

SISTEMA DE APRENDIZAJE TUTORIAL

REDEFINING RURAL
SECONDARY EDUCATION
IN LATIN AMERICA

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Sincere gratitude and appreciation to Priyanka Varma, research assistant, who has been instrumental in the production of the Sistema de Aprendizaje Tutorial case study.

We are also thankful to a wide-range of colleagues who generously shared their knowledge and feedback on the Sistema de Aprendizaje Tutorial case study, including: Mario Ayala, Reyes Benedict, Regis Benedict, Elia del Cid, Bita Correa, Claudia Costin, Soheil Dooki, Heriberto Flores, Orlando Gabarrete, Danilo Iraheta, Jeff Lansdale, Kevin Marinacci, Alejandro Martinez, Yesenia Martinez, Patrick McEwan, Erin Murphy-Graham, Juan Miguel Pérez, Gerardo Quijada, Renan Rapalo, Michael Richards, Marcelino Moreno Rivera, Ana Salinas, Ruhollah Sayyah, Eucebio Torres, Ingrid Vasquez, Ian Walker, and colleagues.

Lastly, we would like to extend a special thank you to the following: our copy-editor, Alfred Imhoff, our designer, blossoming.it, and our colleagues, Kathryn Norris and Jennifer Tyre.

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Support for this publication and research effort was generously provided by the John D. and Catherine T. MacArthur Foundation and The MasterCard Foundation. The authors also wish to acknowledge the broader programmatic support of the William and Flora Hewlett Foundation, the LEGO Foundation, and the Government of Norway.

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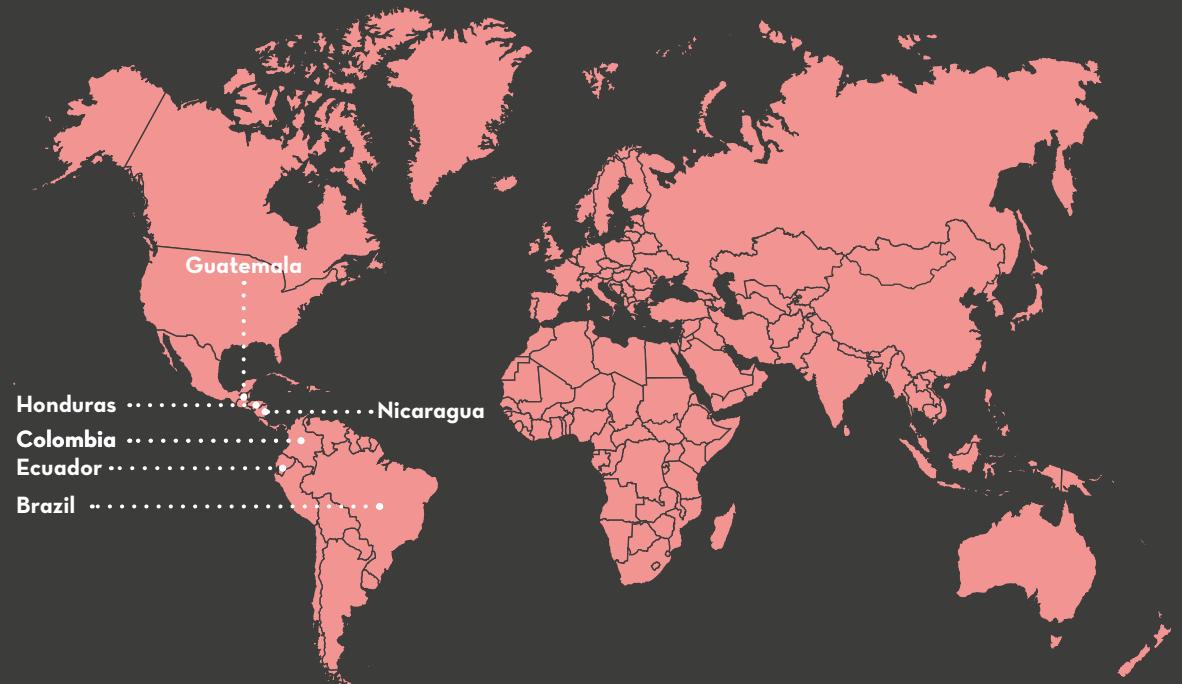
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Electronic copy available at: <https://ssrn.com/abstract=3956794>

Sistema de Aprendizaje Tutorial at a glance

EDUCATION LEVEL:

Secondary



LOCATION:

Rural areas of Brazil, Colombia, Ecuador, Honduras, and Nicaragua. Guatemala hosted an SAT program until 2005

FOCUS OF INTERVENTION:

Alternative secondary school program for rural youth who have finished primary school

INTERVENTION OVERVIEW:

Sistema de Aprendizaje Tutorial (Tutorial Learning System), also known as SAT (late 1970s–present), which was designed by the local Colombian nongovernmental organization named the Foundation for the Application and Teaching of the Sciences (Fundación para la Aplicación y Enseñanzas de las Ciencias, FUNDAEC), provides alternative lower- and upper-secondary education to rural youth in a way that integrates relevant theory and practice so that they can continue to work on their agricultural pursuits and livelihoods. The program's trained tutors use a "learning-by-doing" methodology, such as learning mathematics and science in the context of agricultural innovation, to promote rural education and community development in marginalized communities. SAT is grounded in Baha'i principles, and it emphasizes civic engagement, social justice, and female empowerment, in addition to academic skills. SAT is accredited and recognized by governments in Colombia and Honduras, which enables graduates to continue on to attend a university or get jobs that require secondary degrees.

TYPE OF LEARNING MEASURED:

Literacy and numeracy (measured with learning assessments), school retention, and civic responsibility and women's empowerment (observed through qualitative studies)

COST:

In Honduras: total annual budget of \$400,000 to \$500,000 for the local nongovernmental organization partner, and \$3 million to \$4 million for the Honduran government to cover tutors' salaries, for an annual total of \$450 per student. Costs are typically funded by grants from foundations and bilateral and multilateral donors. In Honduras, however, 70 percent of costs are self-financed by textbook sales.

SIZE:

Direct reach—300,000 students in Latin America since SAT's inception (7,400 students in Honduras). *Indirect reach (in Honduras)*—155 centers.

IMPACT:

Test scores—Children in SAT villages in Honduras had test scores 45 percent better than children in neighboring government rural schools. *Social learning outcomes*—Qualitative studies suggest that SAT students in Honduras had a stronger sense of social responsibility for their communities, and female SAT students had enhanced levels of empowerment (defined by their capacity for self-determination and their ability to make strategic life choices). *Expansion*—The SAT model has been exported with varying degrees of success across countries in Latin America. In Africa, Southeast Asia, and the Pacific, SAT has been adapted into a sister program called Preparation for Social Action, known as PSA. *Rural development*—By hiring tutors from local communities, SAT contributes to employment creation; applied learning projects contribute to the improved well-being of communities.

Background

Although Latin America has made considerable progress in primary school enrollment, secondary school remains a challenge, particularly in rural areas. It is a region known for its stark inequities, where young people living in urban areas are often twice as likely to go to secondary school as their counterparts in rural communities. For instance, in Honduras, 28 percent of rural youth complete lower secondary school, compared with 63 percent of urban youth (Secretaría de Salud [Honduras], Instituto Nacional de Estadística e ICF International 2013). In Colombia, the rural-versus-urban proportions are 45 and 73 percent (Profamilia, el Ministerio de la Protección Social y ICF International, Encuesta Nacional de Salud y Demografía 2010).

Inadequately trained teachers, a scarcity of teaching and learning materials, and limited interaction between schools and communities exacerbate the challenges for secondary school enrollment throughout the region. In addition, the material that is being taught is often not relevant for students' lives and careers, especially in rural areas. As a

result, countries across the region have experienced mass migrations of people from rural areas to cities and across borders to other countries seeking better opportunities. It should come as little surprise that in many Central American countries, children and youth risk their lives everyday to cross borders in search of better lives.

Against this backdrop, the Sistema de Aprendizaje Tutorial (Tutorial Learning System), better known by its Spanish acronym SAT, emerged as a formal, alternative secondary school program responding to the absence of quality education and training for young people living in isolated, rural communities. Offering grades 7 through 12, SAT is a flexible, six-year program focused on the development of relevant knowledge, skills, and service-oriented values that rural youth need to become productive members and leaders of their communities. In short, SAT aims to develop a generation of socially minded and relevantly trained young people who can serve as engines of sustainable development in their communities.

Catalyzing an education revolution

SAT was formed in Colombia in the late 1970s by the Baha'i-inspired nongovernmental organization (NGO), the Fundación para la Aplicación y Enseñanza de Ciencias (Foundation for the Application and Teaching of the Sciences, or FUNDAEC). Though SAT is a formal secondary program

in Colombia, Ecuador, Honduras, and Nicaragua—meaning that students leave with a nationally recognized diploma—it is far from a typical school. Many have described SAT as catalyzing an “education revolution,” because it is responding to deficiencies in rural education systems by transforming how education is

conceptualized, designed, and delivered (Soheil Dooki, interview by Jenny Perlman Robinson, January 31, 2015). For instance, learning is conceived as broader than gaining traditional academic skills; there is also a strong emphasis on analysis, inquiry, community service, and moral and character development. SAT's students—as described by Yeri, a recent SAT graduate in Honduras—“are not seen as empty vessels to fill but considered as a mine rich in gems of inestimable value that education reveals” (SAT graduate in Le Ceiba, Honduras, interview by Jenny Perlman Robinson, January 31, 2015).

Having been envisioned as a rural development strategy and influenced by the central beliefs of Baha'i teachings, SAT leverages education as “a key tool to unlock the development process where actors are the key agents of change” (Bita Correa, interview by Jenny Perlman Robinson, February 12, 2015). That is, SAT creates a social learning space aimed at bridging theory and practice by linking classroom work with practical learning projects, like encouraging students to learn mathematics and science in the context of growing vegetables or using their language abilities to start small study groups to promote adult and/or child literacy (Honeyman 2010). And because students are thus guided by moral values and principles of social responsibility, human interconnection, and gender equality, and the like, they realize their own potential through actions of service, applying their knowledge to the improvement of their own communities (Richards 2005; Murphy-Graham 2008; Honeyman 2010).

Although SAT was never intended to substitute for or compete with the formal

education system, it was targeted at rural communities without any secondary education coverage due to, for example, problems of distance, accessibility, and/or limited national education budget and resources (Richards 2005). In this way, although SAT was implemented by FUNDAEC or other local NGOs, it was aligned with the government's need to provide secondary education to students in areas that are difficult to reach. For instance, when SAT was first introduced in Honduras by the Asociación Bayán in 1996, students in most rural communities on the northern coast had to travel to and board at the closest urban centers in order to pursue secondary education. Not only was this costly, but it also pulled students away from their communities, cultures, and livelihoods. SAT thus provided a welcome opportunity for students to continue their education closer to home. And, with its structural innovations, SAT made it possible to overcome constraints posed by other alternative rural secondary school models—like the requirement to have a large catchment area to justify the costs of opening a school. Instead, SAT's introduction of flexible teacher contracts and autonomous management by an NGO, for example, enabled smaller groups of students at each age level—a “catchment” reality more reflective of Honduras' other rural communities—to be educated together, and at an estimated cost that was 10 percent lower per-student than that of government-run rural secondary schools (Honeyman 2010; McEwan et al. 2015).

Today, SAT is being implemented by a number of local NGOs in Brazil, Colombia, Ecuador, Honduras, and Nicaragua. Guatemala also hosted an SAT program

until 2005. In addition, SAT has been adapted to other countries in Africa, Asia, and the Pacific region as a sister program, known as Preparation for Social Action, or PSA. After decades of refinement in these countries, five key components now make up the core of SAT.

SAT's first key component is textbooks. The SAT curriculum comprises 80 textbooks that are developed and periodically revised by FUNDAEC through a process of action research. Because a central tenet of SAT is to prepare rural youth to participate effectively in the sustainable development of their communities, SAT's texts are not organized according to subject areas. Instead, they focus on developing five capabilities that are relevant for life in these rural communities: mathematics, science, language and communication, technology, and community service. As the core component of SAT, FUNDAEC retains the copyright on the texts and either sells them directly to implementing organizations or charges the organization a small royalty fee to print them, depending on the number. Texts cannot be revised by other implementing organizations, although FUNDAEC regularly revises them to be more universal. In some SAT programs, like the Honduran one, students must purchase their textbooks (at a cost of about \$33 per year), on the grounds that charging students for books increases their commitment to learning.¹ As one mother of an SAT student explained, "all sacrifices have their rewards" (mother of SAT student in La Ceiba, Honduras, interview by Jenny Perlman Robinson, January 31, 2015).

SAT's second key component is tutors. Teachers within SAT schools are referred to as "tutors"—an important distinction,

as their role is to guide and facilitate the learning process rather than only impart information to students. The tutor figure is an important innovation of the SAT program, specifically because SAT does not promote a hierarchy between tutor and student but rather a culture of mutual respect and trust (CRECE 2001; Murphy-Graham and Lample 2014). This relationship radically changes the teaching-learning process, and its distinctiveness is further reflected in the program's emphasis on dialogue and debate, as well as close student-teacher interactions centering on textbook exercises that are normally performed in a circle or in small groups.

The SAT tutor's job is not confined to guiding the learning process. Instead, tutors, who are expected to learn alongside their students, also engage students in a variety of practical learning projects in the community to help build a bridge between theory and practice. For example, students learn about math by conducting a demographic survey, or they study biology by undertaking a public health campaign. Each tutor works with a group of 15 to 25 students, staying with the same group for all six years. Tutors are also actively involved in their communities, winning them much respect. And it is not unusual for a tutor to serve as a mentor figure for students. As one parent in Honduras observed, "The time tutors spend with students expands the walls of the classroom" (father of SAT student in La Ceiba, Honduras, interview by Jenny Perlman Robinson, January 31, 2015). If a student is absent, the tutor will often visit the student's home, or share a meal or coffee with the student, to discuss the challenges they are facing.

In Honduras, the local implementing NGO in Honduras, Asociación Bayán, hires tutors (many of whom are themselves graduates of SAT) from local communities, using a competitive hiring process. The Honduran government pays tutors' salaries, but tutors are considered public-contract teachers rather than tenured civil servants. This temporary status allows the local implementing NGO (together with the government) more flexibility and autonomy in hiring and dismissing tutors.

Tutors are not required to be certified teachers; but, at a minimum, they must have finished secondary school and be attending a university. Tutors participate in 10 days of in-service training every three months to ensure that they are continuing to develop their skills and are receiving ongoing pedagogical support from field advisers—who are akin to coaches, with each one responsible for 10 SAT centers. Tutors are assessed before their selection and then again at the end of each training session.

SAT's third key component is study groups. Students are organized into study groups rather than in traditional classes, and they progress together through the program as a cohort, along with their tutor. There are about 15 to 25 students in each study group, and the groups meet 20 to 25 hours a week. The exact schedule is determined by the students and tutor in order to accommodate responsibilities outside school.

SAT's fourth key component is implementing institutions. Many view SAT as a development program rather than an education program; some even describe it as a social movement.

Therefore, it becomes difficult for any one organization or government ministry to absorb it. As the program expanded outside Colombia, FUNDAEC made the deliberate decision to form partnerships with local institutions that would be responsible for implementing SAT. In most cases, registered NGOs oversee the program's daily operations, which are funded by grants from foundations and bilateral and multilateral donors. In Colombia and Honduras, the ministries of education cover tutors' salaries, SAT's largest recurring cost (Murphy-Graham and Lample 2014). Having a network of like-minded organizations allows for greater flexibility within SAT as an international program, while giving implementing organizations greater control over how to incorporate the national program within their existing education system (i.e., whether to have it nationally accredited, or to run it as an alternative system, or to run it alongside a number of other programs, such as health care efforts).

Finally, SAT's fifth key component is community involvement. Community engagement is a critical component of SAT. Communities provide space for SAT centers by donating existing structures or by helping to build classrooms for the study groups. Additionally, in some countries such as Colombia and Honduras, communities are also encouraged to provide a parcel of land for students to use for agricultural activities, like comparing the different effects of using organic versus chemical fertilizers on the land and crops. They contribute time and expertise to assist with student community service projects—such as raising chickens; childhood education, public health, and sanitation campaigns;

establishing income-generating projects; and providing internships (Murphy-Graham 2014). In such cases, SAT centers become *community* centers and places of intergenerational learning.

Impact and evidence of success

SAT's contributions to rural development and rural education, especially in skills such as positive leadership and attitudes like service to the community, have gained widespread international recognition and awards. Its reach, as mentioned above, has spread to nearly 300,000 of the most educationally marginalized and difficult-to-reach young people in several Latin American countries over the last three decades. And since 2006, it has also been adapted in countries in Africa, Southeast Asia, and the Pacific region. To varying degrees, SAT has withstood the test of time, having existed in some countries for more than 15 years, with aspects of it incorporated into national education systems. Both the Honduran and Colombian governments have recognized SAT as a formal alternative secondary education program. The Honduran government has even passed a formal mandate to expand the program throughout the country's rural areas (Honeyman 2010). In fact, the Honduran SAT program has become the best-established SAT program outside Colombia, with about 7,400 students in 155 SAT centers in 12 of the country's 18 departments (states).²

Beyond its impact in scope and scale, SAT has also consistently demonstrated a positive effect on a broad range of student learning outcomes, especially in

Research suggests that the community's direct involvement in SAT's activities helps to build a greater sense of trust within the community (Murphy-Graham and Lample 2014).

Honduras, where a number of rigorous studies of SAT have been conducted. For example, an impact evaluation found that after two years, children in SAT villages outperformed their peers in traditional secondary schools in other rural areas by 45 percent. One plausible explanation for these gains is that SAT schools received more instructional materials and tutors received more in-service training related to instructional methods (McEwan et al. 2015). Additionally, SAT schools lost fewer instructional days (such as during periods of political turmoil or teachers' strikes) compared with traditional schools—a result, perhaps, of the program's use of flexible teacher contracts and the ability of its implementing NGOs to dismiss underperforming tutors.³

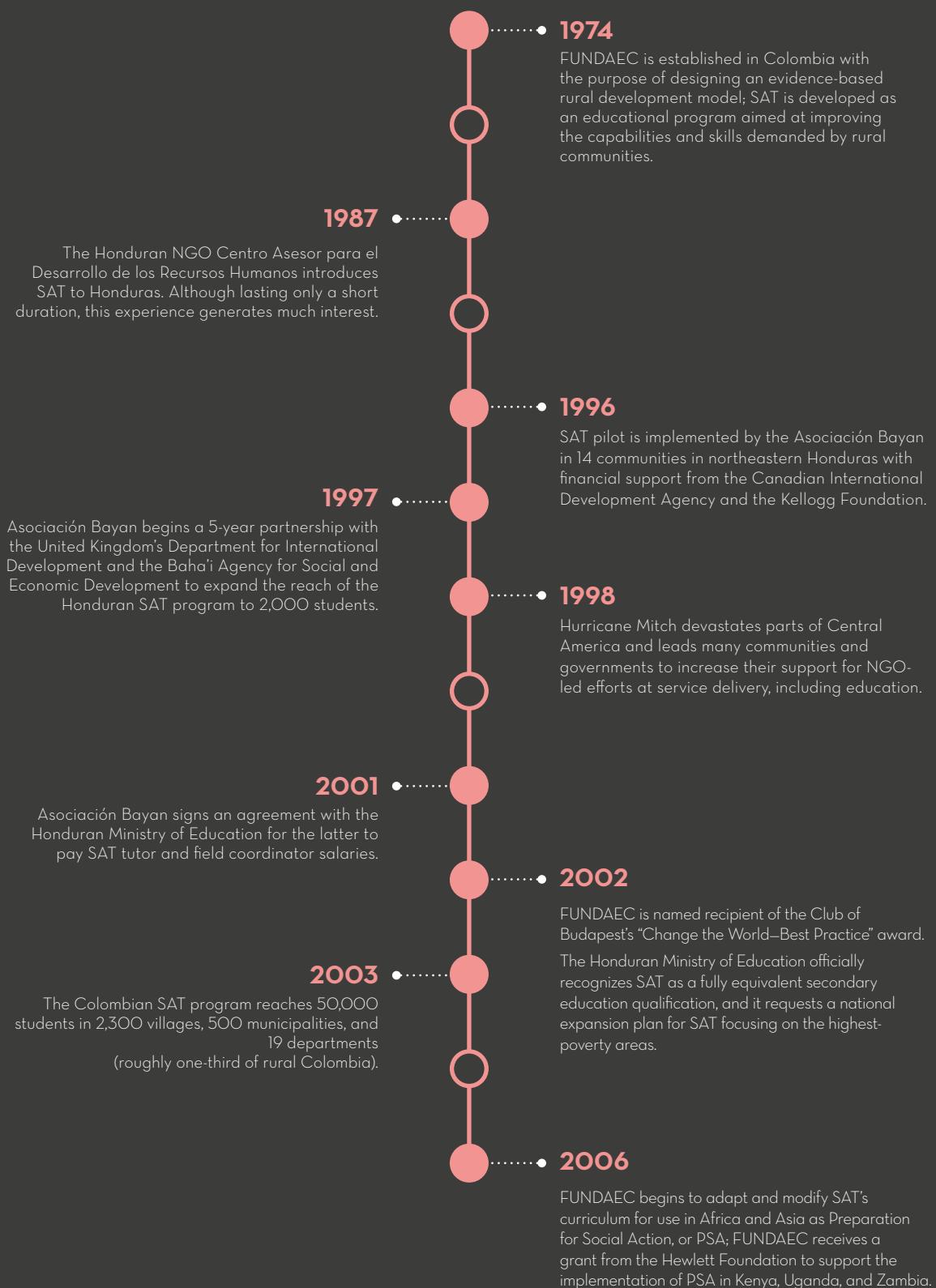
Evidence also suggests SAT's role in improving broader skills, such as promoting civic responsibility, empowering girls, and building trust (Murphy-Graham 2008; Honeyman 2010; Murphy-Graham and Lample 2014). For example, a mixed-methods study found that SAT students in Honduras developed a stronger sense of social responsibility for their communities than their peers in government-run rural secondary schools. The study's author identifies some of the likely reasons for this: an emphasis on unity and solidarity as an overarching principle in SAT materials and texts; an approach to

education centered on personal growth and transformation rather than on test scores; and the practical application of theoretical concepts, such as sustainable development and poverty alleviation (Honeyman 2010). Another qualitative study conducted in four SAT villages on Honduras' north coast found that female SAT students had enhanced levels of empowerment, as measured by their capacity for self-determination and their ability to make strategic life choices. In particular, female SAT students displayed a combination of increased knowledge and tangible skills like chicken-raising, a

critical understanding of their contexts, self-confidence, and an awareness of their rights (Murphy-Graham 2008).

Finally, SAT also has an impact on rural communities beyond education. For instance, the SAT model contributes to employment creation by recruiting tutors from the community and by improving the capacities and skills of rural youth. Additionally, by applying science-related topics to solve real life problems in their applied learning projects, SAT students are actively contributing to community development (CRECE 2001).

Timeline of key events



Key drivers behind scaling impact

SAT was not scaled up overnight. After starting in Colombia in the late 1970s, it was not until the 1990s that the program began to be scaled up, reaching nearly 300 communities in the country.⁴ In Honduras, although introduced in 1987, it was not until 1996, when it was piloted for four years, that it grabbed widespread attention. And it was not until 2006 that SAT was adapted into its sister program, Preparation for Social Action, or PSA, in countries in Africa, Asia, and the Pacific region. According to FUNDAEC, SAT was not developed with expansion in mind. So how then did SAT come to catalyze an "education revolution" across rural Latin America

and beyond? Using the Honduran SAT program to illustrate, the remainder of this case study brings to light some of the key factors contributing to SAT's widespread success at scaling up innovations in rural education—including the Asociación Bayán's organic, demand-driven approach to expansion; its strategic approach to partnerships, especially with the Honduran government; its adaptation of SAT's core components to the local context; its use of both empirical evidence and first-hand accounts to demonstrate impact; and its adherence to a core philosophy and vision across program components and administration.

Expanding at a slow, incremental, and demand-driven pace

Most of SAT's expansion within and across countries and regions has been at the request of other communities, NGOs, or governments. For example, in the late 1980s, the director of Centro Asesor para el Desarrollo de los Recursos Humanos, a local NGO in Honduras, identified SAT in his research on alternative education systems as a promising approach to empowering local agrarian reform cooperatives. Shortly thereafter, the director, along with a key group of stakeholders, traveled to Colombia to study the SAT program. Seeing the potential for making a big impact, the team expressed interest to FUNDAEC to bring SAT to their country.

But following its initial introduction to Honduras in the late 1980s, SAT lasted only a few years. Once it began to

lose its focus on education, it began to deviate from the SAT philosophy and was shortly discontinued (Richards 2007). Because communities liked the program, Asociación Bayán stepped in and began its SAT pilot in 1996. According to Bayán's leadership, it was critical that SAT did not start big but instead had the opportunity to test and refine components along the way. In this manner, Bayán implemented the Honduran SAT program with the end user in mind, according to the needs of students and their communities. Purposefully keeping their staff lean, even during program expansion, Bayán saw itself as leading a social movement rooted in education, rather than running a large education program.⁵

SAT's expansion in Honduras under Asociación Bayán has been slow and

controlled, while carefully managing the tension between expansion and maintaining program quality. An important factor has been Bayán's appreciation for the process of monitoring and evaluation, which has enabled it to leverage data on and evidence for its program's impact, including findings from external researchers who studied its program. Transparency has been important, and Bayán's leaders have not been afraid to identify and make course corrections along the way. In fact, Bayán holds collective reflection meetings every three months with SAT communities in order to discuss data from the SAT centers, goals, and progress. Through this process, which takes time, Bayán has learned many important lessons that it otherwise would not have learned if it had expanded throughout rural Honduras too quickly.

However, though SAT's implementing organizations have followed a careful, demand-driven approach to expansion, they have still actively pursued opportunities for expansion. Indeed, SAT has benefited from strategically leveraging key policy moments to advance its mission.⁶ For example, at various points since the 1990s, many Central American governments have recognized that there was a need for an alternative education system in rural areas, where limited resources and budgets prevented governments from effectively delivering education. By aligning itself with these different policy moments, SAT responded by helping governments solve their problems with, for example, teacher shortages, dispersed catchment areas, or the expansion of rural secondary education in the face

of limited resources and capacity. In some cases, implementing organizations have even signed agreements with their governments to recognize SAT as a formal secondary education program, whereby SAT graduates are provided with certified degrees. In other countries, such as Honduras, SAT's innovations—such as its teacher evaluation and data management systems—have been integrated into the formal education system (Ingrid Vasquez, interview by Jenny Perlman Robinson, February 2, 2015).

Today, governments have been motivated by the challenge of stemming the tide of rural-to-urban migration, and SAT has been able to step in with its emphasis on educating a generation of young leaders committed to serving their communities. Indeed, SAT takes seriously its focus on tailoring rural education for sustainable development, so much to the point that the program continues to refine its functionality, adding new activities over time to meet rural communities' shifting needs and circumstances. For instance, in Nicaragua, the SAT curriculum now includes the concept of "learning while earning," whereby Fabretto, the Nicaraguan implementing organization, works to connect student-led microenterprises to local markets.⁷ In Honduras, Asociación Bayán has added community banks for students and adults to enable them to save, receive small loans, and invest in small productive projects. Also, in response to community demand in Honduras, Bayán revised the name of the field of study appearing on the SAT diploma, from "rural well-being" to "sustainable development," in order to help give SAT graduates a more easily recognizable degree relative to national diploma offerings in urban areas.

Maintaining a delicate balance with governments

Although FUNDAEC in Colombia was the original SAT implementer, it now works through 30 local NGOs and national and regional governments throughout Latin America. For each new SAT program, FUNDAEC is instrumental in getting things off the ground by providing curriculum and training. But after this initial period of assistance, FUNDAEC steps back to play a very limited role. Thus, the role of local partnerships has been critical to SAT success, both in its impact and in its expansion. To date, the strongest SAT partnerships have taken on a strategic nature between a government agency that provides formal recognition and political and/or financial support, an autonomous and well-managed NGO that implements the program, and local communities that have bought in, participate, and help to maintain SAT centers. Increasingly, partnerships have also expanded to include local corporations, such as coffee growers and other large producers, as implementing organizations that have begun to look for technical and/or financial support for SAT centers.⁸

The creation of these strategic alliances and interinstitutional networks of private and public sector actors have no doubt facilitated SAT's management, financing, and risk reduction. But what has made these strategic partnerships particularly unique to SAT's success in scaling up has been their delicate balance between government support and the local autonomy of the implementing organization. For example, the Honduran Ministry of Education handles the payment of tutors' salaries, while Asociación Bayán hires, trains, places, evaluates, and dismisses tutors if needed.⁹ Maintaining these discrete roles for each partner

cannot be overstated, especially because it has helped to relieve the Honduran government of the need to assume all roles of education delivery, financing, and oversight, while insulating Bayán from changes in power or political patronage that could have affected its control over the program. Once the independence of the implementing organization is overstepped, however, the success of the SAT model could be compromised. To illustrate, Bayán prefers to dismiss underperforming tutors. However, the Honduran Ministry of Education's requirements for all teachers make it harder to dismiss teachers. Under these circumstances, maintaining Bayán's autonomy in SAT's hiring-and-dismissing process for tutors becomes difficult, especially with the constant need to sensitize new groups of politicians to SAT's arrangement with the Ministry of Education with each political cycle.

Additionally, strategic partnerships with government agencies come with typical bureaucratic challenges that can undermine the SAT model. For instance, because SAT's tutors are not considered permanent teachers, their salaries come from a discretionary government budget that is less stable. As a result, payment is often irregular, and at times communities are left to collect the funds to pay tutors (CRECE 2001).

Just as balancing government support and the local autonomy of the implementing NGO has been important for the success of SAT's partnerships, striking a balance between being an alternative education program and becoming mainstreamed into the national education system has

been important for SAT's successful growth and expansion. In many cases, gaining formal recognition by the national government has been a sign of success; accreditation grants the SAT program and its graduates a degree of legitimacy and validation. But paradoxically, the more embedded SAT becomes in the national education system, the more SAT's complexity and flexibility—characteristics integral to its successful growth and impact—must be standardized to meet the requirements of local ministries of education. For instance, an essential aspect of SAT's curriculum has been its underlying framework of human interconnection, reinforced through SAT's emphasis on students engaging in service to the community through practical learning projects. In countries where the SAT curriculum has been aligned with the national curriculum, as in Nicaragua, the service component may still remain important, but students are not proactively taught to strive to improve the lives of others as SAT tutors would have done, and students may only occasionally have the opportunity to perform acts of community service rather than service feature as a regular component (Honeyman 2010). In short, SAT begins to look more like a traditional secondary school, albeit with SAT features.

Making education relevant to local needs

SAT was conceived as a rural development strategy whose goal was to enhance the human resources capacity of communities. In doing so, it became an educational model based in experiential learning, committed to the pursuit of knowledge

As an alternative education program, SAT's focus on rural, difficult-to-reach communities where the government cannot provide secondary education effectively has given the program and its implementing organizations a great deal of freedom and flexibility to innovate without threatening the status quo. However, SAT could easily receive criticism and opposition from the state education system—given its philosophical underpinnings in the Baha'i faith (although, there is no religious content in SAT); its aim to transform mindsets about how learning is conceived; and its tendency to challenge elements of the status quo, such as measuring wealth according to one's talents and capabilities rather than one's material possessions (Ruhollah Sayyah, interview by Jenny Perlman Robinson, January 31, 2015). But its policy of starting up in more marginalized areas has allowed SAT to take root and to prove itself before gaining the full attention of the government. As SAT continues to grow and expand, however, especially into areas the government already serves, this unconventional approach could become more threatening to the system. This is particularly the case for teachers' unions, which in other contexts have taken issue with interventions employing a large number of contract teachers (Bold et al. 2013).

that is relevant to the lives of rural people. This emphasis on a relevant and livelihood-oriented education has grounded SAT in a participatory approach and has ensured that the model—its curriculum, teaching materials, and pedagogies—remains

flexible and is adaptable to the various needs and rural realities of students across a number of countries. Though this flexibility has contributed immensely to SAT's replication and expansion, controlling this flexibility has also been important for maintaining its fidelity of the original model.

To retain the "essence" of SAT, FUNDAEC identified and refined several core components of its program, leaving a fair amount of the model flexible and open to adaptation. The curriculum (i.e., the 80 texts developed by FUNDAEC) is one such "sacred" component, a nonnegotiable aspect that defines the SAT model and is shared across programs. Although nonnegotiable, the curriculum attempts to be universal, with revisions made, for example, in 2000 that changed the currency discussed in the texts from Colombian pesos to a neutral "universales." Furthermore, the curriculum's adoption of an experiential approach, or "learning by doing," ensures that learning takes place in a practical context to which students can easily relate (Richards 2005). Thus, for example, once-abstract concepts in business accounting and economics are integrated into a lesson on running a chicken farm; and concepts in entomology and epidemiology are integrated into a lesson on pest management. This experiential approach to learning, along with other core curricular components—such as SAT's commitment to community service and learning through interaction in the community, its livelihood orientation and emphasis on relevancy, and its emphasis on gender equality—have helped to differentiate SAT from other alternative education products, such as a new rural alternative school model in Nicaragua and the government-run rural secondary schools in Honduras.

Beyond the curriculum, much of SAT's implementation is determined by the local context. This includes when, where, and how often to meet, as well as the number of hours per week to meet in order to account for when students need to participate in agricultural activities—the primary income in most of the rural areas of SAT countries. Some of the more flexible aspects of coordination and structure, such as tutors' contracts and the practical and community service activities, appear to have increased the amount of instructional time, sometimes beyond government requirements.

Another essential component of the SAT model that has contributed to the program's ability to make education relevant to local needs—and thus contributed to the program's scalability—is the new role given to teachers in the learning process. Rather than viewing teachers as transmitters of knowledge, SAT tutors learn alongside their students and guide them in the exploration of knowledge—a radical approach to learning in many of the contexts where SAT operates. Indeed, the SAT model assumes that traditional rote-learning methods do little to develop students' critical faculties but instead promote and reinforce an unquestioning attitude toward the problems of society. Indeed, according to researchers, this approach to education has helped to create negative attitudes toward rural life, stimulating the exodus of rural youth to urban centers and contributing to the moral and social disintegration of rural areas (Richards 2005). By transforming teachers into tutors, SAT reduces the hierarchical underpinnings of the learning process and makes learning more relevant and responsive to students' needs. And by hiring tutors primarily from

local communities, SAT not only helps to ensure that tutors are socially accepted in SAT communities, but also makes tutors more likely to be committed to SAT's core vision of community service and its goal of developing the service-oriented attitudes of students.

Closely intertwined with this new role for teachers is SAT's reconceptualization of students. Instead of viewing students as empty vessels to be filled, as one SAT graduate described it, the SAT model views students as coming to the classroom with valuable experiences and knowledge that, through collaboration

with tutors, can be cultivated and applied to solve real-world problems. The resulting relationship between students and teachers—one that rejects the traditional relationship, where teachers stand in front of students and impart their knowledge—is reflected in the participatory methods tutors use in the classroom and in the fact that tutors' responsibilities to their students extend beyond the walls of the classroom. Together, SAT tutors and students redefine a more equitable learning process oriented toward critical problem solving and the sustainable development of their communities.

Leveraging empirical evidence and first-hand experience

Empirical evidence has also played an important role in SAT's expansion. A number of rigorous external evaluations and long-term qualitative studies have helped to demonstrate the effectiveness of SAT's model, especially in Honduras, on a number of different dimensions and learning outcomes. In some ways, implementing NGOs like Asociación Bayán have relied heavily on leveraging data to counter doubt among stakeholders about their expansion strategies. For instance, Bayán's leaders believed that it was important to launch SAT in some of the most remote and difficult-to-reach areas in northern Honduras—a move that received mixed reactions from stakeholders, which, in turn, made it difficult to gain traction early on. However, once Bayán was able to demonstrate with empirical evidence that the SAT model was working, the organization was essentially able to prove to stakeholders that if SAT could work in the most challenging areas, it could work anywhere.

Interestingly, SAT has also benefited from other forms of data. For example, many politicians and policymakers have become ardent supporters of SAT after seeing its results in their communities with their own eyes, not necessarily after seeing the data. Given the complexity of the intervention, FUNDAEC and other implementing organizations have come to appreciate that the people who are responsible for making decisions need to witness SAT first-hand in order to really understand what it is about. Thus, giving political allies a chance to personally witness results in the community has been a particularly important strategy, alongside demonstrating impact through evidence. However, despite such success at cultivating local champions in this way, Asociación Bayán found that sustaining such support was an ongoing, time-intensive process, especially in political systems where there is high turnover of administrations and/or personnel.¹⁰

In other cases, the power of evidence also came up against deeply ingrained beliefs and mindsets about alternative education. This was especially the case in rural communities, where alternative education has traditionally been perceived as an inferior form of schooling. For example, even though students at the SAT centers in Honduras scored higher on tests than students in traditional schools, some parents initially resisted sending their children to the centers

because of their preconceived beliefs about SAT as an alternative secondary school (Murphy-Graham 2012; McEwan 2015). Intentional efforts thus had to be made by Asociación Bayán's leadership to change community mindsets, employing data strategically to this end, in combination with first-hand accounts by students about how much they were learning for the first time in school and how well they were doing on university admission examinations.

Establishing a coherent vision

The story of how SAT came to catalyze an education revolution across Latin America rests on a combination of the themes discussed above. But an important common thread for the many actors and program components of this social movement has been the underlying vision or philosophy of people-centered development and the kind of collaborative, experiential learning model that this has inspired. It was important that FUNDAEC created a network of like-minded implementing organizations that shared its core values, especially because FUNDAEC played a limited role once a new program had been established. After all, if the implementing organizations had not held SAT's values, it would have been nearly impossible to change minds that had deeply entrenched ideas about the learning process, the relationship between students and teachers, the role of the teacher in their student's developmental journey, and the aim of education to support social and community development (Richards 2010). Philosophical support from the global Baha'i community in some cases,

and FUNDAEC's role in conducting the training of trainers in most cases, helped to maintain this coherence in vision during SAT's initial growth and expansion.

In addition to coherence in vision across SAT's actors, SAT's success required a deliberate pedagogical and ideological stance toward the building of strong social relations, a sense of belonging, and concern toward others—something that is lacking in many educational contexts around the world (Murphy-Graham and Lample 2014, 60). A mixed-methods study of the Honduran SAT program suggested that in order for the program to have succeeded in achieving learning outcomes such as increased compassion, trust, and empowerment, these elements had to be integrated throughout all its curricular areas. For example, students needed to be encouraged by tutors to think deeply about textbook material that dealt with socially responsible behavior; they needed to have the opportunity to discuss together the ideas behind such a concern for others

and the circumstances competing against or supporting responsible action; and then they needed to put these ideas into practice through relevant and meaningful activities in their communities. On top of all this, SAT implementing partners had to design the program in ways that helped to cultivate an intrinsic, personal desire in students to perform such socially responsible acts, rather than orient students toward short-term extrinsic factors like grades and examinations (Honeyman 2010).

Underlying all the SAT centers across Latin America is the philosophy of developing a generation of socially minded young people who can serve

as engines of sustainable development in their communities. In short, SAT's innovations in rural education redefined learning as a holistic and moral endeavor. From reimagining the role of teachers and students, to reorienting the purpose of education, to revising indicators of learning that are meaningful and relevant for rural society, SAT's success in catalyzing an education revolution is reflected in the improved well-being of rural communities throughout Latin America. As global problems continue to grow more complex and indiscriminate about geography, this kind of transformative learning model will be ever more relevant in mobilizing rural youth in the creation of more sustainable communities.

Lessons learned

- Slow and incremental demand-driven expansion enabled SAT to learn and refine along the way, maintaining high quality and the underlying essence of its curriculum.
- SAT's alignment with national priorities was paramount to its success as an alternative formal secondary school program. By assisting governments to provide quality secondary education to difficult-to-reach rural communities, SAT was able to grow within an enabling policy space rather than appear threatening to the status quo.
- Strategic partnerships between implementing NGOs and government agencies enabled the creation of strategic alliances and interinstitutional networks that facilitated program management, financing, and risk reduction. The key to these partnerships was maintaining discrete roles for each actor.
- Implementing organizations have had to maintain a delicate balance between SAT's autonomy from and integration into the national system. Though SAT's integration into government was a sign of success, it also risked the potential loss of fidelity to the original SAT model.
- The creation of a network of like-minded organizations allowed FUNDAEC to play a limited role in adaptations of SAT in other countries. After FUNDAEC's initial assistance in getting the program off the ground, the local implementing NGO "owned" the program, enabling SAT to respond to local needs and the realities of rural communities. A strong coherence in vision, values, and philosophy across all components of design and administration helped to make the SAT model highly effective in achieving its larger social learning outcomes, fueling its catalyzing of an education revolution.
- Flexible adaptation was key to replicating SAT in other contexts, although identifying and controlling core components was essential to preserving the essence of the SAT program. For instance, FUNDAEC's copyright of the SAT curriculum enabled it to control SAT's core vision and methodologies, no matter where it was exported.
- Demonstrating impact through external evaluations and empirical evidence was critical for proving the SAT model. However, given the program's complexity, allowing individuals to personally witness results in the community was particularly important for gaining political allies early on, especially in communities that viewed alternative education programs as inferior.
- Rethinking the role of the teacher as a tutor, who guides students in both their moral and character development and in the exploration of knowledge, helped to orient the SAT learning process to the needs of students. By removing the traditional hierarchy between teacher and student and by extending the tutor's responsibility to students beyond the classroom, the SAT learning model transformed learning into a more equitable experience. Finally, because tutors were hired from the community, tutors were more committed to directing the learning process toward solving practical problems faced by students' (and tutors') communities.
- Defining education more broadly as about capabilities, rather than traditional academic subjects, helped to further orient SAT's educational outcomes toward developing the skills, values, and abilities that would empower students to more actively and effectively participate in the development of their communities. Furthermore, by anchoring the learning process in an experiential approach, or learning by doing through applied learning projects, students learned abstract concepts more effectively, despite SAT tutors' less formal qualifications.

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Endnotes

1. Textbook sales also contribute about 70 percent of the operating budget for the Asociación Bayán, the implementing organization of the Honduran SAT program.
2. At one point, there were nearly 8,000 students, but a coup in 2009 led to a temporary freeze of funding from the Inter-American Development Bank, which in turn led to a reduction in the number of SAT centers.
3. Related research (Muralidharan and Sundararaman 2010; Duflo, Dufas, and Kremer 2012; Bold et al. 2013) has found that incentive-based mechanisms like flexible teacher contracts can improve test scores.
4. In SAT's early days in Colombia, its operations were mainly funded by government agencies. The program also benefited tremendously from the financial support of large, external institutions like the Rockefeller Foundation and the Kellogg Foundation, which helped support research projects and the production of textbooks, and later the Baha'i World Center and the UK Department for International Development, which were willing to take risks and accept the challenges inherent in starting a new initiative.
5. During the expansion of the Honduran SAT program, Bayán did not grow its staff. As of 2014, it had a staff of 17 members, 8 of whom were technical experts.
6. In some cases, these policy moments have ridden on the backs of tragic events. For example, when Hurricane Mitch hit Central America in 1998, communities recognized that government would not be able to rebuild the country alone. As a result, greater support for NGO-led efforts like SAT emerged within communities and governments.
7. This "learning by earning" component of the Nicaraguan SAT program has also helped ensure the program's cost-effectiveness.
8. For instance, 30 percent of Bayán's operating budget comes from donors and local businesses. The remaining 70 percent of its budget is self-financed from textbook sales.
9. Tutors' salaries are the SAT program's largest recurring cost.
10. However, with the constant turnover of policymakers and politicians, SAT's implementing organizations have learned the importance of putting everything into agreements, so that as administrations and government personnel change, the implementing NGO can refer to binding agreements.

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