



Engaged Educators, Engaged Students:

Transforming Rural Costa Rican Schools

Sarapiquí District, Sarapiquí Region, Costa Rica

www.teachunited.org



TeachUNITED

An Education Impact Study
from TeachUNITED

Funding Partner:
The Schooner Foundation



SCHOONER
FOUNDATION

*Special thank you to Robert Murphy, Education Research
Consultant, for his guidance throughout this project.*

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EXECUTIVE SUMMARY

ENGAGED EDUCATORS, ENGAGED STUDENTS

The first step towards high-quality education for students begins with teachers. However, due to obstacles like geographic isolation and constrained budgets, schools in rural communities have reduced access to the one tool that reliably improves student outcomes: high-quality teacher training. COVID has only exacerbated these inequities. As a result, rural schools worldwide are facing a crisis, with lower primary and secondary completion rates and university attendance rates than other regions. This trend hinders students' future opportunities.

As the largest canton by land area in the Heredia province, Sarapiquí remains both rural and remote due to its incredibly bio-diverse tropical rainforest and the Sarapiquí River. The region continues to struggle with improving student outcomes despite having made gains in expanding school access and enrollment in recent years. TeachUNITED has worked within this region for six years.

This case study finds that the TeachUNITED program is effective in delivering impactful teaching methods for quality education within Sarapiquí. As a result, the program has helped to improve student outcomes, boost teacher engagement and motivation, and maintain ongoing school improvement. The program's success is due to its use of evidence-based impact strategies such as purpose and mindset, student engagement, personalization, and data-driven instruction. Compared to pre- and post-assessment and/or control schools, TeachUNITED schools have seen significant positive changes.

- 86.3 percent of students passed their classes at the end of the year.
- Students showed a particular strength in science with 88.9 percent of students passing the subject.
- Students made significant gains in their content areas in 2022, with growth outperforming controls by +15.1 percentage points in literacy, + 3.7 percentage points in math.
- 99 percent of Sarapiquí educators reported feeling motivated to teach, and there was an increase of 6.2 percent in participants' intentions to continue working as educators from the beginning to the end of the program.
- More than 90 percent of participating teachers reported improved teaching practices and ability to engage students who were not motivated to learn, as well as sharing the collective belief with their colleagues that they have significant positive effects on their students' lives.

These changes at a local level are indicative of the potential for sustainable, systemic change. By enhancing the abilities of local educators, schools continue to improve well after the direct involvement of TeachUNITED as a result of shifting pedagogical practices over time.

INTRODUCTION

TeachUNITED is a global nonprofit organization whose mission is to improve the quality of education in rural and historically underserved communities. TeachUNITED combines community-based teacher coaching with evidence-based pedagogical training in a philanthropically-supported, scalable package that allows for local education leaders to own, co-design, and adapt context-specific strategies to increase academic achievement.

Aligned with SDG4*, TeachUNITED is ensuring that underserved educators are empowered with high-impact strategies to increase academic achievement, develop each student's full potential, and break cycles of poverty. Since 2016, TeachUNITED has been mobilizing local teacher leaders to build capacity, not dependency, in underserved rural communities. In the years since TeachUNITED started working in Sarapiquí, they have reached 1,012 educators in 85 schools, who in turn have served 61,796 students.

With a rigorous approach to monitoring and evaluation, TeachUNITED continuously collects and analyzes data with impressive outcomes in student learning, student and teacher engagement, and teacher leadership development. This ensures that schools participating in the TeachUNITED program have a high-quality and sustainable program moving forward with teacher leaders who are trained to deliver the program for years to come. TeachUNITED conducted this Education Impact Study to get a systemic view of the impact our work has had in Sarapiquí, Heredia Province, Costa Rica.



Students from Escuela IDA Huetares.

*Sustainable Development Goal 4 (SDG4) focuses on education and aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”

LEARNING CHALLENGES

Central America's public education is facing what is being called "the worst crisis in the last three decades," similar to the time when political-military conflicts devastated the area less than 50 years ago (Sexto Estado de la Región, 2021). The region saw the longest school closures in the world due to COVID-19, where students lost an estimated 1.5 years of learning as two-thirds of all in-person school days were disrupted since the beginning of the pandemic. Currently, more than 62 percent of children under the age of 10 do not have reading comprehension skills, equating to 7.6 million children in Latin America (World Bank, 2021).

In Costa Rica, 26 percent of rural households live below the poverty level compared to 22 percent of urban households, and the rate of children and adolescents living in poverty has increased to 35 percent (UNICEF, 2021). On average, poor Costa Ricans have 3 fewer years of schooling than economically stable peers, and they have only a 1-in-10 chance of making it to university, a significant opportunity gap for rural youth (Octavo Estado de la Educación, 2021; OECD, 2017).

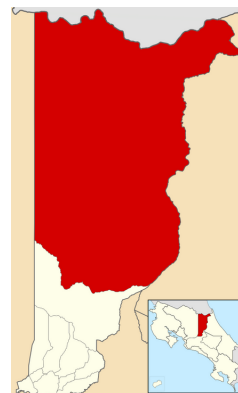
About Sarapiquí, Costa Rica

One of ten cantons in the Heredia province, Sarapiquí makes up over 80 percent of the land area. Its highly bio-diverse tropical rainforest and Sarapiquí River drive both agricultural and tourism-related economies. Sarapiquí also borders Nicaragua to the north and has seen an increase in refugees and migrant workers in recent years.

The community has a very young population that is looking for opportunities outside tourism and agriculture. Existing agricultural jobs on plantations are dangerous and poorly compensated, and there remains a high wealth disparity between locals and tourists.

While there has been a concerted effort to expand school access and enrollment in recent years, the region still struggles with improving student outcomes due to considerable barriers to learning. The most recent state of education in 2021 (Octavo Estado de la Educación, 2021) shows:

- Repeated and significant disruptions of school cycles
 - The country saw nearly 4 years (2018-2021) of schooling interruptions between both employment strikes and COVID-19 closures.



Map of Sarapiquí canton, Heredia Province, Costa Rica. Wikimedia Commons



Liceo de Río Frío School, Sarapiquí

LEARNING CHALLENGES

- New forms of educational exclusion
 - Nearly 40 percent of students in Costa Rica did not have adequate conditions of connectivity and access to technological resources during the pandemic.
- Ineffective teaching practices
 - The gap between current teaching practice and Costa Rica's learning goals is significant, and teacher evaluations show that nearly 30 percent of math teachers and 40 percent of English teachers do not master the content of the curriculum they are supposed to teach.

As the need for skilled workers and technology training increases in the region, students and teachers are placing a greater focus on science, technology, engineering, and math.

It is estimated that this generation of students risks losing \$21 trillion in potential lifetime earnings, as each additional year of schooling is linked to an increased return on investment (World Bank 2022). Low educational outcomes directly limit opportunities for future employment and consign generations of young people to a future of economic insecurity and poverty. The need for sustainable intervention within education is urgent. TeachUNITED data shows that quality teacher training and support are central to reversing these patterns. Placing teachers at the forefront of the education crisis will substantially improve student outcomes, and even their income once young people enter the labor market (Vladimirova & Le Blanc, 2015).



Class at Escuela la Trinidad.

IMPLEMENTATION

TeachUNITED provides a full suite of research-based teaching strategies, job-embedded coaching, and small-cohort peer learning communities. The program is localized to the challenges and needs of the schools and communities with which it is working, taking into account the limitations inherent in working with rural areas. In year one, cohorts of teachers are trained by TeachUNITED instructional coaches in strategies proven to close learning gaps of 2-3 years in a single school year (Visible Learning, 2022): Purpose and mindset, student engagement, personalization, data-driven instruction. Strategies are applied in the classroom throughout implementation and reflected upon during coaching sessions and small-cohort workshops. In year two, the trained participants from year one facilitate the program for the other teachers within their school and/or district, serving as in-house instructional coaches to colleagues.

During the implementation of the program in Sarapiquí, over 40 workshops were conducted and more than 350 individual coaching sessions were held, resulting in a 93 percent program completion rate among participating teachers.

METHODS AND IMPACT STUDY DESIGN

Implementation Fidelity and Program

Data

During the program, instructional coaches track lesson and assignment completion, webinar and coaching call attendance, and capstone project completions for graduation. Coaches also conduct classroom visits for observation and microteaching sessions using feedback rubrics. Participating teachers and their students also complete baseline and endline surveys on their attitudes, beliefs, and classroom practices.

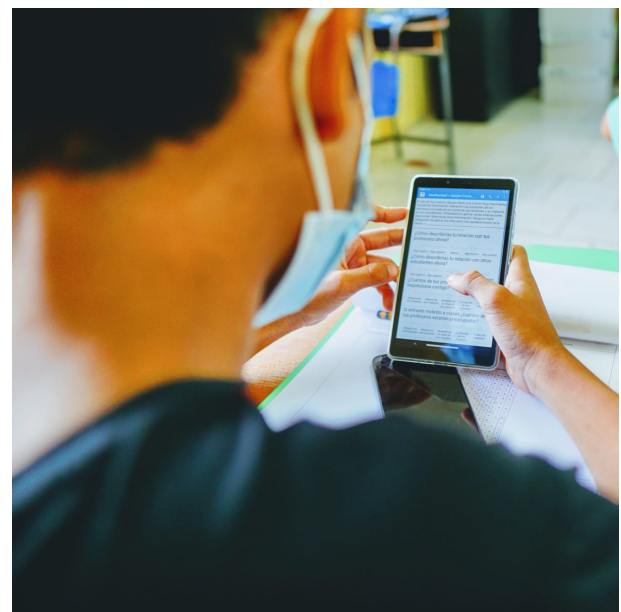
Baseline surveys are administered to teachers and to students near the beginning of the school year and endline near the end of the school year. Data from teacher surveys are used to provide insights into change in teacher understanding, confidence, and practice after engaging with and learning from TeachUNITED coaches. Likewise, data from student surveys are used for insights into changes in beliefs, attitudes, and classroom experiences for students of those teachers.

Teacher participants complete online baseline and endline surveys. Teachers also administer online surveys to their students. The raw data from all sources are cleaned, processed, and analyzed using Tableau's data prep and analytics platform. Analysis of teacher and student survey data focuses on the distribution of responses for both the baseline and endline survey items and the change in the proportion of favorable responses from baseline to endline.

Quantitative Assessments

Student pass rates, available for both full year and by content subject, are collected from schools. Analysis of this data provides insights into the impact of TeachUNITED's services on student achievement on a school and district level.

In addition, TeachUNITED also conducts student assessments to monitor the success of the program, using externally validated standardized assessments. Ten randomly selected students per grade per school (including control schools) take TeachUNITED assessments in literacy and mathematics. The early primary grades use a modified Early Grade Reading Assessment in Spanish. Later primary students and secondary students take easyCBM math and LearningAZ literacy assessments, also in Spanish. Assessments are completed online using Jotform or using offline form access, depending on access and connectivity.



Student completes online assessment.

Baseline assessments are administered to students near the beginning of the school year and endline near the end of the school year. Data from these assessments are used to assess the progress of students receiving instruction from teachers in schools served by TeachUNITED compared to those in control schools.

Students take the mathematics and literacy assessments on tablets. The raw data is cleaned, processed, and analyzed using Tableau’s data prep and analytics platform. Analysis focuses on the average baseline and endline scores, and the magnitude of change from baseline to endline, of students receiving instruction from teachers in schools served by TeachUNITED compared to those in schools not receiving TeachUNITED services.



Students and TeachUNITED participating educator, Escuela Kay Rica

| Sarapiquí School System | | |
|---------------------------|-----------------------------------|---|
| School System | Primary | Secondary |
| Years of Schooling | 6 Years | 5-6 Years |
| Grade/Cycles | Cycle I: Gr1-3 Cycle II: Gr4-6 | Cycle III: Gr7-9 Cycle IV: Academic/ Technical Strands, 2-3 Years |
| Diploma | Primary School Diploma | Bachillerato Diploma |

Qualitative Interviews and Analysis

During this case study, qualitative interviews were conducted at the school, district, and regional levels. Interviews were conducted with teachers and administrators at Escuela La Tigra, Liceo Río Frío, and Escuela Estero Grande, as well as district and regional educational officers. TeachUNITED instructional coaches who worked with those schools were also interviewed for their expert opinion and context. Interviews were semi-scripted and open-ended in order to gather additional insight from participants, and recorded.

Analysis of the interviews was done inductively and in vivo whenever possible. Initial coding created general categories and line coding created specific categories related to teaching and learning practices, including teacher attitudes toward school, experience with professional learning, peer learning communities, and student performance, among others. Interviews were translated for inclusion in this case study and have been reviewed by both internal and external translators.

IMPACTS AND OUTCOMES

While facing significant challenges in public education, students, teachers, and school leaders in Sarapiquí have committed themselves to the betterment of education within their schools and to the positive growth of their community. The impact and outcomes in this section support the efficacy of the TeachUNITED program and mirror what research tells us: both teacher and student engagement is key to success in academic outcomes and personal well-being.

Collaborative and Experiential Learning

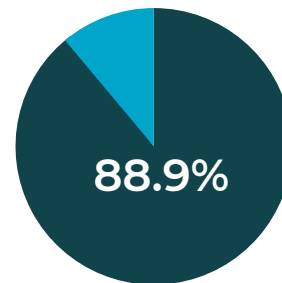
TeachUNITED coaches trained educators in personalized learning strategies that provide for experiential learning and incorporate choice, carefully selected technology tools, and project-based work.

Notably, given the focus on experiential learning, technology tools, and experimentation, TeachUNITED Sarapiquí students showed particular strength in science, as 88.9 percent of TeachUNITED students passed their science courses. That success in science shows even more clearly in primary and intermediate grades. Primary TeachUNITED students' pass rates for science were 8.6 percent higher than those for control schools, and in intermediate grades 95 percent of students grades six through eight passed science.

This incredible success in a STEM field helps set up students for continued success in post-school careers, where technology and science experience are highly valued in Sarapiquí.

Teacher Voices

From preschool-age to secondary science classrooms, teachers find ways to bring joy, play, and gamification into their work. Science teacher at La Tigra, Alex Nunez, uses game-show style “Wild Cards” or “Phone a Friend” options during experiments, so students are engaged and willing to experiment more. In Maria Vivian Lopez Matarrita’s preschool special education classroom, the students use gross motor play to practice important independence and life skills. Though they have vastly different grades, the same joy and curiosity pervade both classroom spaces.



of students passed science courses



Maria Vivian Lopez Matarrita, Special Education Teacher at Escuela La Tigra

“When students enter, enter and observe, they are like ‘Wow, something changed in the classroom’, there is no longer that cold, empty, simple classroom. That affected the children a lot when they came to school. They didn't show the enthusiasm that they show now.”

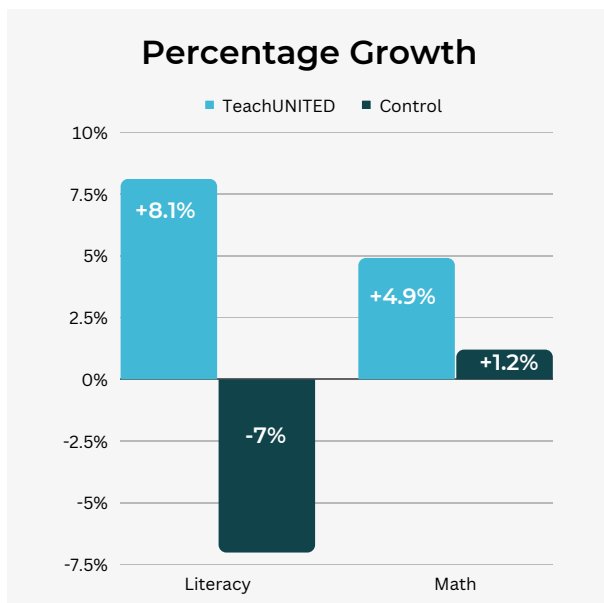
**- Maria Vivian Lopez Matarrita,
Special Education Teacher, La Tigra**

Academic Success

The TeachUNITED program equips local teachers with the skills needed to reach ambitious student achievement goals, close learning gaps, and become educational leaders in their communities. TeachUNITED Sarapiquí partner schools demonstrated this with significant growth scores, outpacing regional counterparts.

In 2022, an overall 86.3 percent of TeachUNITED Sarapiquí students passed their classes at the end of the year. TeachUNITED primary students notably outperformed their peers at control schools, registering an 85.4 percent pass rate compared to the control schools' 81.9 pass rate. The pass rate for intermediate students was even higher, at a 93.4 percent pass rate for TeachUNITED students in grades six through eight.

On the 2022 standardized assessments administered by TeachUNITED, Sarapiquí students at TeachUNITED schools gained 15.1 percentage points more in literacy and 3.7 percentage points more in math than their peers at control schools.



Girls Impact

Many female students in Sarapiquí face additional systemic barriers to their education, as they may face additional family and caregiving responsibilities. Even in 2021, the height of the COVID pandemic in Costa Rica, TeachUNITED girls saw an 8.8 percent increase in their literacy and a 14.1 percent increase in their mathematics assessment results.



Students at Escuela Santa Eudviges

School Spotlight: Estero Grande

Using student-centered strategies learned in the TeachUNITED program increased student ownership of learning and improved curiosity, in turn, improving student outcomes dramatically. Estero Grande celebrated huge increases in their Grade 5 literacy assessments, with a 75 percent difference from pre- to post-assessment in 2022.

“When we apply the program and put what we learn into practice, then we are going to create kids who are going to work harder for themselves and who are going to investigate, create knowledge instead of just being there listening. They are going to work in a group. They are going to do collaborative learning.”

- Carolina Flores Aguero, Teacher, Estero Grande

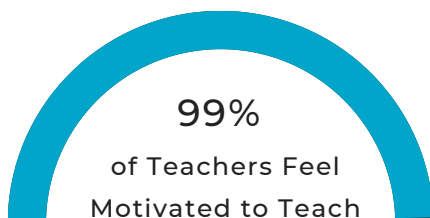
Collective Efficacy

Collective efficacy, one of the key tenets of TeachUNITED's program, is the group belief of teachers and leaders in their ability to positively impact students. John Hattie's most recent meta-analysis underscores that collective efficacy is a top factor (when implemented with fidelity) that will move the needle on student achievement. TeachUNITED has found that this type of efficacy tends to be sustaining, as schools continue to improve long after the completion of the TeachUNITED program.

99 percent of Sarapiquí educators reported feeling motivated to teach, and there was an increase of 6.2 percent in participants' intentions to continue working as educators.

By the end of the program, more than 90 percent of TeachUNITED participating teachers report that:

- They can improve their teaching practice and engage students who are not motivated
- They are comfortable collecting and using student data in their classrooms to make instructional decisions
- They, their colleagues, and their schools have significant positive effects on their students' lives
- They have positive relationships with their fellow teachers and their students



Students of teachers participating in the TeachUNITED program report similarly positive outcomes, with over 90 percent of students reporting that:

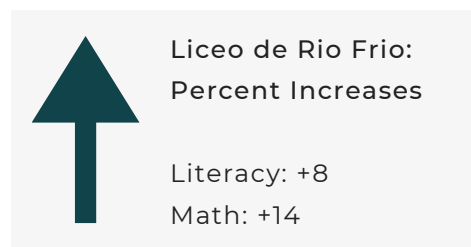
- What they are learning in school is relevant to their future
- Their teachers encourage them in their goals; take the time to help them understand the material
- They feel able to persist when learning something new or when making progress toward a goal

School Spotlight: Liceo de Río Frío

Sustained collective efficacy from educators, and students seeing postsecondary career success, offers a form of systemic transformation. Teachers see how the whole school and community are starting to buy into this vision of success.

"Here in Costa Rica, we have very important people in the field of science, technology, commerce, and industry. It is hard for us in small towns to believe that someone from a small school, from a small school in a rural community can achieve success. That they can believe that it is possible, that in Sarapiquí the potential exists. That is my vision."

- Alexander Vega Núñez, Science Teacher, Liceo de Río Frío



CONCLUSIONS

In summation, the TeachUNITED program is successful in delivering best practices for teaching and learning. The data show that focusing on evidence-based impact strategies leads to improved student outcomes, increased teacher engagement and motivation, and sustained collective efficacy, impacting schools and the larger community.

TeachUNITED intends to build on this work by expanding to other, similarly underserved districts in Costa Rica and throughout Central and South America. Program expansion to other regions is achieved through investment in local NGOs to train in the program and then implement in the schools with which they work. TeachUNITED will continue to support lasting impact in Sarapiquí: training additional schools who have not yet taken part in the program; providing an alumni program to keep teachers engaged and learning; providing access to resources and helpful training in perpetuity to all partners.

These changes at a local level are indicative of the potential for sustainable, systemic change. By enhancing the abilities of local educators, TeachUNITED schools thrive long after the program has ended, as a result of shifting pedagogical practices over time.



Hear from
participating students,
teachers, and
educational leaders
throughout Sarapiquí,
Costa Rica.

As head coach of TeachUNITED's Latin American team, Yohns Solis, said "The vision of TeachUNITED Latin America is greater and better opportunities for all students, from all corners of the region. It is to help empower and motivate teachers to make the best possible learning experience for their students. It's a vision where the possibilities are endless."



TeachUNITED head coach, Yohns Solis, works with participating teachers.

"TeachUNITED is implementing something very good, and we are on the right track. I would like it to be possible to work in all regions of this country. And well, obviously, we have to continue working in my region because this all comes down to the productivity of the teacher in the classroom. And in the end, what is the most important thing to me? It's that students have a quality and cutting-edge education, and that is what we are seeing today."

- Marvin Sibaja, Sarapiquí Regional
Director for MEP

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