

## Can Training and Coaching Teachers and the Provision of Structured Materials Improve Early Literacy among First-Grade Students?



A one-year teacher professional development program was effective at improving students' literacy skills by the end of first grade (0.39 of a standard deviation in overall literacy proficiency).



Literacy gains persisted through the second and third grades, even though teachers in those grades were not part of the program.



Gains were homogeneous across students of different characteristics such as gender, socioeconomic status, and initial levels of literacy skills.

### CONTEXT

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More than 125 million children worldwide struggle to acquire basic literacy skills in early grades of schooling. Since a key input for student learning is the quality of teaching, it is not surprising that improving teachers' skills has long been a central concern of governments around the world. A popular strategy for achieving that goal is to offer in-service professional development to active teachers. In this paper, we evaluate the effectiveness for enhancing literacy outcomes of an in-service teacher professional development program in Colombia.

### PROJECT

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The paper presents evidence on the impact of an intervention that offered in-service professional development for teachers in the first grade of primary school in Manizales, Colombia. The experiment involved 70 schools and more than 2,000 children. The intervention had three important ingredients: it was based on a phonetic approach, it was based on an active pedagogy, and it followed a curriculum that was carefully structured. Teachers received intensive in-person training for two weeks, followed by continuous, in-class support coaching visits throughout the school year. The initiative also incorporated the development and distribution of complementary pedagogical materials.

## RESULTS

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We find that the intervention was effective at improving students' literacy skills by the end of first grade. Statistical analysis reveals that the overall literacy proficiency scores of students in treated schools improved by 0.39 of a standard deviation compared to the scores of students in control schools (see [Figure 1](#)). Figure 1 shows the treatment effects of the intervention in standard deviations by time horizon.

The positive effects of the in-service teacher professional development program did not fade out. In second and third grade, students exposed to treated teachers during their first grade had literacy scores that in second and third grades were 0.3-0.4 standard deviations higher than students in the control group. These gains were observed even when second and third grade teachers were not part of the teacher development program (which was exclusively designed for first grade literacy).

We attempt to determine possible mechanisms behind the results. First, students experienced no gains in scores for mathematics—a subject not directly targeted by the program but one that could have been indirectly impacted had teachers applied components (such as active pedagogy) of the training program across subjects. Second, we find that the treatment effects were stronger for teachers leading larger classrooms, interpreted as indirect evidence that some classroom-management skills played a role in the treatment effects. Third, we show that treatment effects were homogeneous across students of different characteristics such as gender, socioeconomic status, and initial levels of literacy skills. The fact that students made similar learning gains regardless of initial reading level suggests that teachers were able to adapt their teaching strategies to the abilities of each of their students which reflects an important feature of the program and its implementation.

## POLICY IMPLICATIONS

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In countries where many students are struggling to acquire basic literacy skills in early grades of schooling, finding effective methods to address this issue is a first order problem. This paper provides evidence of a popular worldwide strategy: an in-service teacher professional development program that provided teachers with new pedagogical tools designed to enhance literacy outcomes for first grade children.

The intervention brought together many of the characteristics identified in the literature as being associated with larger student gains: a subject-specific pedagogy; centralized, face-to-face training plus continuous in-class support with tutors visiting teachers every week; lesson enactment in the training; complementary materials in the form of tailored storybooks and workbooks for both teachers and students; and carefully structured lessons with specific guidelines for working each week. In addition, the program was implemented with very high fidelity. This combination seems to explain the large impacts, which in turn translated into a high degree of cost-effectiveness.

The scaling-up of the program is already in motion. Currently, more than 700,000 public school students in Colombia and Panama are benefiting from the program. These numbers are expected to increase soon. Materials are being adapted for Portuguese in Brazil, while Ecuador and Dominican Republic have also shown interest in adopting this teaching model. These recent developments, which incorporate effective program attributes to scaled-up government-funded teacher development programs, suggest that the gap between evidence and policy can be reduced.

**Figure 1. Treatment Effects of the Intervention on Literacy Scores**



Note: The bars represent the treatment effects in standard deviations of the intervention on overall literacy proficiency by time horizon. Confidence intervals at the 95% level.



### FULL STUDY

[Alvarez-Marinelli, Horacio, Samuel Berlinski, Matías Busso and Julian Martinez-Correa. 2022. "Improving Early Literacy through Teacher Professional Development: Experimental Evidence from Colombia."](#)

## DEPARTMENT OF RESEARCH AND CHIEF ECONOMIST

The Department of Research and Chief Economist generates new ideas to enrich the knowledge base that supports the policy agenda of the Inter-American Development Bank (IDB) and its member countries for achieving sustainable and equitable development in the region. To maximize the impact of its research, the Research Department carries out activities that serve as inputs to other IDB departments, governments, the academic community and public opinion in the region.

