Phone-Based Tutoring to Support Learning during School Closures: Evidence from Five Countries

Sector(s): Education

Sample: 16,936 (endline sub-sample of 12,707) households across the five countries

Initiative(s): Post-Primary Education Initiative (PPE)

Target group: Children Primary schools Students Youth

Outcome of interest: Student learning

Intervention type: Digital and mobile COVID-19 response Online learning Parental engagement Tailored instruction

Research Papers: Building Resilient Education Systems: Evidence from Large-Scale Randomized Tria...

Partner organization(s): Youth Impact, University of Oxford, Alokit, NewGlobe, Government of Nepal Ministry of Education, Science and Technology, World Bank, Teach for Nepal, Street Child, Government of Philippines Department of Education, Innovations for Poverty Action (IPA), Building Tomorrow, Global School Leaders, UBS Optimus Foundation, Douglas B. Marshall, Jr. Family Foundation, Echidna Giving, Jacobs Foundation, Stavros Niarchos Foundation, Mulago Foundation

Over two billion people live in regions where emergencies force schools to close, disrupt education, and often cause substantial learning losses. In the context of the COVID-19 pandemic, researchers conducted a randomized evaluation to test the impact of delivering educational content via mobile phones on student learning in India, Kenya, Nepal, the Philippines, and Uganda. They found that mobile-based instruction, especially through phone call tutorials, improved foundational learning outcomes for primary school students.

□□□□□□□ □□□□□□□

Over two billion people live in regions where emergencies, such as climate events, teacher strikes, conflicts, and diseases, can shut down schools and severely disrupt learning. In response, governments, non-profits, and international organizations have been piloting new education-in-emergency approaches to keep students learning during crises—from catch-up classes to remote learning via radio, television, and mobile phones. Ideal programs are low-cost, easy to implement, quickly deployable, and inclusive of learners from diverse backgrounds. However, there is limited rigorous evidence on which approaches are most effective and scalable. Can phone-based tutoring help students continue learning during emergencies across different contexts?

□□□□ □□□□□□□

Low- and middle-income countries face a persistent learning crisis: as of 2018, three out of four grade 3 students in countries such as Kenya and Uganda could not read a simple sentence. [1] The COVID-19 pandemic exacerbated this challenge, disrupting education for over 1.5 billion children worldwide. [2]

To sustain learning during school closures, governments promoted remote learning through radio, television, and online platforms. However, uptake was low in low-income countries, where fewer than 30 percent of households had a television, fewer than 50 percent owned a radio, and fewer than 20 percent had internet access as of 2020. [3]

Against this backdrop, mobile phones emerged as a more accessible option for reaching students. In India, Kenya, Nepal, the Philippines, and Uganda, 93 percent of households had at least a 2G mobile network, which is often sufficient to support phone calls. Building on this potential, researchers partnered with governments and NGOs to roll out and evaluate a phone-based tutoring program across those five countries.

The program adapted an intervention first implemented in Botswana, where learning outcomes improved by 0.12 standard deviations. The program targeted students in grades 3–5 in all countries except for Kenya, where numeracy skills were relatively higher and grades 1–2 were prioritized to ensure comparability across sites. Among participants, learning levels were far below grade expectations, with 7 percent of the students able to perform two-digit division—one of the skills included in the grades 3-5 curricula.



A young child sits and engages with a phone.

Photo credit: Shutterstock.com

□□□□□□□□ □□□□□□□□ □□ □□□□□□

From December 2020 to July 2022, researchers conducted randomized evaluations in the five countries to test whether phone-based tutoring could mitigate the adverse impacts of COVID-19 on learning, as in Botswana. Primary school students and their caregivers in more than 16,000 households took part, with students assigned to one of three groups:

1. *SMS content:* For eight weeks [4], students received weekly text messages with math content and nudges encouraging continued learning.
2. *Phone call tutorials:* In addition to the weekly texts, students received one-on-one 20-minute phone tutorials each week. Drawing on the *Teaching at the Right Level* pedagogy, instructors tailored lessons to each student's learning level based on

weekly assessments, focusing on foundational math skills like addition, subtraction, multiplication, and division.

3. *Comparison group:* Students in this group did not receive either intervention.

The evaluations included the three groups in all countries except India, which did not have an SMS-only group. Across settings, implementers received technical assistance from Youth Impact, the implementing organization in the Botswana study. Delivery models varied by location: NGOs implemented the intervention in India, Kenya, and Uganda, while in Nepal and the Philippines, both governments and NGOs delivered it. This variation enabled researchers to assess implementation quality and scalability under government versus NGO delivery.

Randomization also differed with settings: in India, Nepal, and Uganda, all groups were randomized at the household level; in the Philippines, NGO-led implementation was randomized at the household level, while government-led implementation was randomized at the school-grade level; and in Kenya, the phone call tutorial group was randomized at the school-grade level, while the SMS-only group was cross-randomized at the household level.

To measure impacts, researchers conducted phone surveys at the program's start and a few months after completion. Surveys included short learning assessments for students, covering two-digit addition and subtraction, multiplication, and division, which were measured on a scale of 0–4. To assess non-cognitive skills, students who had completed a riddle were asked whether they wanted to attempt a second riddle, a measure of perseverance, and whether they preferred a more challenging riddle, a measure of ambition. Caregivers were asked how often they did educational activities with their child in the previous three weeks. In Nepal, a supplementary survey asked government teachers if they tailored feedback to students based on their individual learning levels.

During the evaluation, a typhoon named Typhoon Rai hit the Philippines, which destroyed 4,000 classrooms and further disrupted learning and schooling for 2 million children. Researchers tracked which students were affected and found that the original random assignment still held, allowing them to assess if the program was effective in this additional emergency.

Table 1. Individual Study Details

	India	Kenya	Nepal	Philippines	Uganda
Study sample	850 households in the Telangana state	6724 households, from 112 schools in 30 counties	3732 households across all seven provinces of Nepal	3492 households in three of the country's seventeen regions	2138 households in nine of Uganda's 135 districts
Implementing partners	NGO (Alokit)	NGO public-private partnership (NewGlobe)	Government (Ministry of Education), World Bank, NGOs (Teach for Nepal, Street Child)	Government (Department of Education), Research NGO (Innovations for Poverty)	NGO (Building Tomorrow)

Randomization level	Household	Cluster - school grade	Household	NGO-delivered: Household Government-delivered: School-grade	Household
Tutors delivering the phone calls	School teachers based in the same schools as students in the study	Students' normal class teachers	Public school teachers (government delivery) or facilitators trained as teachers (NGO delivery)	Public school teachers (government delivery) or trained tutors (NGO delivery)	Trained volunteers who were resident members of communities in the study
Program duration (in weeks)	8	12	16	8	8
Dates	April '21-July '21	December '20-April '21	January '21-July '21	August '21-July '22	October '21-January '22
School closure during evaluation	Schools were partially closed for the duration of the intervention.	Schools had been fully closed for nine months when the study launched and reopened partway through the study.	Schools were closed when the intervention started. They reopened partway through the study, but with frequent temporary closures.	Schools were closed for the duration of the study.	Schools were closed for the duration of the study.

□□□□□□□□ □□□□□□□□ □□□□□□□□□□ □□□□ □□□□□□□□□

Mobile phone instruction supported learning during school closures, especially when tutoring calls and SMS messages were offered together. SMS messages alone were only effective where access to learning was particularly low. The results reported below reflect the average effect across all countries in the study unless otherwise specified.

Program engagement: Over 95 percent of households in the phone tutoring group answered at least one call. Week after week, engagement stayed consistent, with 70–80 percent of households taking part in the tutoring sessions.

Impact on student learning: The combination of phone tutoring and SMS messaging increased student learning in addition, subtraction, multiplication and division by an average of 0.33 standard deviations (SD), with more pronounced improvements in the Philippines (0.45 SD) and Uganda (0.89 SD). In both countries, schools were closed for nearly two years, and students in the comparison group had very limited access to education. Students who received SMS messages alone saw a more modest impact of 0.08 SD on average. Gains were driven solely by impacts in Uganda (0.21 SD) and the Philippines (0.09 SD), suggesting that SMS-based learning is more likely to make a difference in settings where education is more constrained. The program helped all children make progress regardless of their initial skill level.

NGO vs government delivery: In Nepal and the Philippines, learning gains were similar whether the program was implemented by government teachers or NGO tutors, indicating that governments can deliver the program just as effectively as NGOs.

Impacts on non-cognitive skills: Students who received phone tutoring were 2.9 percentage points more likely to try another riddle (from a comparison group rate of 83.3 percent) and 6.2 percentage points more likely to choose a harder one (from a comparison group rate of 21.1 percent), suggesting improvements in perseverance and ambition. SMS messages alone had no impact on these outcomes.

Impact on teacher and caregiver behavior: In the phone tutoring group in Nepal, teachers were 9.3 percentage points more likely to tailor their lessons to the student's learning levels (from a 77 percent likelihood in the comparison group). Across both SMS and phone tutoring groups, and all countries, parents were 4 percentage points more likely to do education activities with their children (from an 87 percent likelihood in the comparison group).

Impact during the Typhoon Rai: For students impacted by Typhoon Rai in the Philippines, phone tutoring increased student learning by an average of 0.26 SD relative to the comparison group, indicating that phone tutoring can remain effective across different education crises. However, SMS messages alone did not prevent learning losses.

Cost-effectiveness: The combined phone tutoring and SMS program is estimated to cost 11 USD per child. This intervention is associated with 3.9 Learning Adjusted Years of Schooling [5], per 100 USD spent, positioning it among the top 10 of 150 educational interventions analyzed in low- and middle-income countries. [6],

Taken together, these results suggest that targeted phone call tutorials are an effective and scalable method to deliver education during emergencies, across different contexts and via government systems. Researchers attribute the program's success to the high levels of engagement relative to interventions that leverage other remote learning platforms like radio or TV and the tailored pedagogical approach.

In partnership with governments, Youth Impact, is currently scaling the phone tutoring intervention in Botswana, India and the Philippines. In India, the Government of Karnataka has committed to expanding the phone tutoring program to reach over 1 million students through government school teachers. [7], In the Philippines, the program has scaled to 20 school division offices, with the potential to reach 20,000 students. [8]

1. World Bank. 2018. World Development Report 2018: Learning to realize education's promise.

2. UNESCO. 2023. UNESCO's Education Response to COVID-19. https://www.unesco.org/en/covid-19/education-response/initiatives?hub=800

3. Center for Global Development. 2020. School's Out: Now What?. https://www.cgdev.org/blog/schools-out-now-what

4. The program ran for longer than 8 weeks in Kenya (12 weeks) and Nepal (16 weeks)

5. A Learning Adjusted Year of Schooling can be interpreted as a high-quality year of schooling.

6. This follows the approach used by the Global Education Evidence Advisory Panel by calculating Learning Adjusted Years of Schooling across diverse types of education programs. This comparison assesses impact on a set of specific numeracy questions. It is not intended to be a comprehensive examination of all content students would learn in school.

7. Youth Impact. ConnectEd. https://www.youth-impact.org/connected

8. Innovations for Poverty Action. mEducation: Building Resilient Education Systems in the Philippines and Beyond. https://poverty-action.org/mEducation