in which Save the Children World Vision Work in.

(Please insert Table 1 here)

Intervention / Program / Practice:
Description of the intervention, program, or practice, including details of administration and duration.

Save the Children's Literacy Boost program was developed in 2008 to address the crisis of low literacy skills that was observed in the contexts where Save the Children was working. Today, Literacy Boost reaches over 1.5 million children in 32 countries, often in multiple sites within a country. In 2012, the organization formed a partnership with World Vision, leading to the scale-up of Literacy Boost to 10 World Vision sites over three years.

Literacy Boost targets primary school-age children, their teachers, parents, and communities to develop children's reading skills both inside and outside of school, with the ultimate goal of improving children's reading comprehension. The program consists of three main components adapted to fit the local context:

1. In-service teacher training for primary-school teachers via monthly training sessions that focus on best practices in reading pedagogy,
2. Community Action programs that establish book banks and reading camps for children and run reading awareness workshops for parents and community leaders, and
3. Regular reading assessments that measure children's reading skills as well as key dimensions of equity, including socioeconomic status and the level of exposure children have to literacy materials and activities in the home. The assessments help program staff

evaluate children's progress and target those who are struggling to improve their reading skills.

Research Design:
Description of the research design.

The data comes from an experimental or quasi-experimental design depending on the site. In sites where an experimental design was used, clusters of schools were randomly assigned to treatment or control. Clusters assigned to treatment-approximately half- received the Literacy Boost (LB) intervention and the other half were assigned to the control group where the children continued receiving the Ministry of Education's early grade reading approach. In sites where a quasi-experimental design was used, comparison schools were selected based on documented similarities amongst the students in intervention and comparison schools as urbanicity, school type, and average family income. In all included datasets, baseline analyses show few, if any, significant differences between treatment and comparison groups. Students in intervention and control/comparison groups were assessed at two different points in time to determine the literacy gains of children.

Data Collection and Analysis:
Description of the methods for collecting and analyzing data.

Reading assessment, Home Literacy Environment (HLE) and background data were collected at baseline (prior to program implementation) and endline (at the end of program implementation). The reading skills assessed through the reading assessment, and presented in this analysis, are the number of letters a student correctly identified, the words correctly read in a minute by the student, and the number of reading comprehension questions that the student answered correctly. The questions on home literacy environment roughly correspond to the five dimensions of the HLE put forth by Hess and Holloway (1984) and include questions on reading materials present in the home and reading interactions with different family members. Additionally, students were asked about their participation in specific LB activities, including: a) had a Reading Buddy, b) borrowed books from a Book Bank, c) attended a Reading Camp, d) participated in a Make-and-Take activity, and e) participated in a Read-A-Thon.

To investigate our two research hypotheses, we fit two sets of multilevel regression models to estimate the influence of the home and community enabling environments on children's reading skills. We use the following general models to test these hypotheses[1]:
Model 1: $LIT_{ij} = \gamma_{00} + \gamma_{10}ReadMat_{ij} + \gamma_{20}Habits_{ij} + \gamma_{30}LB_j + X'_{ij} + W'_j + e_{ij} + u_{0j}$

Model 1 is fit separately for each site. In it, LIT_{ij} represents literacy scores at baseline for student *i* in school *j*, $ReadMat_{ij}$ and $Habits_{ij}$ represent the two indices of HLE described above, LB_j indicates whether a student was in a school that was assigned to the Literacy Boost group, X'_{ij} is a vector of student-level covariates and W'_j represents a vector of school-level controls. The error term consists of u_j, school-level random effects, and e_{ij}, unobserved student ability or

[1]Individual and school level covariates vary across sites due to differences in the data available in each site. For complete country-specific models, contact the authors.

characteristics. Standard errors are clustered at the school level. The coefficients of interest, γ_{10} and γ_{20}, capture the relationship between children's reading abilities prior to the intervention and each of the two HLE indices.

Model 2: $LITgain_{ij} = \gamma_{00} + \gamma_{10}ReadMat_{ij} + \gamma_{20}Habits_{ij} + \gamma_{30}LB_j + \gamma_{40}CMTY_{ij} + X'_{ij} + W'_j + e_{ij} + u_{0j}$

To investigate H2, Model 2 explores the relationship between reading gains ($LITgain_{ij}$, the change in scores for student *i* in school *j*) and participation in Literacy Boost community activities. The coefficient of interest, γ_{40}, describes the association between reading gains and the percentage of community activities in which a student participated ($CMTY_{ij}$), while controlling for the baseline reading scores, HLE, other student- and school-level characteristics, and the assignment to treatment (LB_j). As Literacy Boost students are the only ones who participated in the community activities or attended classes taught by teachers trained in Literacy Boost methodology, comparison students are assigned a value of 0 for both LB_j and $CMTY_{ij}$ to serve as the counterfactual. This model is also fit separately for each site, with school-level random effects and standard errors clustered at the school level.

Findings / Results:

Description of the main findings with specific details.

Analyses reveal 1) a modest but consistent relationship between students' home literacy environments and their reading scores with statistically significant positive effect sizes ranging from 0.01 to 0.30, and 2) a strong relationship between reading gains and participation in community reading activities with effect sizes ranging from 0.2 to 1.13.

(Please insert Table 2 here)

Conclusions:

Description of conclusions, recommendations, and limitations based on findings.

The results of this paper suggest that interventions should pay greater attention to home and community learning environments. Additionally, future research should aim to tease apart the impact of particular elements of effective life-wide learning interventions through a focus on collecting detailed implementation data, exploring reading skill development in low-resource settings qualitatively, and studying how home and community learning environment interventions differ in effectiveness across different low-resource settings.

Appendices

Not included in page count.

Appendix A. References

References are to be in APA version 6 format.

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Appendix B. Tables and Figures

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Table 1. Sample Descriptive Statistics

Country – Site	Program Year	Target Grade	N Schools	N Students	% LB	% Female	Age (average)	Duration (months)
Bangladesh-SC	2014	2	53	789	32%	50%	8.5	22
Burundi-WV	2013	3	28	395	51%	51%	9.2	24
Ethiopia Site 1-WV	2013	3	36	599	45%	49%	10.1	Region A:12 Region B: 15
Ethiopia Site 2-SC	2012	3	25	336	67%	49%	10.8	18
Indonesia Site 1-SC	2012	3	36	581	57%	48%	7.5	15
Indonesia Site 2-SC	2013	2	35	465	52%	51%	6.7	22
Indonesia Site 3-SC	2013	1	35	582	58%	50%	7.8	9
Malawi Site 1-SC	2013	3	30	600	67%	49%	8.9	10
Malawi Site 2-WV	2014	4	30	487	48%	49%	10.6	30
Philippines-SC	2014	2	2	754	56%	50%	7.4	18
Rwanda Site 1-WV	2013	3	29	459	45%	49%	7.8	30
Rwanda Site 2-SC	2015	2	85	827	41%	50%	7.7	15 to 25

Table 2. Correlation between HLE indices and Significant Effect Sizes for H1 and H2.

Country	Correlation between HLE indices	Outcome	H1: Home enabling environment predicting baseline reading scores		H2: Community enabling environment predicting endline reading gains
			Reading Habits Index[2]	Reading Materials Index	
Bangladesh	0.29***	Letters		0.10***	
		Fluency			0.53**
		Comprehension			0.60*
Burundi	0.24***	Letters		0.08*	
		Fluency			
		Comprehension	0.02*		
Ethiopia Site 1	0.21***	Letters		0.09*	
		Fluency		0.11*	0.82***
		Comprehension			0.70***
Ethiopia Site 2	0.10**	Letters	0.03*		0.22*
		Fluency			0.50***
		Comprehension			0.50***
Indonesia Site 1	0.35***	Letters			0.20*
		Fluency			0.30*
		Comprehension			0.40***
Indonesia Site 2	0.27***	Letters	0.02*		
		Fluency			
		Comprehension	0.05***		
Indonesia Site 3	0.39***	Letters			0.40**
		Fluency			0.52*
		Comprehension			1.13***
Malawi Site 1	0.48***	Letters	0.30***		
		Fluency	0.28***		0.42**
		Comprehension			0.34*
Malawi Site 2	0.32***	Letters			
		Fluency			
		Comprehension			
Philippines	0.25***	Letters	-0.03*	0.10*	
		Fluency	-0.06***	0.09**	
		Comprehension	-0.04***	0.07*	
Rwanda Site 1	0	Letters		0.10*	0.27*
		Fluency			0.49**
		Comprehension			0.36**
Rwanda Site 2	0.30***	Letters	0.01*		0.36**
		Fluency	0.02*		0.43***
		Comprehension	0.02***		0.62***

Letters = % of letters correctly identified; Fluency = words correctly read per minute; Comprehension = % of reading comprehension questions correctly answered.
* = significant at $p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

[2] Note that as the materials index is standardized and the reading habits index is in units of family members' interactions, they are not strictly comparable side by side in this table.