

# Building Resilient Education Systems: Cost-effective Mobile Tutoring in the Philippines and Beyond

mEducation's phone-based tutoring program yields promising results in improving numeracy skills and student well-being



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Despite an increase in global school attendance rates, low levels of learning persist among many students worldwide. The urgent need for resilient education systems, particularly in countries where emergencies frequently disrupt education, has been highlighted by the COVID-19 pandemic. Youth Impact's phone-based tutoring program, mEducation or ConnectEd, aims to improve math skills by delivering math problems via text and providing weekly 20-minute phone tutorials tailored to individual learning levels. The program showed promising results in Botswana, where it was initially implemented, and to test its scalability, researchers conducted a randomized evaluation in five countries, with IPA leading the evaluation in the Philippines. The program led to a significant 40 percent increase in children's math skills in the Philippines, with an average cost of USD \$12 per student, making it one of the most cost-effective education interventions available.

## RESEARCHERS

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## PARTNERS

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## COUNTRY

Philippines

## SAMPLE

3,492 households with children in grades 3 and 4

## TOPICS

Education Quality, Information and Communication Technologies (ICT), Youth

## STUDY TYPE

Randomized Evaluation

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## TIMELINE

2021-2022

# Policy Issue

Despite increased school attendance rates worldwide, many students are not making progress in their learning. In the Philippines, for instance, students scored second-lowest out of 79 countries in the 2018 PISA mathematics assessment.<sup>1</sup> School closures caused by COVID-19 forced 1.6 billion students out of the classroom, resulting in further learning losses.<sup>2</sup> The effect was particularly severe in the Philippines, where schools were closed for over two years, exacerbating the situation.

Although COVID-19 has been the most recent large-scale emergency to disrupt education, more than 2 billion people worldwide live in countries affected by frequent emergencies that disrupt education.<sup>3</sup> In the Philippines, in addition to the pandemic, a typhoon in late 2021 destroyed 4,000 schools, impacting 2 million students.<sup>4</sup> These events emphasize the need to prioritize access to quality education in emergency situations.

# Evaluation Context

In Botswana, the NGO Youth Impact developed a mobile phone-based tutoring program during the early stages of the COVID-19 pandemic. Known as mEducation or ConnectED, the program provided students with math problems via text messages and weekly 20-minute phone tutoring sessions tailored to their learning level, with a focus on addition, subtraction, multiplication, and division. The program was evaluated on a small scale and found to be cost-effective, resulting in a 0.12 standard deviation increase in learning outcomes.<sup>5</sup> Following these positive results, researchers conducted a randomized evaluation of the mEducation program in five countries, including India, Kenya, Nepal, the Philippines, and Uganda, to assess its scalability.<sup>6</sup> IPA led the evaluation of mEducation in the Philippines.

<sup>1</sup> OECD (2019), PISA 2018 Results (Volume I): What Students Know and Can Do, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/5f07c754-en>.

<sup>2</sup> UNICEF Press Release, "Learning losses from COVID-19 could cost this generation of students close to \$17 trillion in lifetime earnings," UNICEF, December 6, 2021, <https://www.unicef.org/press-releases/learning-losses-covid-19-could-cost-generation-students-close-17-trillion-lifetime>

<sup>3</sup> United Nations Office for the Coordination of Humanitarian Affairs, Global Humanitarian Overview 2019, New York, NY: UNOCHA, 2019

<sup>4</sup> United Nations Office for the Coordination of Humanitarian Affairs, Philippines: Super Typhoon Rai (Odette) Humanitarian Needs and Priorities Revision (Dec 2021 - Jun 2022). New York, NY: UNOCHA, 2022

<sup>5</sup> Angrist, Noam, Peter Bergman, and Moitshipi Matsheng. "Experimental evidence on learning using low-tech when school is out." *Nature human behaviour* 6, no. 7 (2022): 941-950.

<sup>6</sup> Noam Angrist et al., "Building Resilient Education Systems: Evidence from Large-Scale Randomized Trials in Five Countries," Working Paper, Working Paper Series (National Bureau of Economic Research, May 2023), <https://doi.org/10.3386/w31208>.

# Details of the Intervention

In the Philippines, the mEducation program was implemented in three regions selected by the Philippines Department of Education (DepEd) as representative of rural communities. The program targeted students in grades 3 and 4.

To assess the effectiveness of the different components of the program and whether both components (SMS and phone calls) are necessary to achieve positive impact, 3,492 students were randomly assigned to one of three groups: a control group that did not receive the program, a group that received both phone calls and SMS, and an SMS-only group. Researchers also randomly assigned the program's implementation to assess its impact on effectiveness. The program was carried out either by DepEd-employed teachers or IPA-trained tutors selected from government teacher applicants, allowing for a comparison of delivery methods.

In addition to conducting a learning assessment adapted from the ASER test, researchers collected data on child well-being, parental engagement in educational activities, and parental perceptions of their child's learning.

# Results and Policy Lessons

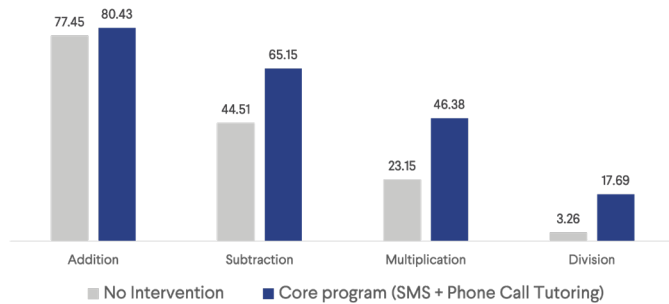
Results showed that the core program of mEducation – phone call tutoring sessions and text messages – improved students' math skills and learning by 40 percent as measured by an index that measures scores on basic math operations.

**Large relative impact:** Of the five countries where mEducation was evaluated, the 40 percent gain in math learning in the Philippines was the second highest. Uganda had the highest gain with a 66 percent improvement in math learning.

**Increase in solving math operations:** The core program of mEducation increased the proportion of students who could solve math problems across all basic operations. When implemented by DepEd, the program increased the proportion of students who could solve problems by 3 percentage points

## GAINS IN LEARNING FROM MEDUCATION IMPLEMENTED BY DEPED

(% of students who answered operations correctly)



for addition, 21 percentage points for subtraction, 23 percentage points for multiplication, and 14 percentage points for division.

When implemented by IPA the program increased the proportion of students who could solve problems by 8 percentage points for addition, 15 percentage points for subtraction, 13 percentage points for multiplication, and 11 percentage points for division.

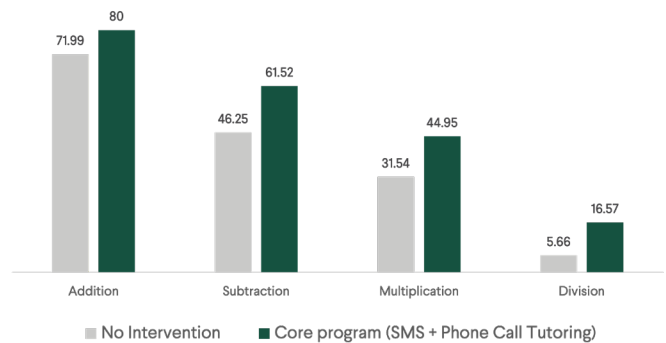
**Moderate effects of text messages only:** Researchers found that students in the text message-only group increased their math learning by 8 percent. The Philippines was one of two countries, along with Uganda, where the text messages had impact, suggesting that texts are effective only in high-need contexts.

**Similar impacts between Department of Education and IPA delivery:** Researchers found that the IPA-implemented program and Department of Education-implemented program were equally effective in impact. This provides suggestive evidence that the mEducation program can be successfully implemented by governments at scale.

**Impact by caregiver education level:** mEducation was found to be more effective for students whose caregivers had lower levels of formal education, indicating the program's stronger impact in households with fewer alternative education support

## GAINS IN LEARNING FROM MEDUCATION IMPLEMENTED BY IPA

(% of students who answered operations correctly)



systems. This also provides evidence that caregivers can provide quality instruction even with low literacy levels.

**Program popularity:** Caregivers across all five countries had high demand for mEducation. Among households that did not receive the program, 97 percent of caregivers reported an interest in receiving the phone call tutorials.

**Secondary Outcomes:** The core program of mEducation had positive effects on non-cognitive skills such as perseverance and ambition as well as positive impacts on child well-being such as enjoying school and worrying less.

**Cost-effectiveness:** Due to the high ownership of cell phones, the primary expenses associated with the mEducation program were the production and delivery of its content to families, with an average cost per student of USD \$12. According to estimates by researchers, mEducation resulted in the production of 3.4 Learning Adjusted Years of Schooling (LAYS) per USD \$100, placing it among the top 10 out of 150 education interventions evaluated.

Building upon these positive results, IPA is currently collaborating with researchers to develop plans for large-scale implementation of the program.

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