

Individual Paper Submission for SREE 2018

Abstract for Evaluation of *Amazonía Lee* Reading Intervention in Peru

Background

Countries in Latin America and the Caribbean have made progress in increasing primary school enrollment and completion among the very poor. However, challenges in improving reading persist. This study will contribute to the evidence base on what works to improve early-grade reading skills by evaluating an early reading program implemented in two departments of the Amazon region of Peru: Ucayali and San Martín.

Intervention

Amazonía Lee has four main components. First, the capacity development component aimed to strengthen pedagogical skills and instructional capabilities of teachers, principals, and regional specialists. The main mechanism is conducting teacher training workshops based on the *balanced* approach. The workshops are targeted to first, second, and third grade teachers and aim to improve reading instruction. The *balanced approach* combines evidenced-based best practice pedagogical skills with the *communicative textual* approach to reading supported by the Peruvian Ministry of Education. This component also uses in-class teacher coaching and demonstration classes, teacher study groups, leadership training, and improvement and delivery of materials.

The following three components were originally envisioned to be implemented at the regional level in both departments. However, during the period of the study they were only implemented in the schools implementing *Amazonía Lee*. First, the community engagement component aimed to promote the active engagement of the educational community in support of student learning. Second, a regional assessment system aimed to monitor student achievement and to develop local capacity related to these assessments. Last, a teacher non-monetary incentive system aimed to motivate teachers to improve student learning.

Research Question and Design

The evaluation addressed the following central question:

- What was the impact of *Amazonía Lee* programs on early-grade reading and other intermediate outcomes relative to other prevailing practices and programs?

We randomly assigned eligible schools in Ucayali and San Martín to one of two groups: the treatment group was offered all program components of *Amazonía Lee*, and the control group was not offered this program. The evaluation sample includes 70 schools in Ucayali and 200 in San Martín. In each region, half of the schools were randomly assigned to the treatment group and half to the control group.

In Ucayali, control schools received the usual services the Ministry of Education provides. In San Martín, a majority of the control schools received additional assistance in the form of a program known as *Soporte Pedagógico* (Pedagogical Support), a Ministry of Education initiative that aims to improve student learning in all content areas. *Soporte Pedagógico* aims to strengthen teachers' skills, provide after-school tutoring for at-risk students, deliver educational materials, and improving the school management capacity. Thus, in San Martín, we are comparing outcomes from schools receiving the *Amazonía Lee* intervention to schools receiving *Soporte Pedagógico*.

This evaluation measures the effects of exposure to the program during first and second grade. In each region, we estimated the impacts of *Amazonía Lee* activities on student reading outcomes at the end of 2nd grade by comparing the average outcomes of students in the treatment schools to those in the control schools. The impact estimates account for students' baseline performance on an emergent literacy assessment administered when students were starting 1st grade. We also controlled for student background characteristics and school characteristics, such as the schools' physical infrastructure.

Impacts on teacher outcomes were estimated by comparing 2nd-grade teachers in the treatment and control groups.

Data Collection

The main data sources for the study are student reading assessments, classroom observations, teacher surveys, and school infrastructure surveys. All of these instruments were collected at endline in 2016 and at baseline in 2015 or 2014.

- **Individual reading assessment.** We designed and piloted an Early Grade Reading Assessment consisting of five tasks: oral comprehension, familiar word reading, decoding, reading fluency, and reading comprehension. The individual assessment was collected on a longitudinal sample of students at two points in time. At baseline, in each study school, we randomly selected one 1st-grade classroom and within it a random sample of 1st-grade students (approximately 10). At endline, we tracked the students in our study sample to evaluate their reading skills.
- **Classroom observation.** We developed a classroom observation instrument to be fielded in the reading and communication class. The instrument focused on measuring teachers' use of class time on different types of literacy-related activities, teachers' literacy instruction, teachers' use of general pedagogical practices, and quality of the classroom literacy environment. The classroom observation was collected at baseline on a random sample of 1st-grade classrooms (one per school) and similarly on a random sample of 2nd-grade classrooms at endline.
- **Teacher survey.** We also administered a teacher survey to all teachers whose classrooms were observed. Teacher surveys gathered information on use of instructional practices, participation in professional development, education and experience, occupational needs, career expectations, and background characteristics.

Findings

Amazonía Lee services reached the treatment groups in both departments. The primary interventions of the program were concentrated on training, in-class coaching, and provision of materials.

Teachers in both departments seem to be implementing Amazonía Lee. In Ucayali, *Amazonía Lee* had positive impacts on explaining the use of different kinds of text, reading daily for pleasure, and teaching the use graphic organizers—practices consistent with the balanced approach. In San Martín, *Amazonía Lee* had positive impacts on practicing graphomotor skills, teaching punctuation, explaining the use of different texts, and developing vocabulary—practices consistent with the balanced approach.

In Ucayali, Amazonía Lee had positive and substantial impacts on reading outcomes. We found an impact of 0.25 standard deviations on reading familiar words and on decoding, 0.16 standard deviations on fluency, and 0.28 standard deviations on reading comprehension.

In San Martín, students in the treatment group had similar reading outcomes to students in the control group. We found no differences between groups on oral comprehension, words read correctly, fluency, decoding, and reading comprehension scores.

Conclusions

When compared to prevailing practice, *Amazonía Lee* achieved substantive effects of magnitudes similar to those found in other rigorous evaluations. However, when compared to a program that provided services similar to those provided by *Amazonía Lee*, students in both groups had similar reading outcomes.

Additional Tables (not included in the word count)

Table 1. Amazonía Lee led to positive impacts of substantive magnitude on reading familiar words, decoding, and reading comprehension in Ucayali

	Treatment adjusted mean	Control adjusted mean	Difference	p-value	Effect sizes
Number of correct oral comprehension responses	2.7	2.6	0.1	0.299	0.09
Number of familiar words read correctly	7.1	6.0	1.1*	0.011	0.25
Number of pseudo-words read correctly in one minute, decoding	16.8	13.3	3.5*	0.001	0.25
Number of words read correctly in one minute, fluency	34.7	30.1	4.5*	0.035	0.16
Number of correct answers in reading comprehension	2.5	1.9	0.6*	0.001	0.28
Number of students	380	360			

Source: *Amazonía Lee* Child assessment—Final Follow-Up 2016.

Note: Regression-adjusted means ordinary least squares and include covariates to account for the design (strata variables). We also include baseline score of students and some student's characteristics (2015) and baseline infrastructure characteristics of schools (2014). Effect sizes were calculated before rounding the adjusted difference.

* Difference in group means is statistically significant at the 0.05 level.

Table 2. Students reading outcomes were similar between groups in San Martín

	Treatment adjusted mean	Control adjusted mean	Difference	p-value	Effect sizes
Number of correct oral comprehension responses	2.9	2.9	0.1	0.315	0.04
Number of familiar words read correctly	8.1	8.2	-0.1	0.441	-0.03
Number of pseudo-words read correctly in one minute, decoding	19.6	20.2	-0.6	0.175	-0.05
Number of words read correctly in one minute, fluency	42.9	44.1	-1.3	0.129	-0.05
Number of correct answers to reading comprehension questions	3.0	3.0	0.0	0.775	0.01
Number of students	824	822			

Source: *Amazonía Lee* Child assessment—Final Follow-Up 2016.

Note: Regression-adjusted means ordinary least squares and include covariates to account for the design (strata variables). We also include baseline score of students and some student's characteristics (2015) and baseline infrastructure characteristics of schools (2014). Effect sizes were calculated before rounding the adjusted difference.