

THE TUTOR IS CALLING

Targeted instruction by phone boosts learning across six countries

ConnectEd is a phone-based tutoring program shown to significantly improve basic numeracy skills in varied contexts. Over a period of eight weeks, 59 percent of students learned at least one mathematical operation at low cost. ConnectEd can help address the global learning crisis through a tailored approach that can be delivered even when children cannot access in-person school or attend school but need additional support.

Over a billion children experienced some form of extended school closure from 2020 to 2022 ([World Bank, 2022](#)). Our organization, [Youth Impact](#), an NGO headquartered in Botswana, was an experienced implementer of [Teaching at the Right Level \(TaRL\)](#), a proven approach to teaching foundational literacy and numeracy that tailors lessons to a child’s learning pace and ability. During school closures, we tested a phone-based adaptation of TaRL for mathematics that became [ConnectEd](#), a one-on-one tutoring program that uses phones to connect high-quality instruction with students and parents wherever they are (Box 1).

Box 1

ConnectEd includes...



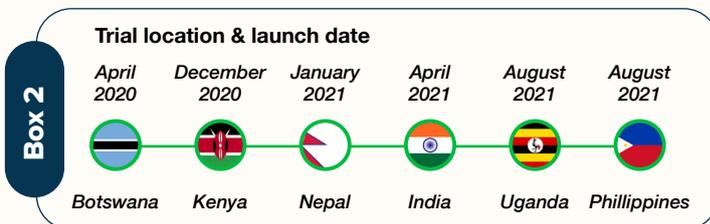
Math problems delivered via text weekly



20 minute-phone tutorial session weekly

- Focus on learning four essential, basic operations: addition, subtraction, multiplication, division
- Primarily serves children grades 3-5
- Lesson content targeted to student’s learning level

To test the effectiveness of ConnectEd, Youth Impact launched a randomized trial in Botswana in 2020 assessing two approaches: Text messages alone and texts combined with individual phone calls ([Angrist et al., 2022](#)). ConnectEd’s positive impact in Botswana prompted NGOs, governments, multi-laterals, and researchers in five other countries to partner with us to test and adapt ConnectEd in their context. These partnerships took place between 2020-2022. This was to our knowledge some of the most rapid and comprehensive multi-country evidence generated on an education intervention (Box 2). This brief demonstrates that rigorous replication can be fast and timely and summarizes results from ConnectEd evaluations globally.



Phone tutoring plus text messages demonstrated positive impacts in all six countries

Table 1 shows the standard deviation difference between receiving ConnectEd and not receiving ConnectEd. (Green arrows indicate that results are positive and statistically significant). On average, the ConnectEd version with phone calls improved learning by 0.33 standard deviations, over a third bigger than the median effectiveness of education interventions ([Evans and Yuan, 2022](#)). Although children who received phone tutoring learned more in every location, the greatest gains were in the Philippines and Uganda, where school closures were longer than in other countries. Results for text messages alone were more mixed, demonstrating statistically significant impacts only in the Philippines and Uganda.

Table 1: ConnectEd with phone tutoring improved learning in every context in which it was tested

		Text only	Text & Call
	Botswana	0.02	↑ 0.12
	Average	↑ 0.08	↑ 0.33
	Kenya	-0.02	↑ 0.09
	Nepal	0.05	↑ 0.14
	India (Telangana)	N/A	↑ 0.21
	Philippines	↑ 0.09	↑ 0.45
	Uganda	↑ 0.21	↑ 0.89

↑ Positive and statistically significant change

Notes: Average covers the 5 replication trials covered in [Angrist et al.](#) (forthcoming). Average does not include Botswana because those results were analyzed separately. All significant results were significant at the 1 percent level, except text messages alone in Philippines (10 percent level) and text messages plus calls in Botswana (5 percent level). Text messages alone was not tested in Telangana.

Table 2: We tested scalable delivery models, including implementation by government teachers and NGO tutors

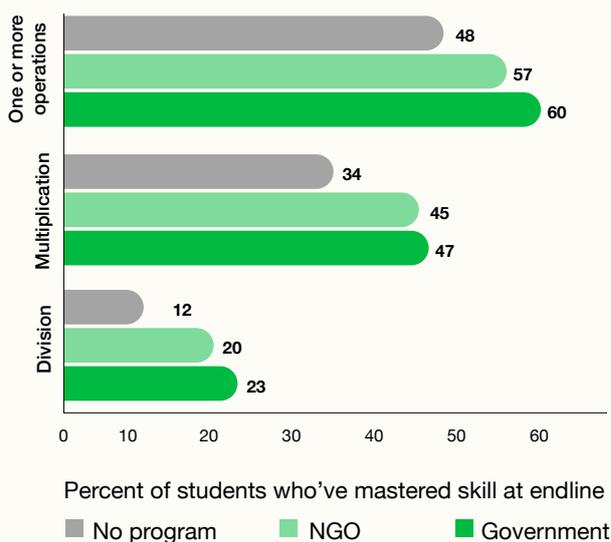
	Text alone	Text + Phone	Tutor profile		Timeframe (weeks)	Location
			NGO	Government		
Botswana	✓	✓	✓		8	8 out of 9 regions
Kenya	✓	✓	✓		12	30 out of 47 counties
Nepal	✓	✓	✓	✓	16	All 7 provinces
Philippines	✓	✓	✓	✓	8	3 out of 17 regions across Luzon, Visayas, Mindanao
India		✓	✓		8	Telangana state
Uganda	✓	✓	✓		8	9 out of 135 districts

Note: In Kenya, tutors were private school teachers.

Table 2 provides more details about the similarities and differences across the different locations in which ConnectEd was implemented. In every location but India (Telangana) we tested text messages alone compared to text messages with phone tutoring sessions (also compared to a control not receiving ConnectEd). In most countries, 20-minute tutoring sessions were once a week for eight weeks; the duration was longer in Kenya and Nepal. Tutor profiles included teachers (public and private schools), teacher aides, individuals hired by NGOs, and community volunteers. In two sites, Nepal and Philippines, we also tested effectiveness across different tutor profiles – NGO tutors and government teachers. Sample size totaled over 16,000 students across locations, and households were spread out across a wide geographic area within most countries.

across NGO and government delivery.

Figure 2: NGO and government-hired phone tutors similarly improved mathematics learning substantially (average of Nepal and Philippines)



Government and NGO tutors were equally effective

As shown in Table 1, ConnectEd was implemented by a variety of different types of tutors. In two sites (Nepal and Philippines) we randomly allocated students receiving ConnectEd to one of two groups: tutored by government teachers or tutored by individuals hired by an NGO. Figure 2 shows the share of children who mastered mathematics operations, comparing government and NGO delivery. The light (NGO) and dark (government) green dots represent the delivery type. The green bars indicate very similar impacts by both types of tutors – the share of students who had mastered the operation differed by at most 3 percentage points



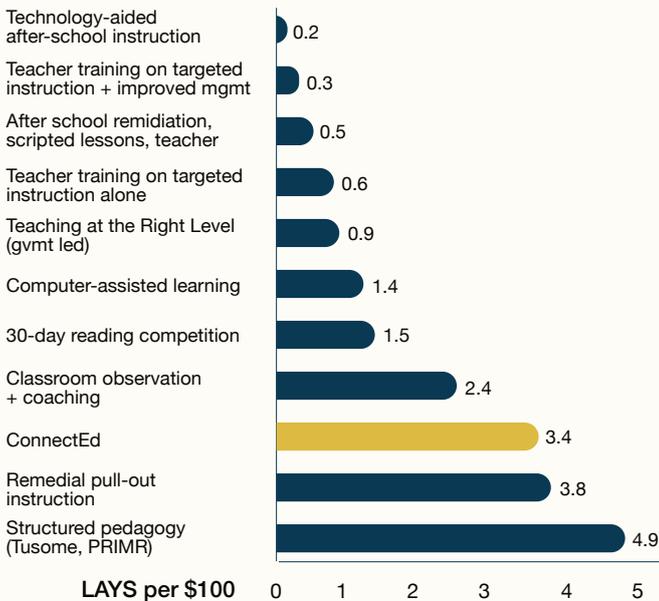
ConnectEd was highly cost-effective

The primary tool required to implement and receive ConnectEd is a mobile phone, owned by nearly every household in countries where ConnectEd was tested ([World Bank, 2021](#)). Because ConnectEd builds on existing household infrastructure, the main costs are related to content delivery and connecting with families. These include (a) training tutors; (b) staff time spent preparing lesson content; (c) tutors’ time (for scheduling and making calls), (d) mobile phone airtime; and (e) staff time for supervision and management. Costs per student for the duration of the program averaged \$12 per student. (Note that costs were for program delivery only.) ConnectEd is a

highly cost-effective program – just 3 hours of highly-targeted instruction improves numeracy.

To benchmark these ConnectEd results, we use Learning Adjusted Years of Schooling (LAYS), which is a calculation of how many high-quality years of schooling an intervention is equivalent to in a given context. Figure 3 shows a comparison of the LAYS per \$100 for edtech and pedagogy interventions that demonstrated an impact (the vast majority do not). ConnectEd produced 3.4 LAYS per \$100, making it among the top three most cost-effective interventions for this category and among the top 10 most cost-effective education interventions measured by [Angrist et al., 2020](#).

Figure 3: ConnectEd is among the most cost effective edtech and pedagogy interventions



Source: Source: Data on LAYS and cost (other than ConnectEd) from [Angrist et al., 2020](#), Figure 5. Authors reviewed 150 studies; among 40 that showed impacts, they ranged from 141 to 0 LAYS per \$100. We include a subset most relevant to ConnectEd.



ConnectEd supports struggling learners as a complement to school and in emergency contexts

We've shown that ConnectEd was highly effective in teaching students basic numeracy skills when schools were closed due to the COVID19 pandemic. Even after schools have reopened, millions of children worldwide still face unexpected closures due to natural disasters, conflict, and less acute circumstances like physical barriers or teacher absence. As long as mobile phones are accessible to households and children are healthy and safe enough to learn, ConnectEd can maintain schooling continuity and accelerate learning.

The ConnectEd results also emphasize the substantial impacts of one-on-one tutoring and targeted instruction, demonstrated by other studies ([Nickow et al., 2020](#)). The six countries highlighted in this study were home to systems with great variation in terms of student learning levels in a primary school classroom. If used outside the classroom, ConnectEd can target students who need extra support. Barriers to implementing more widespread individualized tutoring have been cost and access, which are substantially lower with ConnectEd compared to in-person tutoring. The low-cost, accessibility, and ease of implementation of ConnectEd can allow school systems to utilize more tailored approaches to address the persistent learning crisis.

ConnectEd Implementation & Research Partners



ConnectEd Funding Partners

