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# MEXICO: Can mobile tutors improve learning in remote schools?

Achieving inclusive and quality education for all is a global priority, and policymakers are still grappling with the best ways to ensure the poorest and most marginalized children are in school and learning. About 120 million children — many from rural areas — are still out of school, despite a recent global push for universal access to education. Even when they stay in school, children from poor, rural areas often show the lowest gains in learning. Recruiting and retaining teachers to work in remote areas is a major challenge, and many low and middle-income countries rely on members of the community to teach local schools.

In Mexico, the government runs a mobile tutor program to send recent university graduates to work in schools in the country's most rural and marginalized communities, where teachers are typically members of the community with limited education and training. The World Bank's Strategic Impact Evaluation Fund (SIEF) supported an evaluation to measure the impacts of the mobile tutoring program in the Chiapas region, where a high fraction of the population is poor and indigenous. The evaluation found that the program improved the rate at which students transitioned from primary to secondary school and parents' reports of their children's social-emotional skills. Test scores increased as well. A variant of the program that extended the amount of training that tutors received both before deployment and during their tenure demonstrated slightly higher improvements. These results convinced the government, which had considered shutting down the program, to instead continue sending mobile tutors to remote communities and to adopt some of the changes that made the program more effective.

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## Context

Mexico's Chiapas region, where the study took place, is the poorest region in the country, according to 2016 state statistics. Schools in marginalized communities are run by *Consejo Nacional para el Fomento de la Educacion*, known as CONAFE, a semi-autonomous government agency responsible for providing education services in remote communities with fewer than 2,500 people. CONAFE schools typically have a single multigrade classroom, with an average of 10- 15 students taught by one instructor. The instructors are usually secondary school graduates who do not have formal teaching qualifications and receive only very basic training. They receive a monthly allowance and can eventually benefit from a scholarship for university studies.

Students in CONAFE schools generally perform worse than those in the regular system. In 2013, 13 percent of CONAFE students scored Good or Excellent in the national standardized examination, compared with 42 percent in the ministry-run schools.

This brief summarizes the results of a 2018 Endline Report by Francesco Agostinelli, Ciro Avitabile, Matteo Bobba and Alonso Sanchez, "The short-term effects of the Mobile Pedagogical Tutors: Evidence from a Randomized Control Trial in rural Mexico."

In 2009, CONAFE started a mobile tutoring program aimed at improving the quality of education in these remote and disadvantaged schools. The tutors or *Asesores Pedagogicos Itinerantes* (Mobile Pedagogical Advisors), known as APIs, are recent university graduates assigned to two schools. They are expected to spend about two weeks per month in each school providing one-on-one tutoring to the students who require the most help, making home visits to encourage parental involvement, and providing pedagogical support to the local non-professional teachers. But the API program, as structured, didn't lead to improvements in student learning, as assessed in an earlier evaluation, and the progression rate from primary to lower secondary school remained low.

In 2014, as part of the World Bank project to support CONAFE schools, researchers introduced some changes to the program as it was implemented nationally to improve the effectiveness of the tutors and set up a randomized control trial to test the impact of the changed model on students' learning and grade progression. First, they used an API's ability to speak the main indigenous language in the community as the most important criterion for assigning APIs to communities. In the previous model, 2/3 of tutors assigned to these communities did not speak any indigenous language. Second, because parents had complained about infrequent visits from the APIs, the researchers also provided the supervisors of the APIs an increase in salary in exchange for a mandatory increase in the number of times they visited the communities.

In another variant of the program, researchers increased the training for APIs to two weeks from one week and organized bi-monthly peer meetings so tutors could discuss challenges and learn what their peers were doing to solve problems. The contents (and the costs) of the augmented training were designed jointly with CONAFE in order to guarantee scalability, in case the program proved to be effective.

The interventions started in September 2014 and continued through a second school year ending in the spring of 2016.

**Population at a glance…**

- Communities in the Chiapas pilot were small and remote, with 100 inhabitants on average.
- Sixteen percent had no road and 64 percent lacked a paved road.
- Eleven percent of communities had political conflicts (primarily due to the presence of Zapatista rebels).
- Test scores were substantially lower in community schools than the national average.

## Evaluation

This study used a randomized controlled trial to test the impacts of the strengthened mobile tutoring program and the variant with augmented training. The evaluation took place in a sample of 230 schools that had never received the mobile tutoring program before. Of these 230 schools, 70 schools were assigned to receive the APIs, 60 were assigned to receive the APIs with augmented training, and 100 schools were assigned to the control group with no mobile tutoring at the time of the study.

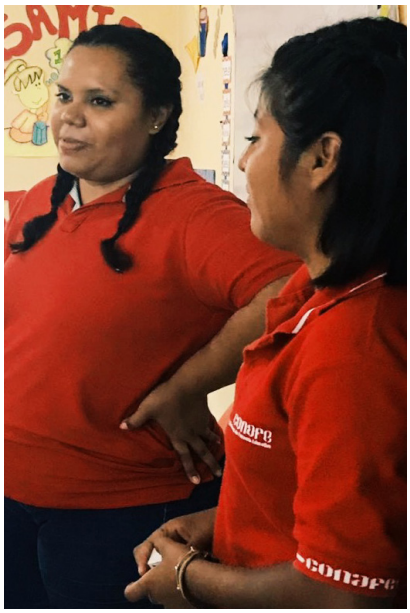
Researchers collected no baseline data and instead used administrative data to assess balance among the experimental groups. Specifically, they used the 2013 results of a national exam (the ENLACE), as well as information about school inputs from a census of schools carried out by the Secretariat of Public Education and information about communities, including poverty rates, from the national census and the National Commission for the Evaluation of Social Policy.

Researchers conducted follow-up data collection in in the spring of 2016. To measure students' reading and basic math ability, two tests were administered: the Early Grade Reading Assessment (EGRA) and the Early Grade Math Assessment (EGMA), which had been adapted to the Mexican context. Although these tests are meant for students in the early primary grades, children in the community schools often lag behind their urban counterparts by a couple of standard deviations, and thus require an easier test. Surveyors interviewed 1,930 children in 3rd to 6th grade and caregivers in 1,050 households about their expectations for their children's education and their involvement in their children's schooling. Caregivers were also asked about their children's behavior. Surveyors also did observations of classrooms to document teachers' pedagogical practices.

# Findings

### Mobile tutors helped improve students' literacy skills….

Compared to the control group, students in the schools receiving the strengthened mobile tutoring program scored an average of 0.135 standard deviations higher on the EGRA test, while students in schools receiving mobile tutors with augmented training scored an average of 0.227 standard deviations higher. Despite this large difference in the average treatment effects, these impacts cannot be statistically distinguished from each other. When the researchers investigated test scores further, they found that these gains were primarily in the areas that students were already doing well in, like reading familiar words, dictation, and reading comprehension, as opposed to the areas where students were initially weakest, like the recognition of initial sounds and letter sounds.



### …but math skills didn't improve as much.

The math performance of students with mobile tutors could not be statistically distinguished from scores of their peers in control schools. Students who had the mobile tutors with augmented training had higher scores than students in the control group, though this gain was only marginally statistically significant. A breakdown of scores by topic area suggests that statistically significant gains only came in the most basic task – number recognition – with limited to no gains in more difficult tasks like addition and subtraction. Children who did not speak an indigenous language at home, however, did appear to benefit from the program with augmented training, making gains of 0.192 standard deviations on the EGMA exam.

### In communities where the tutors received the extra training and the bimonthly meetings, children's social-emotional skills also improved relative to the control group, based on what their parents reported.

The tutors were supposed to help students and parents identify the emotional issues that could affect their learning outcomes and deal with them. Although the initial training didn't have any specific content related to social-emotional issues, supervisors and coordinators encouraged tutors to use the peer meetings to also discuss how to deal with children's emotions. Parents of children in schools served by tutors in the enhanced training program reported significant improvements in social-emotional wellbeing of their children, while parents' reports in the group that received the tutors without the augmented training could not be statistically distinguished from reports from the control group.

### In schools served by mobile tutors who had received the augmented training, primary school students were more likely to continue to secondary school.

The progression rate between primary and secondary school is low in CONAFE schools, with about 60 percent of primary school students continuing to secondary school. But in communities where the mobile tutors went through the more intensive training and support program, the rate rose by 14 percentage points over the control group. Children who received the program without the augmented training saw a smaller increase that was not statistically significant. As with the findings for math, these gains in the transition to primary school were concentrated among students who did not speak an indigenous language at home, suggesting that the program may have benefited children who were not the most at risk for dropping out before secondary school.

**The positive changes may have stemmed from improvements in teachers' pedagogy and greater parental involvement.**

Surveyors observed teachers in their classrooms and documented their ability to adjust to students' learning speed, how much time they spent on teaching activities, and how engaged their students were. The teachers in schools that received mobile tutors with augmented training received significantly higher classroom practice scores than teachers in the control group, while teachers who received mobile tutors with the standard training could not be distinguished from their peers in the control group. Similarly, an index capturing the extent to which parents invested in their children's education (as proxied by their aspirations to see their children graduate from high school, their helping with homework, and meeting with teachers, among other activities) significantly improved only for schools that received tutors with the augmented training. The study didn't find any changes in how much kids studied or how often they attended school.

## Conclusion

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Ensuring that children in remote regions have access to high quality services is a global challenge. This evaluation provides evidence on the impact of a mobile tutor program implemented in highly marginalized communities in rural Mexico, and the results suggest that mobile tutors can be effective in improving learning and children's transitions from primary to secondary school, particularly when the tutors receive adequate training and opportunities to troubleshoot issues with their peers. The tutors helped teachers improve their classroom practices and encouraged more parental investment in education.

Because both interventions tested during the pilot were designed within the restrictions of resources available to the government agency responsible for remote community schools, the tested models were also scalable. As a result, the government of Mexico scaled up the program variant with the augmented training for the mobile tutors in the fall of 2017, a promising step toward creating tangible improvements in learning for disadvantaged children in rural Mexico.

The Strategic Impact Evaluation Fund, part of the World Bank Group, supports and disseminates research evaluating the impact of development projects to help alleviate poverty. **The goal is to collect and build empirical evidence that can help governments and development organizations design and implement the most appropriate and effective policies for better educational, health, and job opportunities for people in low and middle income countries.** For more information about who we are and what we do, go to: http://www.worldbank.org/sief.

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