

JOURNEYS TO

SCALE

Accompanying the Finalists of the
Innovations in Education Initiative

PRODUCED IN PARTNERSHIP BY



CENTER FOR
EDUCATION INNOVATIONS

An initiative of Results for Development Institute

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JOURNEYS TO

SCALE

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UNICEF promotes the rights and wellbeing of every child. Together with our partners, we work in 190 countries and territories to translate that commitment into practical action, focusing special effort on reaching the most vulnerable and excluded children, to the benefit of all children, everywhere. UNICEF's approach to innovations—an approach defined as doing something new or different that adds value—has helped for over almost 70 years to accelerate results that reduce inequities for children. UNICEF's Education Section provides policy and programming expertise on the ground, and is involved in advancing education in countries around the world. UNICEF is a global leader in advocating for equity in education and improvements in learning outcomes, and is at the forefront of promoting inclusion of Education for All goals in the post-2015 development agenda.

Results for Development Institute (R4D) is a global nonprofit organization working with partners in more than 55 countries to find new ways to help people escape poverty and reach their full potential. The **Center for Education Innovations (CEI)** is an initiative of R4D that supports the organization's commitment to accelerating and scaling up development impact by identifying, analyzing, and connecting promising programs. CEI's network of innovators includes over 700 education programs, more than 50 funder organizations, and engaged communities of practice focused on early childhood development, program management, and other issues critical to increasing access to quality education for all.

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EXECUTIVE SUMMARY

As has been well documented, the last two decades have been marked by a significant increase in the number of children who have access to schooling. Yet, millions of children still lack the opportunity to attend school and those that do are often not learning.¹

This growing recognition of what UNESCO noted as the “global learning crisis” has coincided with a proliferation of promising innovations in education.² These innovations range in both form and function, from results-based financing instruments to novel pedagogical instructional techniques to play-based learning practices. While none of these innovations are silver bullets, they hold the potential to complement effective existing practices, displace ineffective ones, and ultimately accelerate improvements in learning.

THIS REPORT TELLS THE STORY OF FIVE SUCH INNOVATIONS AS THEY ATTEMPT TO SCALE—AND ULTIMATELY IMPROVE LEARNING OUTCOMES.

To effectively leverage innovations, it is critical to identify those which hold potential, test them in a specific context and, depending on the results, adapt and scale them to other contexts. Ultimately, this scaling up process renders new evidence of an innovation’s ability to mainstream in larger education systems. In an effort to support this cycle, UNICEF and the Center for Education Innovations (CEI)³ partnered to initiate UNICEF’s first-ever *Innovations in Education Initiative*. 162 programs, sourced from UNICEF and CEI, applied to receive financing from UNICEF and technical support from both organizations.

Based on a number of criteria, such as equity, learning, access, and systems strengthening, five innovations were named finalists. These innovations include:

CAN’T WAIT TO LEARN (SUDAN): Supported by facilitators who are trained in child-friendly approaches, children who have never attended school use solar-powered tablets to access the official Sudanese Alternative Learning Program’s math curriculum for grades one to three, through a self-guided game.

PALAVRA DE CRIANÇA (BRAZIL): Teacher training, parental engagement, and use of assessment data are employed to strengthen school readiness and achieve basic literacy for all children by the end of grade three.

ACCELERATED SCHOOL READINESS (ETHIOPIA): Grade one teachers are trained in engaging pedagogical methods, used to teach an accelerated, two-month curriculum to 6-year-olds to promote pre-literacy, pre-numeracy, and positive attitudes toward school.

LIVELY MINDS (GHANA): Volunteer mothers from the community are trained in play-based learning and health activities to improve school readiness, socio-emotional, and health outcomes for young children.

EDUTRAC (PERU): Mobile technology is used to gather educational data in remote communities to inform decision-making at regional and local levels. These data include teacher and student attendance, timely delivery of education materials, and school maintenance.

¹ UNESCO (2013).

² *Ibid.*

³ The Center for Education Innovations is a global database of over 750 education innovations administered by Results for Development Institute.

Over the past year, as these innovations have tried to build their models and measure their impact, CEI has documented their journeys to scale. Through this documentation process, a number of insights have emerged across four domains:

DEFINITION

The five innovations challenged ideas about what it means to scale an innovation, highlighting the reality that scaling does not happen in a straightforward manner and that progress is often accompanied by setbacks. They revealed that the conventional idea of scaling as simply the process of reaching more beneficiaries does not account for steps like the inclusion of new services to an existing package of interventions, the formation of new alliances with government and donor partners, and team capacity building.

KEY FINDINGS

- Scaling is about more than simply increasing the numbers of beneficiaries.
- Innovation is about more than the intervention itself. It is about a broader and deeper spread of new norms and beliefs.

CONTEXT

The case studies highlight the importance of designing an innovation with deliberate consideration of the environment in which it will reside, especially for technology-based programs. At the same time, the profiled innovations also underscore the truth that resources are finite and that customization is not costless.

Context also influenced pace of scaling. The speed at which innovations scaled was driven by windows of opportunity, especially around donor support. Innovators had to walk a careful balance between pragmatically taking advantage of such windows of support and carefully rolling out a program once a pilot had proven its effectiveness.

KEY FINDINGS

- Careful consideration for the surrounding context is necessary for technology-based interventions to achieve their intended impact.
- Trade-offs must be made between customization and replicability of innovations which aspire to scale.
- There may be trade-offs between optimizing program design and “seizing the moment.”
- To ensure continued relevance of an innovation, intensive local collaboration is vital.
- The choice of a pilot site may have important implications for the success of a program.

PARTNERSHIPS AND PEOPLE

The current development discourse rightly notes the potential of partnerships to amplify a program's impact. While this is often the case, these case studies also speak to the double-edged sword that is a partnership, challenging the commonly held notion that the more partnerships, the better. Each of the five innovations benefited from collaboration with other partners—yet such alliances come at a cost, including dedicated personnel time to cultivate a shared sense of purpose and an agreed timeline to achieve results. Their experiences suggest that while new alliances can yield new benefits or connections, they need to be developed with great intentionality.

Beyond partnerships, the importance of individuals was highlighted during the one-year incubation phase: where there was strong personnel and leadership, programs were better able to overcome unanticipated challenges.

KEY FINDINGS

- The reputation of institutional partners can catalyze buy-in for an innovation.
- Active community engagement must be matched by strong institutional commitment.
- Managing complex, multi-stakeholder partnerships requires sustained effort and differentiated approaches.
- Human capacity at all levels matters.
- A culture in which key staff members feel ownership and a sense of empowerment can improve results and create a more sustainable model.

STRATEGIC PLANNING

The five profiled innovations showed mixed evidence of long-term planning. While we don't know how the innovations' journeys to scale will end, those that have adopted a long-term view by identifying sustainable sources of financing, adopting strategies to drive down unit costs, planning for scale from day one, and consistently evaluating their impact, appear to be better positioned to achieve long-term sustainability and handle unforeseen challenges.

KEY FINDINGS

- Continual testing and experimentation can enhance the likelihood that an innovation will effectively scale.
- Designing with scale in mind from day one may bolster the chances that an innovation meets its scaling target.
- Buy-in cannot be viewed as a single activity to be carried out upfront.

In light of these findings, a number of priority actions emerge. These 10 recommendations are oriented toward different, but equally important, stakeholders who support the scaling of innovations.

DONORS

PROVIDE FLEXIBLE, MULTI-YEAR FUNDING:

The provision of flexible, long-term funding responds to the reality that the scaling process will inevitably involve some setbacks. This modality also provides autonomy to implementers, who are closest to the ground, and often best placed to make judicious resource allocation decisions. In contrast, the short-term funding paradigm used by UNICEF's *Innovations in Education Initiative* highlights some of the pitfalls associated with not adopting this approach.

THE PROVISION OF FLEXIBLE, LONG-TERM FUNDING RESPONDS TO THE REALITY THAT THE SCALING PROCESS WILL INEVITABLY INVOLVE SOME SETBACKS.

SUPPORT PEER LEARNING: The observed challenges across the five innovations were not unique. There may be value in providing regular opportunities for implementers to share their experiences and jointly develop approaches to common operational challenges.

ACKNOWLEDGE NON-FINANCIAL CONTRIBUTIONS DURING EARLY PLANNING STAGES:

Multi-stakeholder partnerships hold the potential to amplify the impact of an innovation, especially if the unique skills of partners are adequately exploited. For example, donor organizations can serve as more than simply sources of funding—they often bring connections to key actors, technical assistance, and communication channels. Early dialogue with partners about expected contributions can serve to maximize a project's potential and set appropriate expectations about roles.

PRACTITIONERS

USE MONITORING DATA TO INFORM LEARNING, ESPECIALLY DURING THE DESIGN PHASE:

Beyond just encouraging accountability, monitoring data can be used to enhance learning, inform scaling decisions and improve programmatic design. While there is particular value in using data collected early in the innovation design phase to make adjustments to a model, this should be a continuous process as the program scales.

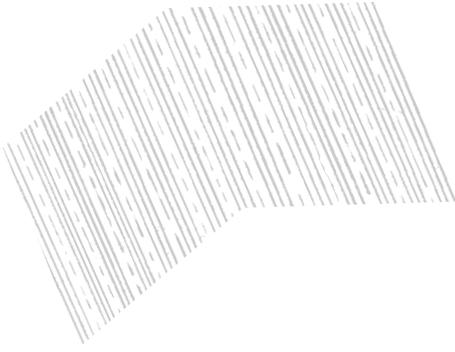
BE CONSCIENTIOUS ABOUT INVOLVING THE VOICES OF USERS, ESPECIALLY MARGINALIZED GROUPS:

Designing programs with end users, especially the most marginalized (whose voice is often not sought out during an innovation's formative stage), is not only important for reasons of equity, but also may lead to very practical improvements in program effectiveness.

SMALL, SYMBOLIC ACTIONS MATTER:

The potential value of low-intensity, symbolic actions in cultivating, and especially maintaining, buy-in should not be overlooked. While for some partners, rigorous impact data are critical for engendering support, for others, site visits or co-sponsorship of events can yield similar benefits.





RESEARCHERS

DISSEMINATE RESEARCH ON SCALING TO INNOVATORS: There is a growing body of literature around scaling innovations in education, yet the risk of programs “reinventing the wheel” remains high. Greater efforts are needed to disseminate research and present evidence in ways that promote the uptake of lessons learned and best practices (e.g. through experiential learning activities).

REVIEW THE USE OF TOOLS FOR ASSESSING SCALABILITY AND READINESS TO SCALE: The above-mentioned uptick in research around innovation and scaling has been accompanied by the development of a potentially useful set of tools to assess scalability, most notably the Management Systems International (MSI) Scalability Assessment Tool.⁴ Understanding how and in what contexts these tools have been employed will help assess their predictive potential and maximize their use.

WHILE THE EFFECTIVENESS OF AN INNOVATION SHOULD BE A CENTRAL ELEMENT IN A GOVERNMENT’S DECISION TO ADOPT OR SCALE A PROGRAM, EQUAL WEIGHT SHOULD BE GIVEN TO AFFORDABILITY AND AVAILABLE FUNDING.

POLICYMAKERS

ESTABLISH CLEAR POLICY TARGETS: Evidence from the innovations speaks to the catalytic value of establishing clear policy targets—especially those born of consensus-building activities. These targets can serve as a rallying cry to mobilize widespread support for a program and thus provide an enabling environment for the incubation of new innovations.

INVEST IN RIGOROUS FISCAL SPACE ANALYSES: While the effectiveness of an innovation should be a central element in a government’s decision to adopt or scale a program, equal weight should be given to the program’s affordability and available funding. Investment in costing, cost-effectiveness, and fiscal space analyses can forestall adoption of effective yet unsustainable innovations.

While these recommendations aim to stimulate further discussion about pathways to scale, as well as offer a practical set of actions, they should not be interpreted as a definitive guide for scaling. To do so would fail to recognize the diversity of contexts in which innovations reside. Instead, we hope that others will draw their own insights about what it means to scale an innovation and take inspiration from the stories presented here.

⁴ The criteria found in the MSI tool are as follows: 1) Is the model credible? 2) How observable are the model’s results? 3) How relevant is the model? 4) Does the model have a relevant advantage over existing practices? 5) How testable is the model? and 6) Is there a sustainable source of funding?, from Cooley & Linn (2014).

Introduction



WHY THE INNOVATIONS IN EDUCATION INITIATIVE?

The world has made impressive gains in access to education since 2000. According to the UNESCO Institute for Statistics, the global primary completion ratio, which was 80.9 percent in 1999, was estimated to be 90.8 percent in 2013. In Sub-Saharan Africa, this ratio increased from 54.2 to 69.1 percent over the same time period.⁵ The number of out-of-school children ages 6 to 15 around the world has fallen from 98.7 million in 2000 to 59.9 million in 2013.⁶

Despite these successes, far too many children are still left behind and not learning. Today, one in six children in low- and middle-income countries—or almost 100 million—will not have completed primary school.⁷ Estimates suggest that at least 250 million of the world's 650 million children of primary-school age are not learning the basics in reading and mathematics, and in 2015 alone, 75 million children and young people ages 3-18 had their education disrupted or interrupted by humanitarian crises.^{8,9} These numbers underscore a pressing need for rapid yet lasting improvement in educational outcomes worldwide.

THERE IS A GROWING RECOGNITION THAT MAINTAINING THE STATUS QUO IS INSUFFICIENT.

There is a growing recognition that maintaining the status quo is insufficient. Simply expanding the current education system will not reach the most marginalized children nor help more children to learn. Encouragingly, evidence of teachers, schools, and occasionally whole systems “beating the odds” by producing educational outcomes well beyond reasonable expectations is ample. In many instances, innovations, which are meant not to replace but to complement the strengthening of education systems, have contributed to such success.

To optimally leverage such innovations, it is critical that what works be identified, tested, and potentially scaled. This three-stage process has proved challenging, in part because of weaknesses in data collection and a corresponding dearth of information necessary

for identifying and assessing education innovations. Critical markers of education success—whether children start school at the right age, whether they attend regularly, how much time is spent on teaching and learning, and most significantly, whether children are actually learning—are not accurately and efficiently monitored in many countries. Moreover, promising innovations are often unable to expand their impact because they lack funding. Good ideas, many of which would profit from testing and experimentation on a larger scale, do not appear on interested funders' radar, and when they do, they are often not given adequate time to prove their effectiveness.

WHAT DO WE MEAN BY AN IMPACTFUL, SCALABLE INNOVATION IN EDUCATION?

We define an impactful, scalable innovation in education as a program, product, service, process, or partnership with the following four characteristics:

- 1. IS NEW.** This could mean that it is a new idea, is a variant of an existing idea, or is new to a particular context.
- 2. IMPROVES EQUITY OR LEARNING OUTCOMES OR STRENGTHENS EDUCATION SYSTEMS.** This implies that innovations are addressing a proven need and have an integrated monitoring and evaluation (M&E) component that applies appropriate instruments and metrics to assess improvement.
- 3. HAS TRACTION WITH ITS USERS AND STAKEHOLDERS.** Far too many interventions fail because they are not demand-driven and, once deployed, are not used by the people they are designed to help. Research that demonstrates proof of use should be conducted in the design process before larger investments are made.
- 4. HAS THE POTENTIAL TO MATCH THE SCALE OF THE PROBLEM.** Global problems or challenges require solutions that, by design, can be adapted or grown without sacrificing cost-effectiveness, affordability, or quality.

⁵ UNESCO Institute for Statistics; World Bank (2016).

⁶ UNESCO Institute for Statistics (2015).

⁷ UNESCO (2014).

⁸ *Ibid.*

⁹ Nicolai et. al. (2015).

SELECTION PROCESS

To answer the call for identifying and supporting effective innovations, UNICEF and the Center for Education Innovations (CEI)¹⁰ embarked on a comprehensive search and selection of promising ideas and practices in education through the *Innovations in Education Initiative*. A total of 162 innovations were sourced from programs in the CEI database and UNICEF Education experts, with five named as finalists. UNICEF provided financing, with CEI and UNICEF providing technical support to programs during a one-year testing phase.

Programs included in this search ranged in approach from open-source technology solutions aimed at out-of-school children, to school improvement tools, to community-based early childhood interventions, to data-for-accountability models intended to strengthen national education information systems. These programs also varied in terms of their stages of development.

Care was taken to ensure that candidates were scored on the strength of their approach, rather than on the basis of proven effectiveness. This was intentional, to enable serious consideration of innovations in the design phase.

EACH SUBMISSION WAS ASSESSED ACCORDING TO THE FOLLOWING CRITERIA:¹¹

- **LEARNING:** Does the program aim to directly promote learning outcomes by improving the quality of instruction, providing good-quality learning materials for students, offering alternative learning processes and pathways, and/or increasing preparedness?
- **EQUITY:** Does the program aim to serve the most marginalized children (the very poor, children in crisis situations, children with disabilities, girls, out-of-school children, ethnic, and religious minorities)?
- **ACCESS:** Does the program aim to reduce physical, financial, or sociocultural barriers to education?
- **SYSTEMS STRENGTHENING:** Does the program aim to increase accountability, engage communities to strengthen systems, and/or offer capacity building?

DEFINITIONS USED TO CATEGORIZE EACH EDUCATION INNOVATION BY STAGE

DESIGN/PLANNING STAGE	Not yet in operation but programmatically relevant.
PROTOTYPE/SMALL PILOT	Operational, but minimal testing has taken place.
WORKS AT A LIMITED SCALE	Has demonstrated proof of concept at small scale.
MATURE PROGRAM	Has already been tested at subnational levels with positive results.

¹⁰ The Center for Education Innovations is a global database of over 750 education innovations administered by the Results for Development Institute.

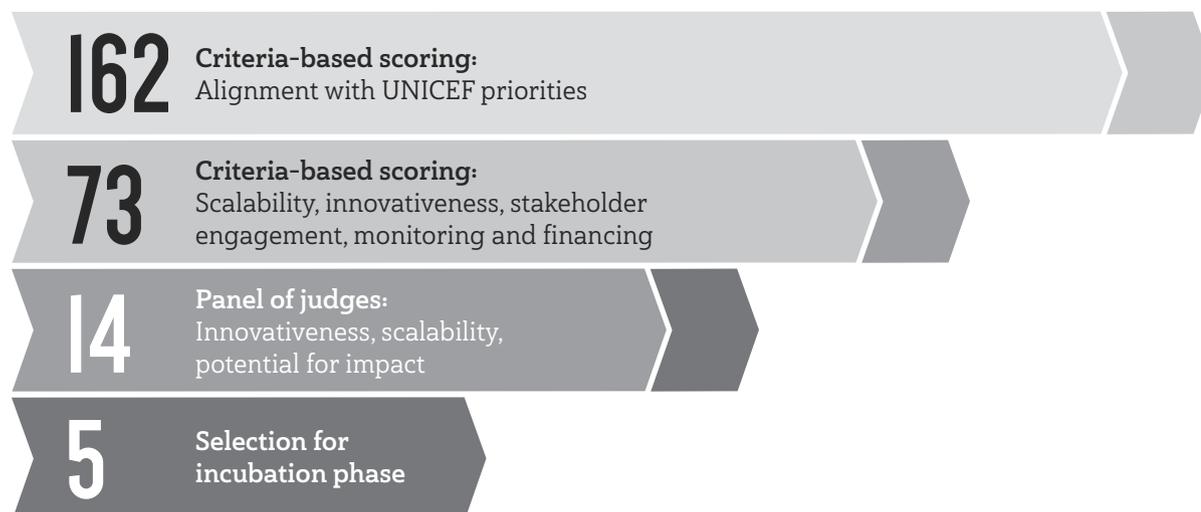
¹¹ Equity and learning were given greater weight, in line with UNICEF's strategic priorities.

BASED ON AN ASSESSMENT OF THE PROGRAMS AGAINST THESE CRITERIA, 73 WERE SELECTED TO MOVE TO A SECOND STAGE OF ASSESSMENT AGAINST ADDITIONAL CRITERIA:

- **INNOVATIVENESS:** Is the program new or different in the context where it operates and/or does it have a particularly innovative component?
- **SCALABILITY:** Is the program of low complexity and/or able to use existing infrastructure? Does it address problems common enough to be relevant in other locations or contexts? Has a program costing taken place? Is it capable of “expanding, adapting, and sustaining...over time for a greater development impact?”¹²
- **STAKEHOLDER ENGAGEMENT:** Does the program engage communities and have their support? Does it engage the government and have its support?
- **MONITORING:** Are systems planned or in place to monitor program outputs?

After these criteria were applied and an additional round of vetting was done by UNICEF Regional and Country offices, 14 programs were presented to a panel of experts for in-person discussion and ratings. Experts were asked to rate each program on scalability, sustainability, and innovativeness, as well as the extent to which each program design fit with the Innovation Principles.¹³ Annex 1 provides examples of how the winning innovations have exemplified these principles since their selection.

162 TO 5



¹² Cooley & Linn (2014), p. 2.

¹³ These principles, which are relevant for both IT and non-IT based innovations, include Design with the user; Understand the existing ecosystem; Design for scale; Build for sustainability; Be data driven; Use open standards; Reuse and improve; Address privacy and security; and Be collaborative. Digital Development Principles Working Group.

THE FINALISTS

Over the past year, these five programs have strengthened and grown their models, while striving to collect evidence on their effectiveness.

This has meant different things to each finalist. Lively Minds is expanding its five-year-old program to 50 new communities in northern Ghana while also measuring the effectiveness of a new training-of-trainers (ToT) approach. For EduTrac Peru, UNICEF and Kunamia (a local NGO) are piloting and evaluating the program in two regions. In Brazil, the Palavra de Criança team is adapting the program from one state in the semi-arid region of the country to another, geographically distinct one, while developing an evaluation design. The Accelerated School Readiness team has used the past year to pilot its program in northwestern Ethiopia, while readying for a randomized control trial in 2016-2017. Finally, in Sudan, the Can't Wait to Learn team leveraged UNICEF-CEI support to advance research on the effectiveness of the eLearning mathematics module while furthering plans for a reading-focused module of the game.

CAN'T WAIT TO LEARN (SUDAN):

e-Learning for out-of-school children in conflict-affected areas

Through Can't Wait to Learn, children who have never attended school can access the official Sudanese Alternative Learning Program's math curriculum for grades one to three through a self-guided game on solar-powered tablets. The children use the tablets in community spaces and are supported by facilitators who are trained in the tablet technology and child-friendly approaches.

PALAVRA DE CRIANÇA (BRAZIL):

A comprehensive approach to improving literacy and learning

This program, which began in Piauí state, combines teacher training, parental engagement, and use of assessment data to ensure basic literacy for all children by the end of grade three and to promote a learning disposition among early learners.

EDUTRAC (PERU):

Mobile monitoring of educational data

EduTrac uses mobile technology to gather educational data in remote communities to be used for information-based decision-making at regional and local levels. These data include teacher and student attendance, timely delivery of education materials, and school maintenance. Communities are involved in the collection, interpretation, and use of such data.

ACCELERATED SCHOOL READINESS (ETHIOPIA):

Innovative interim pre-primary readiness program

This pilot program trains grade one teachers in engaging pedagogical methods, which they use to teach an accelerated, two-month curriculum to 6-year-olds to promote pre-literacy, pre-numeracy, and positive attitudes toward school. The program is testing two delivery models: summer school before entering grade one, and replacing the first two months of grade one with this special curriculum.

LIVELY MINDS (GHANA):

Community-run, play-based learning for early childhood development

Kindergarten teachers and mothers from the community are trained in play-based learning and health activities to improve school readiness, socio-emotional and health outcomes for young children; engagement and knowledge development for parents; and development of age-appropriate instructional approaches among teachers.

CASE STUDIES

Informed by a combination of document review and site visits in late 2015, CEI has developed case studies on the five innovations' efforts to scale.

Site visits, which ranged from five to 10 days, involved program observations and interviews with a cross-section of key stakeholders, including program beneficiaries (children, parents, teachers, and facilitators), national and subnational government officials, donor organizations, and implementing organizations.¹⁴

WHERE APPROPRIATE, WE HAVE DRAWN FROM THE GROWING BODY OF LITERATURE TO REINFORCE HOW THESE INNOVATIONS EXEMPLIFY—OR CHALLENGE—EXISTING BELIEFS ABOUT SCALING.

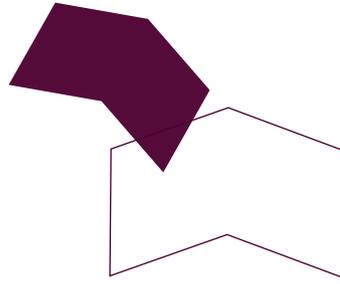
Above all, the case studies that follow tell the stories of the innovations: what problems they are attempting to tackle, how they came to be, what they are learning, and how they are measuring and increasing their impact. Importantly, they also aim to highlight challenges that these innovations have faced along their respective journeys to scale. Where appropriate, we have drawn from the growing body of literature to reinforce how these innovations exemplify—or challenge—existing beliefs about scaling.

There are several limitations to the case studies, with the absence of robust costing and financing

data being perhaps the most prominent. For some innovations, the program was either still in the pilot phase or had evolved considerably since the most recent costing, rendering such data misleading. Other limitations include questions about the representativeness of beneficiary interviewees (it may be that those with whom we spoke may not have reflected the diversity of views held by a larger sample of beneficiaries) and the dearth of rigorous impact data.

Lastly, although each of these innovations holds the potential to improve educational outcomes, the five were not chosen because they had already done so. All of the innovations documented here are attempting to show proof of concept; their ultimate success is yet to be ascertained. As a result, these case studies do not read as a “how to” manual for innovators. Instead, we hope that practitioners, donors, policymakers, and researchers find value in accompanying, and learning from, the experiences of innovations that are grappling with many of the same challenges they face. And while we offer takeaways at the end of each case study, we do so with a recognition that such lessons do not apply across all contexts. Instead, we hope that others will draw their own insights and take inspiration from the stories presented here.

¹⁴ Semi-structured questionnaires were used to conduct the interviews.



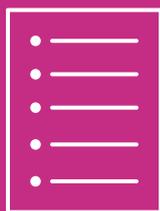
The Power of Partnerships



**LEVERAGING
THE MANY ASSETS
OF THE CAN'T WAIT
TO LEARN TEAM TO
PROVIDE EDUCATION
IN SUDAN**







SUMMARY

Can't Wait to Learn (CWtL) addresses the lack of access to quality education for Sudanese out-of-school 7- to 9-year-olds through the provision of open-source math learning based on Ministry of Education curricula. The program uses applied gaming on solar-powered tablets and relies on support from communities and facilitators rather than teachers.

CWtL aims to create a learning environment that helps vulnerable children build skills, develop sustained motivation to learn, and ultimately enter into Sudan's formal education system. CWtL has four innovative features: unlike other e-Learning games, it fully incorporates the Ministry of Education curricula, it takes into account the learning motivation and emotional experience of its users, it does not require electricity, and it has a user interface that is highly contextualized to Sudan.

In its first pilot of the mathematics curriculum, CWtL showed promising academic outcomes, with children in the program doubling their scores from 18 to 38 points out of 60 over six weeks. The program's second pilot results showed 31-point gains in scores from pre- to post-tests among children in the treatment group, with psychosocial research indicating positive effects on the self-esteem of both boys and girls.

Can't Wait to Learn has piloted its mathematics game with 655 children to date and aims to reach 170,000 out-of-school children across three countries by 2020.

WHY WAS IT SELECTED?

Can't Wait to Learn team members showed a relentless commitment to measuring the effectiveness of their intervention, thereby holding themselves accountable for demonstrable improvements in children's learning and self-esteem. Their proposal was also a refreshing departure from the often-seen tactic of parachuting in technology as a solution; to the contrary, implementing partners spent considerable time working with stakeholders to ensure relevance and traction, creating a game that is engaging for children living in pastoralist societies, leveraging community resources, and supporting government systems with an alternative delivery model for official curricula. The team crafted design and implementation plans with scalability in mind from the beginning.

KEY TAKEAWAYS FROM THE CAN'T WAIT TO LEARN EXPERIENCE:

1 DESIGNING WITH SCALE IN MIND FROM DAY ONE MAY BOLSTER THE CHANCES THAT AN INNOVATION MEETS ITS SCALING TARGET.

Thinking about scale early informed the CWtL team's innovation management¹⁵ approach to game development and research. This resulted in a program with a streamlined delivery mechanism, replicable features, and plans for continuous research to help shape adaptation of the program.

2 TRADE-OFFS MUST BE MADE BETWEEN THE CUSTOMIZATION AND REPLICABILITY OF INNOVATIONS THAT ASPIRE TO SCALE.

The CWtL team navigated this trade-off by pairing more generic, content-based mini-games with a highly customizable user interface.

3 MANAGING COMPLEX, MULTI-STAKEHOLDER PARTNERSHIPS REQUIRES SUSTAINED EFFORT AND DIFFERENTIATED APPROACHES.

CWtL managers' understanding of the different priorities of program partners enabled them to tailor their interactions with each partner. At the same time, this has required considerable ongoing effort due to the large constellation of actors involved in CWtL. The CWtL experience also suggests that maintenance of larger partnerships imposes high transaction costs.

¹⁵ The Can't Wait to Learn team is defining "innovation management" as an approach allowing a group of actors to tap into their creativity to introduce new solutions for problems. This approach is based on hypothesis testing, designing for scale, high-quality management, and building an evidence base. Also, Can't Wait to Learn was formerly known as "e-Learning Sudan."



CONTEXT AND ORIGINS OF THE INNOVATION

SUDANESE EDUCATION AND OUT-OF-SCHOOL CHILDREN: Worldwide, the number of out-of-school children ages 6 to 15 stood at 59.9 million in 2013.¹⁶ The costs of out-of-school children are immense; one estimate finds that countries with large populations of out-of-school children (OOSC) could lose from 1 to 6 percent of gross domestic product in potential earnings.¹⁷

Since the end of its civil war in 2005, Sudan's stability and development have been affected by unresolved border disputes and ongoing conflicts in Darfur, South Kordofan, Blue Nile, and Abyei.¹⁸ In addition, since December 2013, Sudan has hosted around 50,000 refugee children from South Sudan who have fled the violence in their country; only 33 percent of

these school-aged children receive an education. These conflicts, combined with underinvestment in alternative education, have resulted in an out-of-school population of 1.96 million children of primary school age, or 37 percent of this age group—the highest rate of out-of-school children for all countries in the Middle East and North Africa.¹⁹ Additionally, one-third of out-of-school, primary-aged children in Sudan are unlikely to ever attend school.²⁰ Many children do not start school at the right age due to the long distances they must travel to attend classes or, in some cases, nomadic lifestyles that interrupt a traditional school schedule. Millions of children in Sudan are thus left out of the formal education system and lack alternative educational opportunities.

IT ASPIRES TO ENABLE VULNERABLE CHILDREN TO DEVELOP THE SKILLS AND KNOWLEDGE THEY NEED TO ACQUIRE A CERTIFICATE OF PRIMARY EDUCATION, WHICH WOULD ULTIMATELY ALLOW THEM ENTRY INTO THE FORMAL EDUCATION SYSTEM.

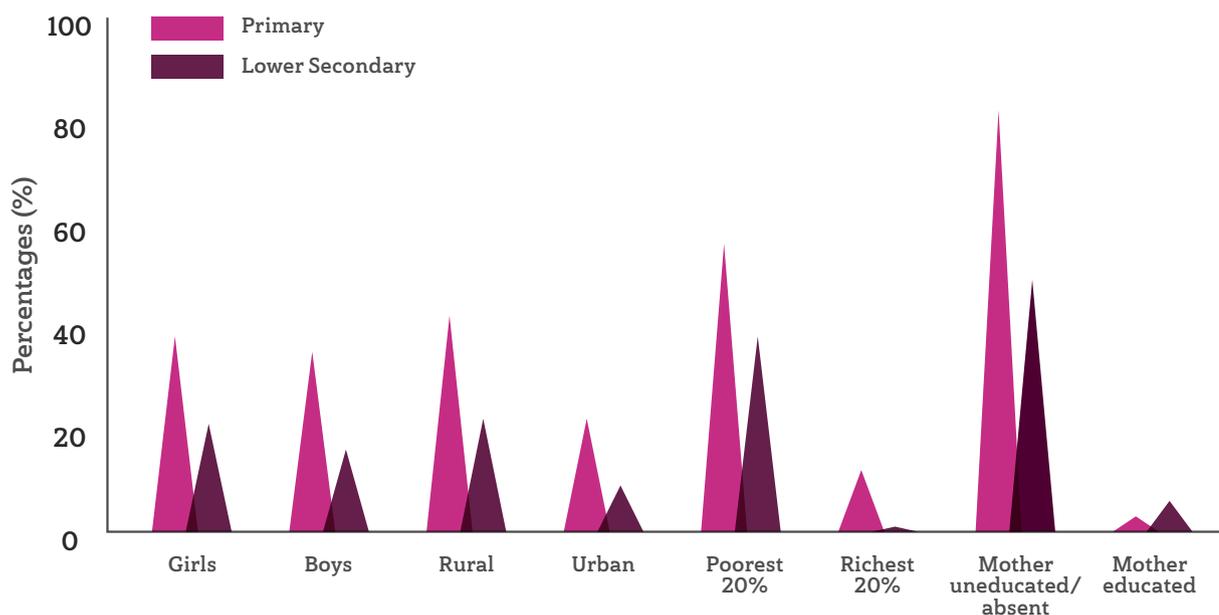
¹⁶ UNESCO Institute for Statistics (2015).

¹⁷ Thomas & Burnett (2014).

¹⁸ UNICEF (2014a).

¹⁹ Ibid.

²⁰ UNICEF (2014b).

FIGURE I.I: BACKGROUND CHARACTERISTICS OF OUT-OF-SCHOOL CHILDREN IN SUDAN*

*From UNICEF (2014) Sudan Factsheet. UNICEF Middle East and North Africa Regional Office, Amman, Jordan.

Can't Wait to Learn, which uses tablets and facilitators in remote village communities to provide math learning to children ages 7 to 9, has the potential to address the immense unmet need for alternatives to traditional education in Sudan. The program targets children who live in rural areas without ready access to schools, semi-nomadic children, and children living in communities of internally displaced persons (IDP). By relying on solar-powered tablets, a virtual game, and community facilitators to circumvent dependence on traditional school infrastructure and teachers, CWtL aims to provide a viable, low-cost alternative to traditional classroom instruction. It aspires to enable vulnerable children to develop the skills and knowledge they need to acquire a Certificate of Primary Education, which would ultimately allow them entry into the formal education system.²¹

ORIGINS OF CAN'T WAIT TO LEARN

From its early stages, Can't Wait to Learn has been supported by a well-integrated partner network. In Sudan, the government requires international nongovernmental organizations to forge partnerships with national NGOs. Managers of CWtL have turned this mandate into an asset by assembling a multi-disciplinary team with complementary strengths, resulting in a clear understanding of the context in which the innovation operates.

Dr. Aiman Badri, from Ahfad University for Women in Khartoum, was the initial champion of

the program in Sudan. Recognizing high levels of parental demand for education, Badri conceived of the potential for technology to help reduce the number of out-of-school children. He also played a critical role in gaining Ministry of Education buy-in and support for an e-Learning solution. The first step in developing this education technology program was to understand the problem, rather than impose an externally developed solution—an approach that attracted similarly motivated partners.²²

²¹ War Child Holland (2013).

²² McClure & Gray (2015b).

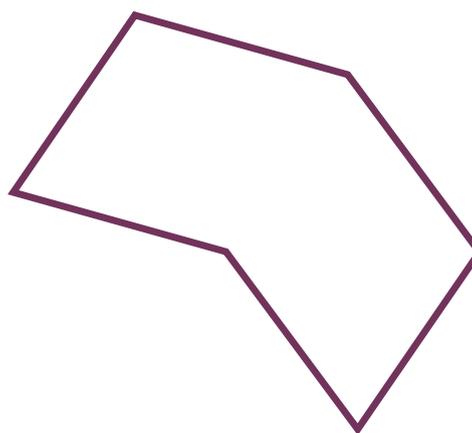
Ahfad University for Women (AUW), with which Dr. Badri is affiliated, began to develop the first iteration of Can't Wait to Learn in 2009 with support from UNICEF. AUW worked with Sudanese education specialists to test different types of technology and develop facilitator training. However, they encountered substantial challenges as they tried to incorporate the country's formal curriculum for out-of-school children, known as the Alternative Learning Program (ALP), into a virtual game. UNICEF then connected the university with War Child Holland (WCH), which could contribute additional capacity and financial resources. War Child Holland became the project's manager.

MANAGERS OF CWtL HAVE TURNED THIS MANDATE INTO AN ASSET BY ASSEMBLING A MULTI-DISCIPLINARY TEAM WITH COMPLEMENTARY STRENGTHS, RESULTING IN A CLEAR UNDERSTANDING OF THE CONTEXT IN WHICH THE INNOVATION OPERATES.

The early stages of Can't Wait to Learn coincided with the March 2009 decision of the Sudanese government to expel 13 international NGOs in an effort to "Sudanize" humanitarian operations.²³ As a result, international NGOs in Sudan were required to "take on and work through" national partners.²⁴ The formal partnership between the NGO arm of Ahfad University for Women, known as the Babiker Badri Scientific Association for Women's Studies, and UNICEF (and, subsequently, other international partners) fulfilled this requirement. These early partners worked together to lay the foundation for successful cooperation between the national and international organizations involved in the nascent e-learning program. To date, the CWtL team has been able to turn

the government's requirement into a strength by recognizing partners' individual assets and cultivating a shared vision of success.

Aside from contributing capacity and resources, War Child Holland helped to bring in additional partners for CWtL. It had an existing partner in Dutch research institute TNO,²⁵ which had significant experience in designing and researching e-learning and applied games. Combined, War Child Holland and TNO had the needed expertise to fully integrate the ALP curriculum into a game that could be played on tablets. With generous and flexible funding from the Dutch Ministry of Foreign Affairs' Conn@ct.Now²⁶ program, the two organizations developed and piloted Can't Wait to Learn with the help of other partners, including Flavour, a Dutch company that contributed software development expertise.



²³ FIC (2011), p. 11.

²⁴ Ibid., p. 12.

²⁵ TNO is the Netherlands Organization for Applied Scientific Research.

²⁶ For more information on Conn@ctNow, see War Child Holland's web page, www.warchildholland.org/connect-now.



TEAM COMPOSITION, DESCRIPTION OF MODEL, AND EVOLUTION

The individuals and organizations working on Can't Wait to Learn represent a diversity of backgrounds, knowledge, experience, and skills. The process of creating, implementing, refining, and scaling an e-learning program targeted at vulnerable children demands expertise in multiple subjects, including education, child psychology, conflict, out-of-school children, technology, software development, and graphics and design. CWtL team members possess a wide range of professional experiences in multiple fields, including applied gaming,

and mental health care in low- and middle-income countries. War Child Holland, Ahfad University for Women, and UNICEF successfully navigated the complexity of their project by adding partners, including TNO and Flavour, who could fill gaps in team skills and experience. In this way, CWtL's experience exemplifies Boorstin's suggestion that diversity in the perspectives of team members contributes to the early formulation of a "systems view"—a clear big-picture vision of the innovation.²⁷

CWtL'S EXPERIENCE EXEMPLIFIES BOORSTIN'S SUGGESTION THAT DIVERSITY IN THE PERSPECTIVES OF TEAM MEMBERS CONTRIBUTES TO THE EARLY FORMULATION OF A "SYSTEMS VIEW"—A CLEAR BIG-PICTURE VISION OF THE INNOVATION.

²⁷ Boorstin (2015); McClure & Gray (2015c).

TABLE I.I: KEY ACTORS AND THEIR ROLES IN CAN'T WAIT TO LEARN

ORGANIZATION	ROLE IN CAN'T WAIT TO LEARN
War Child Holland	Catalytic manager of CWtL project partnerships, financing, and research. Coordinates implementation through partners on the ground. Responsible for leading innovation management and scale-up strategy.
UNICEF	Early supporter of initial trial. Current co-funder and co-owner, with responsibility for facilitating lesson learning and sharing. Contributes to relationship-building and management with local states and policy discussions with the federal Ministry of Education. Also participates in monitoring project outcomes and advocacy/awareness-raising work.
Ahfad University for Women (AUW) & Babiker Badri Scientific Association for Women	Original partner with UNICEF. Local implementation and coordination partner and official national NGO partner. Co-facilitates and coordinates Working Group (see below) and community teams, which are responsible for e-learning rollout in individual communities and day-to-day monitoring. Responsible for training at federal, state, and community levels. Also received some limited funding support from UNESCO to work on Arabic reading game.
TNO (Netherlands Organization for Applied Scientific Research)	Research and development organization with expertise in applied gaming and distance learning. Leads CWtL curriculum digitization and game development and co-leads the program's research elements.
Flavour	Software developer responsible for the design of CWtL game world and mini-games. Works closely with TNO, War Child, and creative partners in Sudan to carefully integrate user input into game design.
National Council for Literacy and Adult Education (NCLAE) and e-Learning Sudan Working Group	Sudanese Ministry of Education body responsible for out-of-school education and the development and implementation of the Alternative Learning Plan. Presides over the CWtL Working Group and contributes one staff member each for content, monitoring, research, and project management. Helps manage relationships with the federal Ministry of Education, including building partnerships. Also provides federal coordinators, who oversee CWtL and approve reports, designs, etc.
Ministry of Foreign Affairs of the Netherlands	Provided significant five-year (2011-2015), flexible funding to War Child Holland and TNO through the Conn@ct.Now Program. The funding was aimed at support of innovation through to scale.

EVOLUTION AND KEY FEATURES OF THE CAN'T WAIT TO LEARN MODEL

Through multiple cycles of innovation, implementation, and learning, Can't Wait to Learn has developed a number of features that distinguish it from other innovations.²⁸ This repeating cycle includes a start-up phase, as well as game development, training, piloting, and sharing of results. The program employs a five-year window to plan its phases of development and research. Several rounds of its innovation-implementation-learning cycle have produced a game with four core features (see Box 1.1). The process for arriving at these features is detailed below.

BOX 1.1: THE FOUR INNOVATIVE FEATURES OF CAN'T WAIT TO LEARN

1. An embedded math curriculum and full instructional model.
2. A digital user interface that seamlessly integrates with reality.
3. Learning motivation and an emotional experience within the game that supports a vision of a positive future.
4. A delivery mechanism that works across resource-constrained environments (e.g. those in which power is often lacking).

During the program's start-up phase, Badri and Ahfad University for Women, with UNICEF support, trained children in the use of technology and tested the functionality of different versions of hardware and software. They examined how five types of devices would survive in local weather conditions, how solar

power would function, how Internet connectivity should be addressed, and whether the local community would be able to use the technology. In this way, Badri and his team ensured that the fundamental infrastructure requirements for CWtL were "understood and validated in the early Invent stage of the innovation journey," a critical step as McClure and Gray note.²⁹

The initial AUW team also worked with the authors of the ALP math curriculum to incorporate a teaching function into the game and develop facilitator-training modules.

Subsequent efforts built on this groundwork to create a delivery mechanism that was carefully tailored to work within the constraints of particular contexts, to be as accessible as possible for out-of-school children, and to engage communities. The CWtL team designed the intervention to reach children without access to existing schools by providing tablets in a central village location, thus enabling children to participate without leaving their community. The program addresses the limited power and Internet access in remote villages by relying on community members to build learning centers equipped with solar panels.³⁰ It also has two management systems—one in which the game can always be used offline, with student performance data gathered manually, and another in which the game is played online, while it automatically uploads data. By keeping tablets in community centers, the program allows multiple children to use a single tablet at different times of the day, and offers users flexibility to pause and restart games as needed to attend to family demands.

These features make CWtL responsive to local lifestyles, including semi-nomadic ones. AUW has led the program's community engagement by working with local leaders to set up small CWtL committees, which support facilitators and build the solar-enabled learning centers where children use the tablets. Among beneficiary communities, the program has been well received, with parents and community members eager to help construct and maintain learning centers and spread the word about the program. Some parents have also expressed a desire to use the tablets to improve their own numeracy.

²⁸ Cooley & Linn (2014).

²⁹ McClure & Gray (2015c), p. 10.

³⁰ War Child Holland (2013).

FIGURE I.2: THE EVOLUTION OF CAN'T WAIT TO LEARN



With baseline logistics in place, War Child Holland, TNO, and Flavour developed a preliminary version of the CWtL software to cover six weeks' worth of mathematics curriculum. After a pilot that demonstrated the initial success of this six-week game, the team developed six months' worth of math content for the game and recently completed a third game development phase to test an Arabic reading curriculum.

Throughout game development, War Child Holland, TNO, and Flavour have worked closely to gather multiple rounds of feedback and input from Sudanese stakeholders to inform subsequent versions of the game. TNO led the game development process with the support of Flavour. They focused on creating an educational game using human-centered design that promotes mastery, self-exploration, and self-education. They also ensured effective coverage and sequencing of the curriculum and worked with local partners to contextualize the game's visuals and content.

Unlike technology projects in which teachers convey content and students use software to practice what they have learned, Can't Wait to Learn actually does the teaching of the ALP math curriculum. It does not require users to have prior math knowledge or experience learning in a school setting.³¹ The game presents the curriculum through videos and other content in a meta-game and gives users the opportunity to apply and test what they learn in the more structured mini-games.³² Given the limited availability of schools in rural and remote areas, the context demanded that the game circumvent the need for teachers. Facilitators supplement the within-game instruction by managing the classroom environment, providing support on technical issues, and bringing the children together.

Furthermore, CWtL's game interface is meant to resemble the day-to-day environment of Sudanese 7- to 9-year-olds. Math content is embedded in a virtual world that reflects children's everyday lives, with game designers

³¹ *Ibid.*

³² The "mini-games" are essentially math exercises that students complete in game form. They involve activities such as counting fruit, and they fit into a broader "meta game" world. The "meta game" is the main user interface, and includes motivational elements, such as virtual role models who guide children through the game, and star and heart trackers, among other features.

using children's drawings of their homes and communities as the basis for the game world. The designers also took care to use symbols that would be familiar to the children, by basing the designs for "stop," "play," and other buttons on those of tape recorders, which many children have used. Additionally, the characters who explain math concepts in the game's videos are children. Taken together, these features allow children to focus their mental energy on learning math rather than on understanding an alternative virtual reality in the game.

In addition to the game's curriculum and user interface, the Can't Wait to Learn team aligned the learning motivation and emotional experience of the game to support a positive, but realistic vision of the future for its target users. For example, students develop counting skills within the context of a small shop, thus linking the skill of counting to a real occupation. The game also prompts children to contemplate their futures by asking them to think about their dreams. It includes both male and female role models of different vocations, such as teachers, doctors, and shopkeepers, who expose children to potential future occupations and guide them through the game world. These features set Can't Wait to Learn apart from other technology programs, as they go beyond passive delivery of digital content to deeply engage users. Through these motivational details, the CWtL game world conveys "learning attitudes" and helps "children in converting information into knowledge," a role that DeMelo, Machado, & Miranda note usually is played by teachers.³³

CWtL facilitators, who are nominated through state ministries of education, supplement the development of learning attitudes cultivated in the game by offering support and encouragement to children. These facilitators and local researchers, who are responsible for pilot data collection, receive training³⁴ led by AUW on child-friendly approaches and child protection. Since implementing this training, the CWtL team has been piloting the program and disseminating its research results. These are the next phases in the program's cycle of innovation and learning.

In its approach to research, the CWtL team has recognized the importance of using evidence to inform program design, assess impact, and establish credibility. The team's strategy has focused on exploring "the riskiest and most difficult questions" associated with CWtL by conducting multiple pilots before expanding in scale.³⁵ By identifying questions with the most uncertainty and potential impact—and then tackling these questions in stages—the CWtL research team has tested assumptions that, if wrong, could "kill the innovation's value," as McClure and Gray state.³⁶

IN ITS APPROACH TO RESEARCH, THE CWtL TEAM HAS RECOGNIZED THE IMPORTANCE OF USING EVIDENCE TO INFORM PROGRAM DESIGN, ASSESS IMPACT, AND ESTABLISH CREDIBILITY.

After each pilot of its evolving intervention, the CWtL team has shared results³⁷ with other actors in the humanitarian sector to help bolster open innovation³⁸ and advance the sector's approach to out-of-school children. Additionally, it has disseminated its results to potential partners to help gain support for the program. UNICEF has also played an important role in promoting the visibility of CWtL through its advocacy and awareness-raising work. The project was presented or displayed at a number of high-level events in 2015, including the World Education Summit in Incheon, South Korea. Through various forms of outreach and relationship building with donors, CWtL's managers have secured additional funding and partnerships. These include significant funding from the Dutch National Postcode Lottery's Dream Fund³⁹, IKEA Foundation, USAID, and additional support from UNICEF headquarters, UNICEF Sudan, and the Ministry of Foreign Affairs of the Netherlands.

³³ de Melo et al. (2014), p. 8.

³⁴ The training uses blended learning methods, combining digital and in-person sessions.

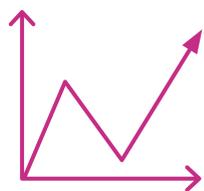
³⁵ McClure & Gray (2015b), p. 11-12.

³⁶ Ibid., p. 12.

³⁷ See subsequent section for detailed discussion of program results to date.

³⁸ According to Chesbrough, H.W., who coined the term: "Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology." See Chesbrough (2003).

³⁹ According to War Child Holland's press release, the Dream Fund "was founded in 2010 by the Dutch National Postcode Lottery to enable ground-breaking and brave initiatives from NGOs endorsed by the Lottery."



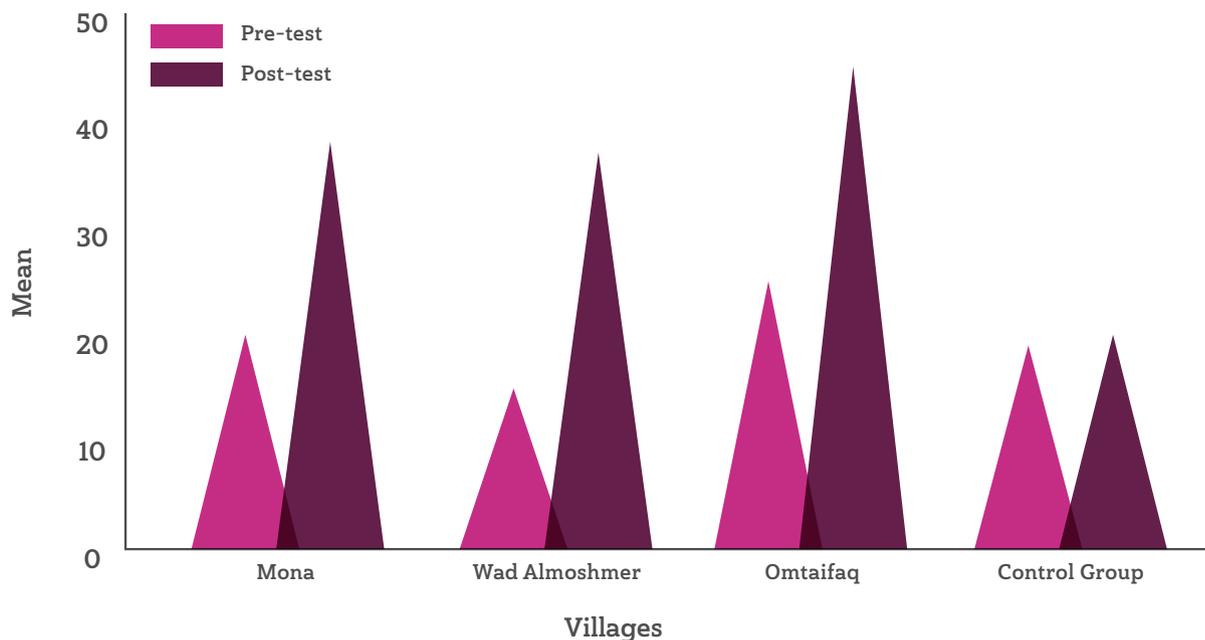
RESULTS TO DATE

The following are the key results of Can't Wait to Learn's pilots to date:

PILOT I: The CWtL team stage-gated its research, meaning that it would not allow the program to grow until the most pressing threats to the program were successfully addressed in a step-by-step manner. Following this approach, team members conducted a small preliminary pilot with 66 children over six weeks as a way to understand and mitigate the innovation's biggest risks before implementing the program more broadly. Through desk research, the team

had identified common elements in e-learning programs that could hinder student learning. These elements included illiteracy and lack of foundational skills, inadequate feedback to improve performance, and the inability to sustain motivation to learn over time. The team built multiple strategies⁴⁰ into the game to mitigate these conditions and used Pilot I to test whether the mitigation measures worked well enough to allow children to learn.⁴¹

FIGURE I.3: MATH PILOT I PRE-, POST-TEST RESULTS BY VILLAGE*



*From WarChild Holland, 2013.

⁴⁰ See Appendix 1 for full list of challenges and mitigation strategies.

⁴¹ War Child Holland (2013).

BOX I.2: CWtL'S 'INNOVATION MANAGEMENT' APPROACH

While they adhered to donors' requirements, CWtL's managers recognized that traditional project management and monitoring and evaluation approaches were inadequate to sufficiently address complex challenges in the innovation and scaling process. Instead, they took an "innovation management" approach that harnessed partner creativity through co-creation, in which different parties, including users, work together to solve problems.

In addition, CWtL's managers saw the need for ongoing feedback and research to inform their innovation. They thus supplemented pre- and post-tests with information from parent and child focus groups which helped them to understand demand for the intervention and barriers to usage. The team also took psychosocial impacts into consideration by measuring the effect that learning through the game was having on the emotional well-being of users. These methods have yielded a rich set of insights and enabled the program to continuously improve its effectiveness.

The team found positive learning outcomes, with children's oral math test scores doubling from 19.4/60 on the pre-test to 38.4/60 on the post-test, indicating that children with limited knowledge of math were able to acquire greater levels of comprehension through the intervention. Children in the control group did not increase their scores in the same period. The first pilot also found positive gender-equity results, with boys and girls showing similar improvements from pre- to post-test. Given the small number of participants, short duration, and quasi-experimental design of Pilot I, its results must be interpreted with caution.⁴² However, these positive initial findings enabled the CWtL team to move to the next phase and develop a six-month math curriculum to pilot and evaluate.

PILOT II: The second pilot tested two key issues: whether children's motivation to learn using CWtL could be sustained over a longer period of time and whether the program would be able to teach more complex math concepts. It also added a psychosocial research component to ensure that CWtL did not cause any harm and to gauge whether the program had positive motivational effects. The team also began to work in earnest on cost modeling and value-for-money exercises. Additionally, it included

technology usage research focused on understanding the access, functionality, and maintenance of the program's hardware.⁴³

Pilot II results, which drew on data collected from 517 children, must be interpreted with caution, as the control group of in-school children took pre- and post-tests on a different timeline than their CWtL counterparts.⁴⁴ Although CWtL participants did not score as highly as the control group in absolute terms, children using CWtL made significant learning gains (a 31-point gain in scores in one state, compared with a 36-point gain in the control). Children who knew the least at the time of the pre-test showed the biggest learning gains.⁴⁵

Results from the second pilot also showed that flexibility in timing is critical to ensure the accessibility of CWtL. Tablet log data have provided War Child Holland and TNO with insights into how children's game usage affects learning and effectiveness. For example, only 5 percent of children played the tablet game five times a week for all weeks of the six-month pilot. Children would sometimes have to take a week or more off at a time to help with farming, finding water, and other family responsibilities.⁴⁶ The partners found that the ability of children to play the game uninterrupted during a stretch

⁴² War Child Holland (2015).

⁴³ Since the program's value for money is changing as it evolves, these results are not yet final or available. But these exercises will have important implications for the financial sustainability of the program.

⁴⁴ Children in the control were exposed to more hours of "learning time" than the those in the intervention group. War Child Holland (2015).

⁴⁵ Ibid.

⁴⁶ Stakeholder interview.

of time and how far they progressed in the game were more important for quality of learning than how often the game was played.⁴⁷

Informed by the findings of previous research, and motivated by a desire to explore the relationship between access to high quality education and psychosocial well-being, Pilot II also examined the program's effects on children's confidence, self-esteem, self-efficacy, and motivation to learn.⁴⁸ Prior research showed that another e-learning program, One Laptop Per Child (OLPC), had "no statistically significant effect" on "motivation toward attending school and doing homework."⁴⁹ In contrast, CWtL focus groups conducted during Pilot II found positive impacts on self-esteem, with an increase from 1.9 to 2.5 points on a 4-point Likert scale, and no significant differences in the impact on boys and girls.⁵⁰

Finally, recognizing potential challenges not captured in the findings from Pilot II, the CWtL team has noted several barriers to the success of CWtL, including "significant dropouts in two

of the 19 villages" due to "communities moving on to look for water," as well as "problems in some villages with the community awareness, sensitization and participation processes."⁵¹ As a result, the team is exploring strategies for strengthening community engagement in the next phase.

LOOKING FORWARD: Research will continue to play an important role in Can't Wait to Learn as the team prepares to scale up the program within Sudan, and scale out through adaptation of the model for other countries. New components of the program, including an Arabic reading curriculum and a potential psychosocial component, will need to be tested.

As McClure and Gray note, ongoing research is necessary because "key assumptions that have been 'baked in' to a program's design may not be true in a different situation. Often perfectly valid design criteria in the original context are altered or even false in the new context...no amount of good work in the original design will seamlessly account for potential variations in context."⁵²

AS MCCLURE AND GRAY NOTE, ONGOING RESEARCH IS NECESSARY BECAUSE "KEY ASSUMPTIONS THAT HAVE BEEN 'BAKED IN' TO A PROGRAM'S DESIGN MAY NOT BE TRUE IN A DIFFERENT SITUATION. OFTEN PERFECTLY VALID DESIGN CRITERIA IN THE ORIGINAL CONTEXT ARE ALTERED OR EVEN FALSE IN THE NEW CONTEXT."

⁴⁷ War Child Holland (2015).

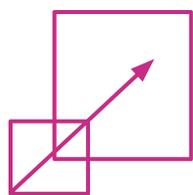
⁴⁸ War Child Holland (2014).

⁴⁹ Cristia et al. (2012), p. 16.

⁵⁰ War Child Holland (2015).

⁵¹ War Child Holland (personal communication, January 25, 2016).

⁵² McClure & Gray (2015a), p. 15.



SUSTAINABILITY MECHANISMS, SCALING PLANS, AND CHALLENGES

SUSTAINABILITY AND SCALABILITY-PROMOTING FEATURES

Can't Wait to Learn possesses a number of sustainability-promoting features that portend long-term success. Whereas in some cases, circumventing traditional education structures could undermine an intervention's long-term sustainability, for CWtL, requiring schools, teachers, electricity, or Internet access would imperil the program's ability to reach out-of-school children in Sudan and beyond. By minimizing requirements for existing infrastructure, CWtL is more adaptable and sustainable. Secondly, the CWtL team has engaged closely with the Ministry of Education to ensure that the program is aligned with the country's policies for out-of-school children. For example, the Ministry became involved early in the intervention through committees facilitated by AUW. The Ministry's involvement is especially important for CWtL to reach its long-term goals of encouraging student entry into the formal education system by giving students the opportunity to earn Certificates of Primary Completion.

Additionally, Can't Wait to Learn's game world has been carefully designed to balance

customization for Sudan with adaptability to other contexts. Though the user interface (the "meta-game") is highly customized for out-of-school children in Sudan, the mini-games were designed to cover generic math content and appeal to children in multiple countries. CWtL also uses open source software so that its code will be made freely available to others looking to reuse or adapt the program.⁵³

Furthermore, while UNICEF has provided financial, technical, and advocacy support, the success of CWtL does not hinge on this support alone, or that of any one organization. In Sudan, CWtL has a diverse group of supporting donors, and the collaboration between War Child Holland, Ahfad University for Women, and NCLAE on management and implementation has created a certain degree of resilience against difficulties that would ensue if any one partner were to exit. A similar structure and approach will be created in additional countries where the program is to be adapted.

Finally, although the ultimate "at-scale" costs of Can't Wait to Learn have yet to be determined, preliminary cost estimates for Sudan are encouraging. While CWtL's game development has been resource-intensive, accounting for 79% of the program's total costs to date in Sudan,

⁵³ This is in line with the Principles for Digital Development.

this is a one-time investment. Initial projections put CWtL costs at-scale in Sudan at US\$75 per year, per student, which is currently covered in its entirety by donor funding. This per-student annual cost is nearly US\$100 lower than the US\$172 annual unit cost of public primary school in Sudan.⁵⁴ As it scales, the program's dropout rates and the number of beneficiaries reached will affect the final cost per student. Though the current estimate is based on a small population, CWtL program managers will track and update participation numbers in the future, and expect the accuracy of their cost estimate to improve as more children enroll in the program.

SCALING PLANS⁵⁵

Can't Wait to Learn hopes to reach 170,000 children in marginalized communities in multiple countries over the next five years.⁵⁶ The team plans to scale the program in three ways: 1) by adding components to the program; 2) by bringing the program to more locations and beneficiaries within Sudan and 3) by expanding and adapting the program to meet the needs of children in other countries.

CAN'T WAIT TO LEARN HOPES TO REACH 170,000 CHILDREN IN MARGINALIZED COMMUNITIES IN MULTIPLE COUNTRIES OVER THE NEXT FIVE YEARS.

Can't Wait to Learn partners are currently developing and testing an Arabic reading curriculum for first through third grades. This ongoing work on reading takes inspiration from earlier work conducted by Ahfad University for Women and supported by UNESCO Sudan. The Arabic reading trial is a crucial step for the program, since children must learn Arabic in addition to math in order to earn their Certificates of Primary Completion. Were CWtL to be scaled with only a math component, it would not fully prepare children to enter the

formal education system. Can't Wait to Learn may also add more grades to its curriculum, extending math and reading to include fourth through sixth grades, and possibly adding kindergarten material for younger children.

Recognizing that the links between learning and psychosocial factors are bidirectional, the CWtL team is planning to add an explicit psychosocial component to the intervention. Until now, the program has examined only the impact of the learning it promotes on psychosocial outcomes. In the future, it plans to examine the impacts of a psychosocial well-being component on learning outcomes. It is as yet uncertain how this component will manifest itself, but it could be in the form of training for facilitators or through an additional feature of the game world.

Can't Wait to Learn managers are also planning to scale the program by bringing it to more states, villages, and beneficiaries within Sudan. In addition to remote communities, entry points for the program could include Alternative Learning Program centers and Internally Displaced Persons camps. Furthermore, the Ministry of Education has endorsed the program and made it part of a national literacy campaign, aiming to reach 500,000 out-of-school students. The government's eagerness to reach thousands of children as soon as possible arises in response to the pressing need for education alternatives for those who are out of school. But the inclusion of a strong Arabic reading component is necessary in order for the program to reach this goal, which will take time.

Lastly, the Can't Wait to Learn team intends to expand the innovation to other countries and has engaged in a process to evaluate options for expansion. Based on consideration of multiple factors, including education ministry plans, available partners, the location of target beneficiaries, and potential for scale, War Child Holland is targeting two Middle Eastern countries that have been affected by the Syrian crisis.

⁵⁴ Based on capital cost-adjusted Pôle de Dakar estimates provided by UNICEF staff.

⁵⁵ See Appendix 2 for detailed scaling plans and timeline.

⁵⁶ War Child Holland (personal communication, May 19, 2016).

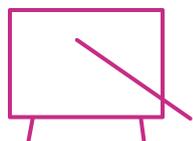
POTENTIAL CHALLENGES AND REMAINING QUESTIONS

As the Can't Wait to Learn program develops, several potential challenges could affect the innovation's scalability.

- LIMITED ACCESS FOR INTERNATIONAL NGOS TO CONFLICT-AFFECTED PARTS OF SUDAN:** This could become an obstacle to reaching additional beneficiaries within Sudan and will require sustained partnership with the Ministry of Education, the Government of Sudan, UNICEF, UNESCO, and others involved.
- EFFECTIVENESS OF THE E-READING CURRICULUM:** Whether the initial success of the numeracy module can be replicated for reading is uncertain. Teaching literacy involves more complex tasks than numeracy and may be difficult to translate into a tablet-based curriculum. The program may need to rely on face-to-face instruction, which could change value-for-money estimates and affect its ability to reach large numbers of out-of-school children.
- WHETHER CWTL BENEFICIARIES HAVE LEARNED HOW TO LEARN—AND CAN APPLY THIS IN A CLASSROOM:** Even if students learn the required content through CWtL, they may “graduate without knowing how to learn anything not embedded in a game,” as Toyama points out. “In other words, they will have not learned the most important lesson of a good education—how to be self-motivated learners who can learn new things on their own.”⁵⁷ Since the transition of CWtL beneficiaries from game-based to classroom learning is untested, it is unclear how their self-motivation and meta-cognition will translate.
- FINANCIAL SUSTAINABILITY:** CWtL has secured funding to support scale-up from a carefully targeted group of strategic funding sources, and thus its sustainability does not hinge on the involvement of one funder. But there is a need for funding to support the ongoing use of the innovation once it is a fully-formed mechanism for providing education to out-of-school children.⁵⁸
- DOING TOO MUCH TOO SOON:** Given the size of the problem, as well as the demand for this kind of program to serve out-of-school children in other countries, it is possible that the program could scale too quickly or widely. War Child Holland, UNICEF, and their partners are aware of this risk and are committed to identifying scaling priorities in partnership with the relevant Ministries of Education.
- COMPLEXITY:** As explored in more detail in the third lesson below, Can't Wait to Learn's success stems in part from leveraging the assets of its many partners in achieving a shared goal. However, managing the complexity of the intervention, and the complexity of the partnerships that support it, requires a level of energy and coordination that is difficult to sustain, which poses a risk to the continued success of the program.

⁵⁷ Toyama (2015).

⁵⁸ McClure & Gray (2015c).



LESSONS FOR OTHER INNOVATIONS

DESIGNING WITH SCALE IN MIND FROM DAY ONE MAY BOLSTER THE CHANCES THAT AN INNOVATION MEETS ITS SCALING TARGET.

As one CWtL team member put it: “We had scaling up in mind from the beginning of the project. We felt we couldn’t invest in a game that wouldn’t be scaled up.”⁵⁹ The CWtL team started small but thought big, recognizing that the innovation’s promise rested on reaching as many children as possible within and beyond Sudan.⁶⁰

This early-stage consideration of scaling is reflected in the team’s approach to game development and research. From the start, the CWtL team sought to understand threats to scaling and address these threats to make the program as widely applicable as possible. Recognizing that the game’s delivery mechanism had implications for scalability, CWtL developed one that was highly streamlined. The team created a research plan that would provide regular data on the innovation’s major risks and demonstrate CWtL’s effectiveness for a broader international audience.

WE FELT WE COULDN’T INVEST IN A GAME THAT WOULDN’T BE SCALED UP.

TRADE-OFFS MUST BE MADE BETWEEN THE CUSTOMIZATION AND REPLICABILITY OF INNOVATIONS THAT ASPIRE TO SCALE.

The CWtL experience reflects the tension between customizing an innovation to context to enhance its effectiveness and also desiring a highly replicable, quickly scalable program. “The strength, but also the weakness, of the [CWtL game] is that you have to adapt it to every setting where you will use it,” one stakeholder said. “But once it is adapted properly, you can scale it up within a country. The process of doing the adaptation could be somewhat templated, but with context-specific adjustments needed.”⁶¹ CWtL has navigated this trade-off by making its mini-games replicable by using generic math content, while the meta-game world is highly customizable.⁶²

The time and resource costs of redesigning CWtL’s game world for new countries are likely to be substantial. In potential target countries, for example, many beneficiaries live in urban areas. To integrate the game into this environment would demand very different visuals from those used in Sudan. Though a customized game could deliver culturally differentiated education that is nearly impossible for a single teacher to provide to a group of children of diverse backgrounds, languages, and cultural frames of reference, doing so would require balancing these benefits against the time and resources required.⁶³

⁵⁹ Stakeholder interview.

⁶⁰ This lesson affirms the findings of Cooley & Linn (2014) and Hartmann & Linn (2008).

⁶¹ Stakeholder interview.

⁶² McClure & Gray (2015b).

⁶³ Wagner (2001); Stakeholder interview.

MANAGING COMPLEX, MULTI-STAKEHOLDER PARTNERSHIPS REQUIRES SUSTAINED EFFORT AND DIFFERENTIATED APPROACHES.

War Child Holland, the overarching manager of CWtL, recognized that although humanitarian sector partners shared a sense of urgency to provide education to out-of-school children, differentiated approaches were needed to obtain support from and manage the many partners in CWtL. To gain backing from partners, War Child Holland drew on an understanding of their strategic priorities, strengths, and incentives to identify alignment of CWtL's goals with those of each partner—doing so without sacrificing the aims and integrity of the innovation. For certain data-driven partners, War Child Holland showcased empirical evidence; for others, site visits were effective in getting them on board. Different team members also played specific roles in executing these approaches, with TNO presenting data to partners while War Child Holland managed administrative and financial logistics.

As McClure and Gray note: “Sustainable change requires insight into what people need in order to buy in and where the barriers to adoption lie. With this insight, these individuals can then create win-win stories that guide action and bring people along on the journey.”⁶⁴ War Child Holland also took a holistic view of partners, recognizing the importance of their technical expertise, relationships with national policymakers, advocacy platforms, and convening power, in addition to their financial support. War Child Holland thus involved partners fully in the intervention and took pains to ensure that their contributions were valued, whether through bilateral communication or public recognition, e.g., through branding of program materials. In doing so, War Child Holland enabled all partners to become champions of Can't Wait to Learn.

However, the Can't Wait to Learn experience shows that successful management of partnerships requires sufficient capacity and can involve high transaction costs. Partner management is an indefinite necessity, rather than a one-time task, in the ongoing scale-up journey.⁶⁵ Though the shared imperative to address the needs of out-of-school children brought partners to the table, War Child Holland, as overarching manager, has had to negotiate, inculcate, communicate, and adjust a shared vision of the innovation and ensure that each contributor's responsibilities are well understood. This included initiating challenging conversations about the scope, reach, and pace of Can't Wait to Learn with financial and nonfinancial partners alike.

“SUSTAINABLE CHANGE REQUIRES INSIGHT INTO WHAT PEOPLE NEED IN ORDER TO BUY IN AND WHERE THE BARRIERS TO ADOPTION LIE. WITH THIS INSIGHT, THESE INDIVIDUALS CAN THEN CREATE WIN-WIN STORIES THAT GUIDE ACTION AND BRING PEOPLE ALONG ON THE JOURNEY.”

⁶⁴ McClure & Gray (2015b), p. 24.

⁶⁵ McClure & Gray (2015b).

CAN'T WAIT TO LEARN APPENDICES

APPENDIX I: CWtL'S APPROACHES TO MITIGATING THE CHALLENGES OF E-LEARNING⁶⁶

E-LEARNING ENVIRONMENT CHALLENGE	CAN'T WAIT TO LEARN MITIGATION APPROACH
<p>Children do not have enough knowledge to follow instruction or to do the exercises without further help, e.g., illiteracy.</p>	<ul style="list-style-type: none"> • All instruction is in formal, but simple Arabic. This is a language children know and understand. • All instruction is via audio and video. Children cannot read and write, but they can listen to and watch the instruction. • CWtL starts from the very beginning of mathematics: with numeracy. It has found that children in remote villages cannot count to 10 or do not know their numbers. In this way, CWtL can make sure that even children without any knowledge can participate. Children with some knowledge do the same mini-games, but they can progress faster. • The interface of CWtL is intuitive. This means that all mini-games use the same or similar symbols and children learn to use CWtL quickly. • All graphics used in CWtL are familiar to the children. Their own drawings were used to design the learning environment. • In the beginning of CWtL, children can use a sound button that reads aloud the number of objects shown in the answer categories. This will help the children to learn as they become familiar with numbers.
<p>Children do not receive adequate feedback to improve their performance.</p>	<ul style="list-style-type: none"> • CWtL provides feedback on right and wrong answers through the game itself. • CWtL provides feedback on progress through the game itself.

⁶⁶ War Child Holland (2013).

E-LEARNING ENVIRONMENT CHALLENGE	CAN'T WAIT TO LEARN MITIGATION APPROACH
<p>Children cannot stay motivated over a longer period of time.</p>	<ul style="list-style-type: none"> • CWtL consists of two game-worlds: 1.) The children can help other (virtual) children to achieve their goals by playing mini-games. The goal is to help a child build his or her hut and become a goat herder, cooking lady or brick maker. There are 20 jobs in CWtL, 10 of which are present in the village and 10 that are found in towns (nurse, teacher, etc.). 2.) The children have a shop that they can improve by doing the mini-games. They start out with a carpet by the side of the road and in the end can have a real shop with a refrigerator. • The most important motivational aspect of CWtL is competence. In the beginning, children need only three correct answers to finish an exercise. Later this becomes five, 10 and finally 20. This will help them to feel confident about their progress. • The instructional videos are presented by children, who explain new numbers and mathematical concepts. Children can relate to other children and see them as role models (“she is like my big sister; if she can do it, I can as well”). • Mini-games can be repeated as many times as necessary or desired. They will be similar, but the exercises will differ (via random selection). • Instructional videos can be watched as many times as required. • Each learning goal has several mini-games. Although children practice the same learning goal, they feel they are doing different mini-games. • There is some competition among children because they will see how much others have finished. • CWtL contains fun elements, including interactive elements of the user interface that respond to children’s desire to play. For example, children using the tablets can interact with the characters who serve as their guides. • CWtL also uses the psychology of flow. Once children start to play, they want to continue.

APPENDIX 2: CWTL PHASES AND SCALING PLANS⁶⁷

PHASE I (2011–2013)	PHASE II (2014–2015)	PHASE III (2015–2016)
Proof of Concept Math in Sudan	Scaled Trial Math in Sudan	Scaled Trial Reading in Sudan
66 children in two states	589 children in three states	200 children in one state
Core research question: Can children learn using this method?	Core research question: Can children learn over a prolonged period of time using these methods? What are the psychosocial effects of access to good quality education over six months? Is the psychosocial tool developed for the program valid from a research perspective? Does the approach offer value for money?	Core research question: Can children learn using this method?

⁶⁷ War Child Holland (2015).

PHASE IVA (2016-2017)	PHASE IVB (2018-2020)	PHASE V (2018-2020+)
<p>Entry and scaled trial in two Middle Eastern countries.</p> <p>Scale-up in Sudan.</p>	<p>Scale-up in two Middle Eastern countries.</p>	<p>Beginning in 2018, hand-over and exit processes for Sudan will start. The strategy is that the program will be handed over to the Ministry of Education.</p> <p>By mid-2019, similar processes will commence in two Middle Eastern countries.</p>
<p>Working toward 170,000 children in three countries by the end of 2020.</p>		
<p>Research questions will be defined together with local partners in each country but will be based on earlier-phase research questions. There will be specific additional questions related to scale-up.</p>		



From the Semi-Arid to the Amazon



HOW BRAZIL'S PALAVRA DE CRIANÇA PROGRAM ADAPTED ITS LITERACY MODEL TO WORK IN A NEW CONTEXT







SUMMARY

Despite gains in access to education, learning levels remain low in many parts of Brazil. This is especially the case in the poorer parts of the country, including the Northeast semi-arid and Northern Amazon regions. In 2009, only one-fifth of grade five children in the semi-arid region's poorest state, Piau , and less than one-fourth of children in the state of Amazonas, achieved age-specific reading standards.⁶⁸

Established in 2008, Palavra de Crian a (in English, Word of the Child) is a program designed to ensure that children in Brazil's poorest regions achieve literacy at the right age. Its uniqueness is partly a function of its multi-dimensional approach: learning assessment data are used to guide instruction, in-service training supplements teacher competencies, and parent-and caretaker-focused strategies foster community support for literacy.

Although an independent evaluation has yet to be conducted, Palavra de Crian a has been linked to impressive improvements in Piau . The number of children who reached the two highest levels of literacy proficiency (determined by the national early learning assessment) increased from 49 percent in 2011 to 76 percent in 2013 in participating communities.⁶⁹

The success of the program has not only led to its expansion from a small pilot (based in two municipalities) to full-state implementation (224 municipalities in 2013) but has also influenced the establishment of a national literacy program for children in the early grades of primary school. As it continues to evolve, Palavra de Crian a has expanded its focus to include pre-primary education and holistic child development and increased its geographic reach, with pilots either underway or being planned in other regions of Brazil.

WHY WAS IT SELECTED?

The Palavra de Criança team presented the most comprehensive proposal among all competitors. Reviewers were impressed that the program employed multiple channels for supporting children to achieve literacy at the right age in two of Brazil's poorest states. To maximize potential effectiveness, the program measures the individualized literacy needs of every single child. To ensure traction, it continuously engages with parents and local governments to position learning at the center of their agendas. To ensure sustainability and scalability, Palavra de Criança uses existing government systems, thereby limiting costs.

KEY TAKEAWAYS FROM THE PALAVRA DE CRIANÇA EXPERIENCE:

1

THE REPUTATION OF INSTITUTIONAL PARTNERS CAN CATALYZE BUY-IN FOR AN INNOVATION.

The UNICEF “brand” and field presence have proven to be important factors in engendering the support of state and local officials and program participants. Furthermore, the reputation of local implementing partners, such as Instituto ProBem in Piauí and Fundação Amazonas Sustentavel (FAS) in Amazonas, lend the program legitimacy with local stakeholders.

2

HUMAN CAPACITY AT ALL LEVELS MATTERS.

The technical competence and passion of Palavra de Criança's implementers have been at the forefront of the program's success. Without strong, complementary leadership at all levels—from the Latin America and Caribbean UNICEF regional office (LACRO) to municipal officials—the program may not have launched or continued to evolve.

3

SCALING IS ABOUT MORE THAN SIMPLY INCREASING THE NUMBER OF BENEFICIARIES.

Palavra de Criança's evolution demonstrates that scaling should be defined not only as the growth of a program in terms of individuals reached. Instead, it ought to be viewed as a much more dynamic process in which a dimension such as depth (i.e. expanding an innovation's services or presence within a particular geography) is as important as a program's spread.



CONTEXT AND ORIGINS OF THE INNOVATION

Despite global progress in improving educational access, increased schooling has not necessarily led to significant improvements in learning levels. UNESCO estimated in 2014 that 250 million children were unable to read and write, of which 130 million had attended at least four years of school.⁷⁰

In keeping with global trends, increases in primary school enrollment in Brazil have not translated to commensurate increases in learning.⁷¹ As a result of many catalysts, including the introduction of Bolsa Família⁷², net primary school enrollment in Brazil rose from 81 percent to 95 percent between 1992 and 2009.⁷³ Yet, in 2009, only an estimated 32 percent of children in grade five had reached the age-appropriate level of reading and text comprehension. By 2013 that number had risen to only 40 percent.⁷⁴

Moreover, learning outcomes are not distributed evenly throughout Brazil, with scores lowest in the North and Northeast parts of the country. In the Northeastern state of Piauí, one of the country's poorest, learning markers were even worse: Only 21 percent of children in grade five were able to read at the appropriate level in 2009.⁷⁵

BARRIERS TO LITERACY

Inequities in Brazil's learning outcomes are best understood by considering the impact of the nation's decentralized education system. Basic education, including nurseries, kindergarten, and primary school, is the responsibility of municipal governments, while state and federal governments oversee secondary and tertiary education, respectively. While the federal government provides minimum standards of quality for syllabus development and teacher preparation, municipal and state governments have significant autonomy to manage their own education systems. As a result, the quality of basic education provision is highly inconsistent, particularly in the country's less developed regions.

Poor learning outcomes in these regions can be attributed to a number of factors, including inadequate teacher instruction and low levels of parental involvement in education. A 2009 study found that teachers' instructional time is not optimally leveraged, with administrative tasks often displacing learning activities.⁷⁶ Furthermore, traditional teaching methods that may not differentiate by learning levels, including blackboard teaching, are prevalent, translating to lower levels of pupil engagement.

⁷⁰ UNESCO (2015).

⁷¹ UNICEF Brazil (2009).

⁷² Bolsa Família is a conditional cash transfer program that provides financial incentives for parents to ensure that their children are enrolled in and attend school.

⁷³ Bruns et al. (2012).

⁷⁴ QEDu.

⁷⁵ Ibid.

⁷⁶ Gatti (2011).

When existing teacher training practices are considered, these findings are hardly surprising. Training courses have been found to possess a severe imbalance between theory and practice, with a disproportionate amount of time afforded for theory. This is particularly true in the Northeast, where Piauí state is located, and where knowledge of teaching practice was found to be at its lowest.⁷⁷ Further preventing improvements in Piauí and other resource-deprived regions are low rates of adult education, which have translated to a lack of parental involvement

in learning. Piauí state has the second-highest illiteracy rate in the country (nearly 23 percent).⁷⁸

Seeking to address these and other barriers to children becoming literate at the appropriate age, Palavra de Criança was established in 2008. Its model is meant to work within the decentralized education system: program officials work in tandem with municipal officials and leverage existing materials and resources, with the goal of reducing inequities across municipalities.

BOX 2.1: PALAVRA DE CRIANÇA'S PRECURSOR: PROGRAMA ALFABETIZAÇÃO NA IDADE CERTA (PAIC)

The establishment of Palavra de Criança was heavily influenced by another literacy program: Programa Alfabetização na Idade Certa (*Literacy at the Right Age*). Created in response to a 2004 assessment in the state of Ceará, which found that 50 percent of children in the state were illiterate at the end of grade three, Literacy at the Right Age has four pillars:

- 1 **Helping municipal professionals to develop monitoring systems in schools to ensure adequate teaching hours.**
- 2 **Supporting literacy lesson planning.**
- 3 **Introducing a system for the continuous training of teachers.**
- 4 **Introducing assessment and analysis of each child's literacy level through a reading test.**

The program was co-designed and coordinated by UNICEF and the state government of Ceará, becoming public policy in 2007. Its inception can also be attributed to the commitment of the then-state governor who sought to remedy the poor results from the 2004 literacy assessment. Backing the government's commitment to PAIC was a commercial sales tax, which remains to this day, earmarked to finance the program. PAIC has been heralded as an exceptionally successful program, with good reason: Ceará saw its illiteracy rate among 8-year-olds drop by 56 percent from 2006 to 2009.⁷⁹

⁷⁷ Ibid.

⁷⁸ Ministry of Education (2012).

⁷⁹ UNICEF (2014).

INCEPTION IN PIAUÍ

Palavra de Criança was started in Piauí in 2008, in hopes of duplicating PAIC's success in a state with similarly poor learning outcomes. Its development was the product of a number of factors.

First, at the time of Palavra de Criança's founding, there was an acute need. Nearly 80 percent of children in fifth grade were unable to read at the right level.⁸⁰ As noted above, the state not only suffered from some of the poorest economic conditions and highest illiteracy rates in the country, but it also had a teaching workforce that lacked appropriate training. Thus, Piauí was ripe for many of the teacher-based initiatives used by PAIC in Ceará.

NEARLY 80 PERCENT OF CHILDREN IN FIFTH GRADE WERE UNABLE TO READ AT THE RIGHT LEVEL.

In addition, the development of Palavra de Criança was aided by the presence of several program champions, who saw an opportunity to apply a program similar to PAIC in Piauí and possessed the vision and political will to make it a reality. One such champion was Rui Aguiar, then coordinator of UNICEF's regional office based in Fortaleza.⁸¹ He was prominently involved in PAIC and conceived of adapting it to other contexts. He also served as Palavra de Criança's informal salesperson, helping other partners understand, and ultimately buy into, the program's model. The mayor of Piauí's capital city, Teresina, also played a central role in the founding of Palavra de Criança. Strongly committed to education and willing to experiment with a new model, the mayor empowered his municipal education secretary to find a way to improve the city's basic learning outcomes.

Lastly, circumstances played a role: UNICEF and Teresina municipal representatives met at a municipal director's meeting, where their shared

interest in literacy surfaced, and initial design discussions began.

Palavra de Criança was originally piloted in two municipalities (Teresina in Piauí, and Sobral in Ceará) starting in 2008. Technical support was brought in from UNICEF and the Federal University of Ceará (UCF), which had played a key role in the development of PAIC. Teresina's education secretary, who possessed the technocratic deftness to identify the fiscal space to finance the program in Teresina, provided day-to-day leadership.

ADAPTATIONS FROM PAIC

Although the program was inspired by the Ceará experience, considerable thought was given to developing an initiative that would be sustainable and reflective of the economic context of Piauí. Differences between the two programs are in part a function of necessity: Piauí is the country's poorest state, meaning that the potential for support from the state government was more limited.

Because of fiscal constraints, Palavra de Criança could not enact a PAIC-like earmarked tax. As a result, Palavra de Criança adopted a number of measures to limit costs. Unlike PAIC, which requires set-aside financing for producing new classroom materials and providing a new assessment tool (SPAECE), Palavra de Criança leverages existing teaching classroom materials and a current national learning assessment (Provinha Brazil). Recurring costs are largely contained to training and technical oversight. Palavra de Criança also differs from PAIC in that it does not provide any financial rewards for participating municipalities.

Other, non-cost-related differences also exist. For example, Palavra de Criança's assessments measure both reading and writing, whereas PAIC measures only reading. In addition, whereas the Ceará program is very much a state-driven initiative, Palavra de Criança works closely with municipal representatives.⁸²

⁸⁰ QEdU.

⁸¹ Henceforth referred to as "UNICEF Fortaleza office," this regional office is responsible for UNICEF activities in three Northeast Brazilian states: Ceará, Rio Grande do Norte, and Piauí.

⁸² Palavra de Criança works closely with municipal secretaries of education, as well as with municipal pedagogical coordinators, who are responsible for providing oversight to groups of schools.



TEAM COMPOSITION, DESCRIPTION OF MODEL, AND EVOLUTION

PALAVRA DE CRIANÇA'S MODEL

Since 2013, when Palavra de Criança was most widely implemented,⁸³ the program has consisted of six key pillars, all meant to further efforts to improve literacy:

- 1. ASSESSMENT:** Learning outcomes in the beginning of grade two are measured through Provinha Brasil, which was developed in 2008 to assess basic literacy outcomes. The purpose of the assessment is to diagnose literacy levels and highlight where supplementary instruction may be needed. Within a few weeks of conducting the assessment in classrooms, Palavra de Criança is able to analyze its data and provide teachers, headmasters, pedagogical coordinators, and policymakers in participating municipalities with detailed information on how well individual students perform across a number of reading competencies. This provides a strong empirical base upon which teachers can develop tailored lesson plans and student-specific improvement strategies.
- 2. MUNICIPALITY-SPECIFIC LITERACY STRATEGIES:** Based on results from literacy assessments in grade two, Palavra de Criança helps municipal governments to develop literacy strategies. Potential reforms include shifting resources toward high-need schools, providing additional pedagogical training for teachers, and ensuring more monitoring of teacher performance.
- 3. SKILLS ENHANCEMENT FOR TEACHERS:** Palavra de Criança provides regular training in classroom instruction techniques and lesson planning. The training is conducted by municipal pedagogical coordinators, who are also available for on-demand support (including advising on implementation of specific pedagogical approaches) and classroom monitoring.

⁸³ UNICEF Brazil (2013).

TABLE 2.1: ROLES OF DIFFERENT PARTNERS IN PALAVRA DE CRIANÇA

Palavra de Criança has benefited from a diverse set of partners in Piauí. A summary of their respective roles can be found in Table 2.1

ORGANIZATION	ROLE IN PALAVRA DE CRIANÇA
<p>UNICEF (2008 to present)</p>	<p>From the beginning, UNICEF has been deeply involved in the implementation and development of Palavra de Criança through the provision of initial funding, technical expertise, and leadership. The country office established a number of important partnerships, including those with state and municipal officials. UNICEF officials also played a key role in incubating Instituto ProBem, Palavra de Criança's implementing organization in Piauí. UNICEF HQ also provided funding to the program in 2015, through its <i>Innovations in Education Initiative</i>.</p>
<p>University of Ceará (2008 to present)</p>	<p>Members of the Fundação Cearense de Pesquisa e Cultura (FCPC) at the Federal University of Ceará (UFC) have provided technical support to Palavra de Criança. This has taken the form of developing learning assessments, analyzing test data, and creating the assessment data processing software Avalia. UFC has also played a key role in coordinating the implementation of learning assessments, which has included both designing the reading and writing assessments for students in grade three and developing standards for the implementation of the national Provinha Brasil in Piauí.</p>
<p>Municipal governments (2008 to present)</p>	<p>Municipal government commitment has been integral to the success of Palavra de Criança. Mayors of Teresina and Sobral provided the initial financial support for the program's pilot in 2008. As the program expanded to include more municipalities in Piauí, officials from those communities, including mayors, secretaries of education, and pedagogical coordinators, have played important roles in the program's growth through financing, committing to literacy targets, and organizing training events.</p>
<p>State government of Piauí (2011-2013)</p>	<p>From 2011 to 2013, when the program was implemented in 224 of Piauí's municipalities, the state government provided financial and institutional support to the initiative.</p>
<p>Instituto ProBem (2010 to present)</p>	<p>Based in Teresina, Instituto ProBem has been Palavra de Criança's primary implementing organization since its founding in 2010. Incubated by UNICEF, Instituto ProBem has led the building of relationships with municipal governments, overseen the development of training and materials for pedagogical coordinators and teachers, and organized teacher monitoring activities.</p>

4. DIFFERENTIATED TEACHING: Through provision of data on students' abilities and training in differentiated teaching, Palavra de Criança empowers teachers to tailor their literacy instruction to abilities. Additional training is provided in multi-grade classroom instruction and how to analyze student data.

5. FAMILIES LEARNING TOGETHER: Palavra de Criança attempts to bring families closer to their children's learning by providing them with guidance on supporting literacy and learning at home. Municipal pedagogical coordinators, school heads, and teachers

are encouraged to invite parents and caretakers to visit schools to better understand the Palavra de Criança approach. In addition, parents are regularly invited to assemblies in which learning reinforcement strategies are imparted.

6. CERTIFICATION: After being assessed again at the end of grade three through the use of a tool developed by Palavra de Criança (the Provinha Palavra de Criança), children are recognized for attaining certain reading levels. Schools, teachers, and municipalities are also recognized for their performance as an incentive for future participation.

BOX 2.2: UNICEF PRINCIPLES FOR INNOVATION AND TECHNOLOGY IN DEVELOPMENT⁸⁴

UNICEF's nine principles for innovation and technology in development have informed the development and implementation of Palavra de Criança. Two of these principles, with examples of their application in Palavra de Criança, are noted below:⁸⁵

- **Understand the Existing Ecosystem:** Through conversations with municipality officials and teachers, program architects developed a detailed understanding of the challenges municipalities face in implementing basic education. As a result, the model leverages existing materials and imposes few costs on municipal governments.
- **Be Data Driven:** A core component of the program is the use of assessment data to inform classroom instruction. By presenting learning outcome data in a easy-to-understand way to municipal education officials, pedagogical coordinators, and teachers, Palavra de Criança turns raw information into a blueprint for action.



⁸⁴ Digital Development Principles Working Group.

⁸⁵ For examples of how other innovations reflect the nine principles, see the Annex at the end of this report.

EVOLUTION OF PALAVRA DE CRIANÇA

Palavra de Criança has made a number of adaptations since its inception, in the process showing an ability to evolve in response to new data or exogenous conditions. Four such changes are noted below.

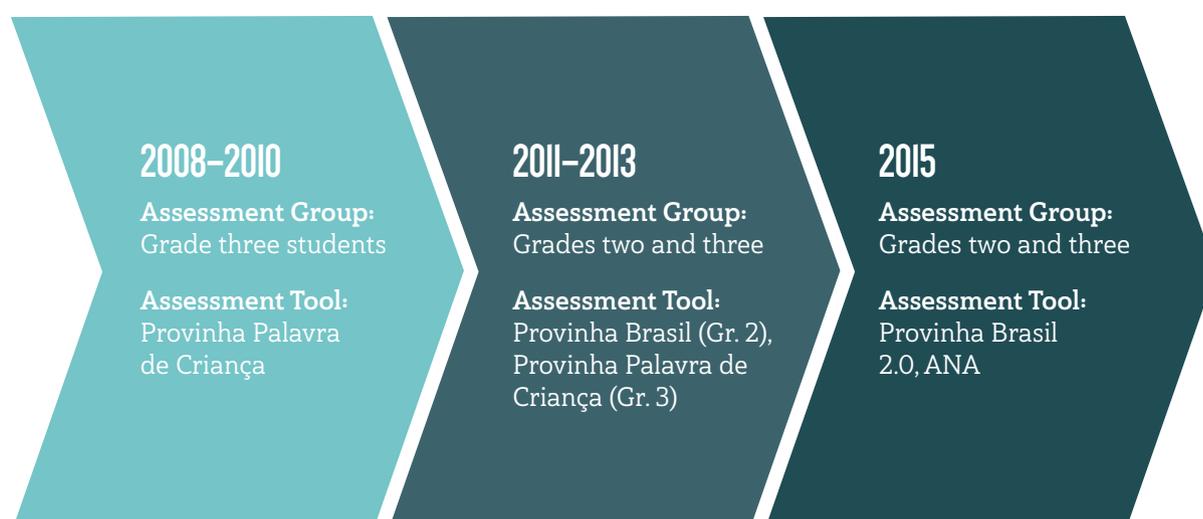
SCALE:⁸⁶ The number of participating communities has evolved during the program's history. The first two years of Palavra de Criança, which started in 2008, were explicit pilot programs in two municipalities, Teresina and Sobral. The number of participating municipalities grew to 10 in 2010 and to 25 in 2011. In 2012, the program expanded to 150 municipalities, with financing from UNICEF and the Piauí state government. In 2013, emboldened by the program's success and with support of the state government, Palavra de Criança was implemented in all 224 municipalities in Piauí. In 2014, training cycles were not conducted due to a lack of financing, caused in part by a turnover in the state's administration.⁸⁷ In 2015, owing to UNICEF HQ funding through the *Innovations in Education Initiative*, Palavra de Criança was able to return to 72 high-achieving municipalities in Piauí.⁸⁸

ASSESSMENT TOOLS: A central element of the Palavra de Criança model is the use of assessment data to diagnose gaps in learning and guide teachers' strategies for addressing such gaps. However, the specific assessments used each year and the program outputs related to those assessments have shifted over time, as illustrated in Figure 2.1.⁸⁹

During its first three years, Palavra de Criança conducted learning assessments for children in grade three using the Federal University of Ceará–designed *Provinha Palavra de Criança*.⁹⁰ In 2011, to facilitate earlier diagnoses of literacy levels, Palavra de Criança began to use data from the national standardized assessment *Provinha Brasil*. This assessment is conducted in grade two.

These exams, while generating credible, useful data, were not consistently applied to guide approaches to improve literacy levels. As a result, in 2012, Palavra de Criança developed

FIGURE 2.1: EVOLUTION OF PALAVRA DE CRIANÇA'S USE OF LEARNING ASSESSMENTS



⁸⁶ Ribeiro (2015).

⁸⁷ However, the program's use of existing resources and personnel meant that program activities could continue in many municipalities throughout the state. Where possible, ProBem continued to provide assistance and monitoring to municipalities in which Palavra de Criança activities continued.

⁸⁸ These municipalities were eligible for this iteration of the program because at least 60 percent of their children were literate by third grade.

⁸⁹ Ribeiro (2015).

⁹⁰ In 2013, this exam was later replaced by *Avaliação Nacional da Alfabetização (ANA)*, a national assessment of literacy.

a tool called Pathway to Literacy to help teachers interpret and act upon data generated by Provinha Brasil.

Finally, in 2015, Palavra de Criança developed a modified version of Provinha Brasil to more accurately assess student literacy levels. The test removed a number of questions that involved teachers directly asking students for answers, which were believed to bias results (teachers did not always ask questions in a consistent manner). By piloting this adapted tool, the Palavra de Criança team hopes to influence the format of a future version of the national exam.

In sum, the various assessment tools that Palavra de Criança has developed, used, or modified, ensure that data are used not simply to compare municipalities and states, but also to guide teachers to improve student literacy levels. They also reflect an intentional effort to leverage pre-existing national assessments, rather than creating parallel tools which are less likely to be widely adopted.

INTEGRATION OF PRE-PRIMARY AND PRIMARY EDUCATION: In response to feedback from participating communities, Palavra de Criança has evolved to help bridge the gap between pre-primary and primary education. Parents of primary school students, witnessing the benefits of the program, expressed a desire for it to begin earlier in their children’s educational experience. As a result, in 2015, the program included pre-primary pedagogical coordinators in its cycle of training. Training now includes guidance on play-based learning activities and contains modules that help teachers facilitate a more seamless transition between pre-primary and primary school.

The feedback from pre-primary coordinators has been positive. One coordinator noted, “Bringing coordinators from primary and pre-primary meant breaking down a wall that never should have been there in the first place.”

MOVING FROM LITERACY TO LEARNING:

Although Palavra de Criança was initially intended to ensure that literacy was attained at the right age in Piauí, it has become a much more comprehensive program. As noted above, Palavra de Criança, in its current form, aims to cultivate a positive learning environment for students in both primary and pre-primary school. The program currently emphasizes the development of three crucial aspects of early education: cognitive, socio-emotional, and motor competencies.⁹¹ Palavra de Criança now provides training on how teachers can encourage children’s self-expression and develop a classroom with a “culture of the child,” e.g., through play-based learning rather than rote memorization.

PALAVRA DE CRIANÇA NOW PROVIDES TRAINING ON HOW TEACHERS CAN ENCOURAGE CHILDREN’S SELF-EXPRESSION AND DEVELOP A CLASSROOM WITH A “CULTURE OF THE CHILD.”

⁹¹ UNICEF Brazil (2015).

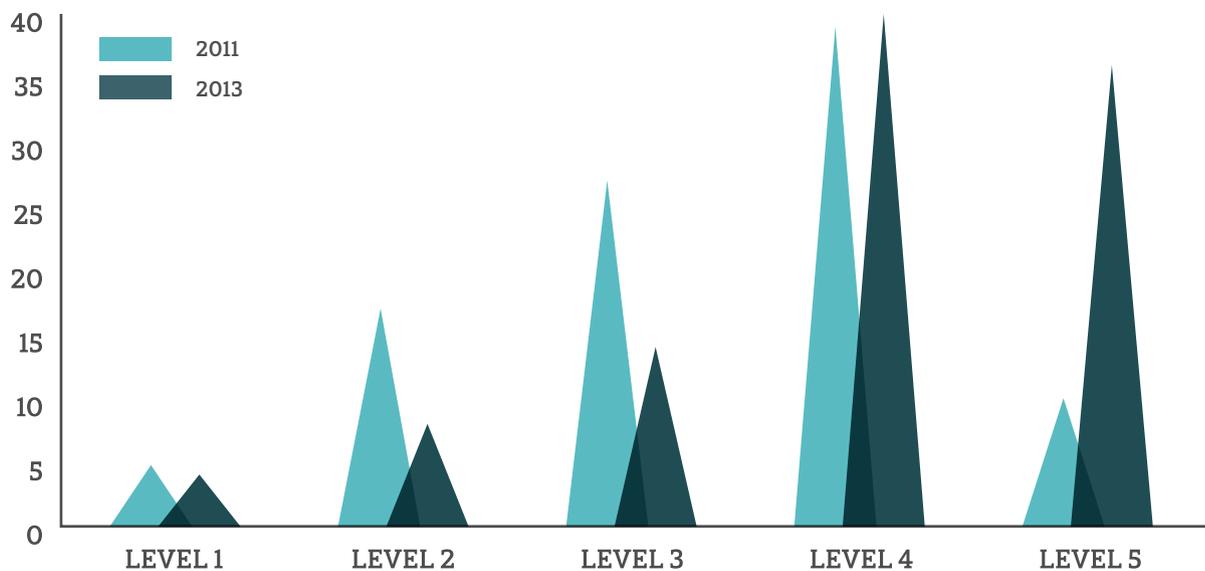


RESULTS TO DATE

Palavra de Criança has yet to measure its impact through an independent evaluation. However, in participating municipalities, the number of second-graders able to reach the two highest levels of literacy proficiency increased from 49 percent in 2011 to 76 percent in 2013, as measured by Provinha Brasil.⁹²

Qualitative evidence collected from interviews with key stakeholders in Piauí reinforced the notion that Palavra de Criança has improved instructional practices. Teachers praised Palavra de Criança for introducing pedagogical routines and techniques that allowed them to more effectively prepare and execute lesson plans. Instructors also noted the value of having assessment data on the learning

FIGURE 2.2: PERCENTAGE OF PALAVRA DE CRIANÇA STUDENTS TESTING AT EACH OF PROVINHA BRASIL'S FIVE LITERACY PROFICIENCY LEVELS AT THE END OF GRADE 2 (2011, 2013)⁹³



⁹² Literacy competency, as measured by Provinha Brasil, is categorized into five levels:

- Level 1: Children are learning the rules of writing and can identify letters from other symbols.
- Level 2: Children can read words with varying syllabic structures.
- Level 3: Children can identify information in short texts.
- Level 4: Children can read, identifying the subject of text.
- Level 5: Children are able to interpret texts and their meaning.

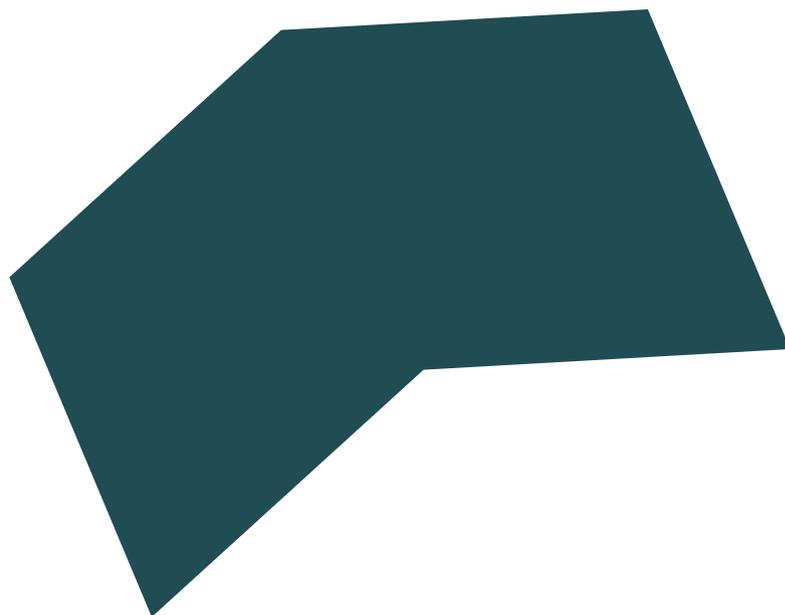
⁹³ UNICEF Brazil (2015).

levels of individual students, as it allowed them to map their instruction by need. One teacher, who described the program as a “much-needed light,” professed to have delayed retirement so she could implement strategies acquired through Palavra de Criança training. In sum, qualitative data suggest that the introduction of Palavra de Criança has caused a shift in the culture of classroom planning, and created new norms about using data to improve instruction.

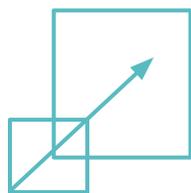
Notably, Palavra de Criança has also produced benefits beyond the envisioned program objectives. Two such examples were highlighted in interviews. First, Palavra de Criança, and its predecessor PAIC, influenced the development of Pacto Nacional pela Alfabetização na Idade Certa, or PNAIC, a commitment by federal, state, and municipal governments to ensure that all children are literate by the age of 8. The success of Palavra de Criança was said to have informed PNAIC’s focus on literacy at the right age, its use of systematic assessments, and its training approach, e.g., training of pedagogical coordinators.⁹⁴

In addition, Palavra de Criança appears to have had a visibility-raising effect in participating communities. New partnerships (including public-private ones) have been established and, in certain instances, existing ones have been strengthened. Training events and workshops fostered connections among teachers and pedagogical coordinators, some of whom continue to collaborate on the development of classroom practices.

ONE TEACHER, WHO DESCRIBED THE PROGRAM AS A “MUCH-NEEDED LIGHT,” PROFESSED TO HAVE DELAYED RETIREMENT SO SHE COULD IMPLEMENT STRATEGIES ACQUIRED THROUGH PALAVRA DE CRIANÇA TRAINING.



⁹⁴ UNICEF (2014).



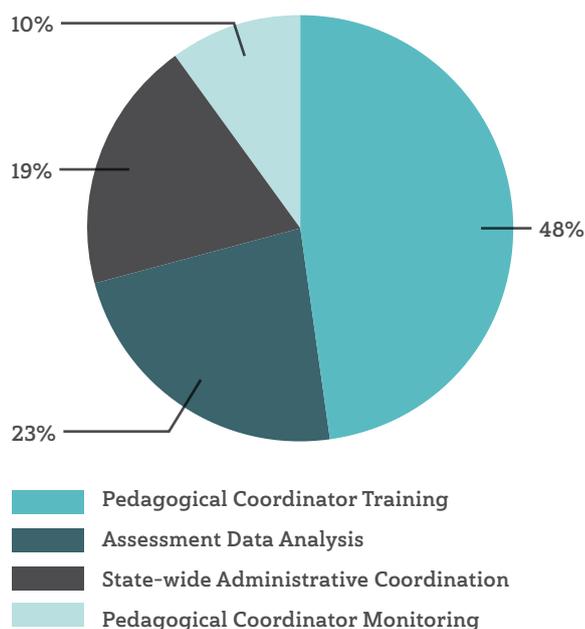
SUSTAINABILITY MECHANISMS, SCALING PLANS, AND CHALLENGES

Palavra de Criança was designed with an eye toward making it a long-lasting program.

The program's operating costs are relatively low due to its use of existing resources, including national learning assessments and teaching materials, and personnel, including existing municipal pedagogical coordinators and teachers. Based on 2015 data, the annual operating cost of implementing Palavra de Criança in Piauí was approximately US\$3,000 per participating municipality. The estimated unit cost per pupil of the 2015 cycle is US\$21.50⁹⁵, less than 1 percent of the per-student cost for public education in Brazil.⁹⁶ As illustrated in Figure 2.3⁹⁷, the largest cost driver is pedagogical coordinator training, which represents nearly half of all operational costs. Other major cost components include assessment data analysis⁹⁸ and state administration/coordination.⁹⁹

In addition to these core operational costs—which have been borne by a combination of UNICEF, state (Piauí) and federal governments, and private donors—participating municipal governments incur some modest expenses, including for pedagogical coordinators' travel to attend training and literacy certification events. While cost data were not available, stakeholder interviews confirmed these expenses were minimal.

FIGURE 2.3: OPERATIONAL COSTS OF PALAVRA DE CRIANÇA



⁹⁵ Authors' estimate based on program data for 2015 cycle.

⁹⁶ In 2012, government spending was US\$2555 per student. UNESCO Institute for Statistics (2016).

⁹⁷ UNICEF Brazil (personal communication, May 23, 2016).

⁹⁸ This includes data extraction and analysis of Provinha Brasil, as well as dissemination of test results.

⁹⁹ These costs, borne by the state government, include personnel costs related to planning training events and certification ceremonies, coordination with the Ministry of Education, and liaising with municipal governments.

Efforts to finance the program are ongoing, and sustainability-promoting measures cut across a number of dimensions, including:

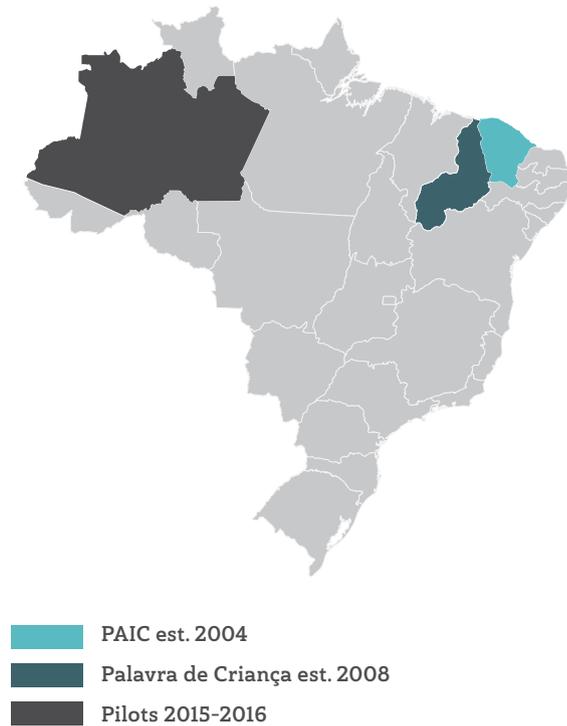
- **TRAINING:** A training-of-trainers (ToT) model is employed to maximize program reach within existing resources. Municipal pedagogical coordinators receive direct training from implementing organizations, and then hold trainings for school headmasters and teachers.
- **FLEXIBILITY:** Despite having some programmatic requirements, those participating in Palavra de Criança are encouraged to adapt its methodology to their own needs. Municipal governments have experimented with distinct forms of community outreach, existing learning materials are used, and teachers can influence the agenda for training sessions. Such flexibility has demonstrated respect for stakeholders' autonomy and facilitated their continued engagement.
- **INSTITUTIONAL DEVELOPMENT:** As the program grew outside of its pilot municipalities, the need for broader institutional support became clear. In 2010, UNICEF helped to incubate Instituto ProBem, a nongovernmental organization, to implement Palavra de Criança throughout the state. ProBem was charged with training pedagogical coordinators and monitoring and implementing assessments throughout Piauí as the program expanded.
- **ONLINE PLATFORM:** As of 2015, Palavra de Criança joined an online platform developed by UNICEF that houses key data (such as literacy scores from Provinha Brasil), classroom materials, and pedagogical tools, including strategies on using assessment results. Municipal coordinators are encouraged to contribute their own learning outcome data, reports, and materials (such as training manuals and instructional tool templates), which serve to foster learning and collaboration across Palavra de Criança-participating municipalities. This platform has been adopted by Instituto ProBem as its primary mechanism for monitoring municipal pedagogical coordinators as they implement Palavra de Criança activities. The platform not only allows for more efficient monitoring of activities at the municipal level, but also promotes continuity across government administrations by archiving materials and ensuring that municipalities do not need to "start from scratch" when new education officials take over. Lastly, Palavra de Criança implementers are beginning to use this platform to conduct trainings, further reducing costs associated with in-person multi-day events.

SCALING PLANS

Palavra de Criança's latest implementation cycle (2015) has been largely financed through UNICEF's *Innovations in Education Initiative*. As described above, this new iteration of Palavra de Criança features a number of new features, such as the inclusion of pre-primary education and an expanded focus on holistic child development. In addition to its broader thematic focus, the program is also expanding its geographic reach beyond Piauí by adapting its model to the state of Amazonas. Current implementation progress in these two states is detailed below:

- **PIAUI:** Higher-achieving municipalities in Piauí—those in which at least 60 percent of children had achieved literacy at the right age in the 2013 assessment—were chosen for the 2015 program. These municipalities were selected because administrators wanted to test new programmatic elements (such as the online platform and pre-primary training) in conditions where they would have the best chance of succeeding. Palavra de Criança's leaders hope that the results from the 2015 program will translate to a renewed partnership with the state government.

**FIGURE 2.4: PALAVRA DE CRIANÇA
COUNTRY PRESENCE**



- **AMAZONAS:** UNICEF officials also made the bold decision to expand to 14 municipalities in the state of Amazonas. Key implementers of Palavra de Criança, as well as staff from UNICEF’s Amazonas office, had a long-standing interest in bringing the program to the Amazon region. As was the case with Piauí, the need was there. Literacy scores were low, with only 33 percent of children able to reach adequate literacy proficiency by their fifth year of school.¹⁰⁰

Expansion to Amazonas would also provide data on whether the program would work in a radically different environment. And, while the will to start the program in the region was there, the financing was not, until the Palavra de Criança team received funding from the *Innovations in Education Initiative*.

Despite the promise associated with expanding to a region in need, implementation in Amazonas has posed a number of challenges not present in Piauí, including:

- **GEOGRAPHY:** Although the Amazon region is the size of continental Europe, its population density is low: as of the 2010 Census the state is estimated to have only 2.23 inhabitants per square kilometer, while the average in Brazil is 22.4.¹⁰¹ Outreach to this dispersed population is made more challenging by the area’s topography; long boat rides are often required for children living in river communities to reach schools. As a result, fewer supervisory visits are possible and training events are difficult to coordinate (some attendees must take multi-day boat rides to arrive). Geographic challenges also have cost implications. Given the distance needed to reach training sessions and schools for supervisory visits, transportation costs are much higher than in Piauí.
- **CULTURALLY RELEVANT MATERIALS:** The Amazon region has great cultural heterogeneity, with more than 200 different indigenous groups in the region. Developing culturally appropriate lessons, content, and materials for learning is therefore a significant challenge.
- **MULTI-GRADE CLASSROOMS:** Multi-grade classrooms are prevalent in the region, with children of diverse age groups and skills learning in the same room, from the same teacher. This makes differentiated learning very difficult, especially if the teacher is untrained.
- **LACK OF TRAINED TEACHERS:** Untrained teachers are prevalent in the rural areas of the Amazon, partly due to lack of access to higher education.

These challenges are notable in light of Palavra de Criança’s continued desire to demonstrate proof that the program can work in different environments. As one Amazonian stakeholder noted, “If the program can be successful here, it can be done anywhere.”

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ADAPTATION TO THE AMAZON REGION

Adaptation to Amazonas state began with an exploratory mission in 2013. UNICEF personnel were deployed to remote, rural areas of the state, in order to assess interest and the state of basic education provision, including local capacity and resources. This was a crucial first step: as in Piauí, implementation of Palavra de Criança in Amazonas would require leveraging of existing resources and materials. This landscaping mission was followed by several meetings with UNICEF implementing partners in Piauí, intended to mold the adaptation of the Palavra de Criança model to the unique context of the Amazon.

In response to the many challenges of implementing a program in the Amazon region, a number of changes to the original model were made. For example, a training module was designed to equip teachers with strategies to provide differentiated instruction in response to the prevalence of multi-grade classrooms. Similarly, instruction was provided on how to adapt learning materials to reflect the diverse cultural context of the Amazon region. Lastly, due to the much higher transportation costs, a decision was made to include municipal coordinator travel expenses into the program's core funding, rather than having municipal governments cover these costs, as was done in Piauí.

In order to effectively implement the program, UNICEF also needed to find a local partner to provide technical assistance, similar to the role that Instituto ProBem played in Piauí. A partnership was established with Fundação Amazonas Sustentável (FAS), which works with 26 municipalities across Amazonas and had previously implemented the Provinha Brasil

assessment in several of them. In addition to its technical competence, FAS is well known and respected in the region. Its contribution to the program lent it local legitimacy, crucial for generating municipal government buy-in.

At the same time, the design of the Amazonas program leveraged the experience and expertise of those associated with the Piauí program. Instituto ProBem staff worked in close partnership with FAS and UNICEF to ensure that trainings were robust, that supervisory responsibilities were well understood, and that the role of pedagogical coordinators was clear. In light of the challenges noted above, the team chose to adopt a phased approach to program implementation. The first training introduced pedagogical strategies aimed at lesson planning, the development of a classroom routine, and differentiated learning. The second training focused on family outreach and how to use the results from the Provinha Brasil assessment. Components such as targeted literacy improvement strategies have yet to be implemented.

Lastly, the team faced the difficult decision of selecting participating municipalities. Due to Amazonas' expansive geography, it was not logistically possible to work with all of the state's most vulnerable communities. Ultimately the team selected 14 municipalities with strong relationships with FAS.¹⁰²

As a result of the many challenges associated with implementing the program in the Amazon, costs are much higher than in Piauí. The estimated cost per pupil for the 2015 cycle is US\$39.31.¹⁰³ According to implementers, this is due to the significant logistical costs associated with trainings and dissemination of materials in very remote communities.

IN RESPONSE TO THE MANY CHALLENGES OF IMPLEMENTING A PROGRAM IN THE AMAZON REGION, A NUMBER OF CHANGES TO THE ORIGINAL MODEL WERE MADE.

¹⁰² Literacy scores and geography were also taken into account in selecting municipalities.

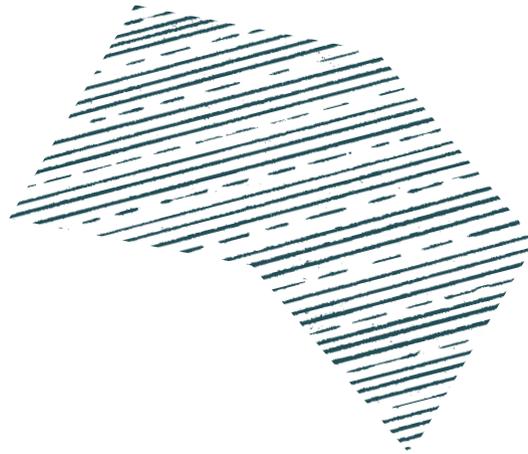
¹⁰³ Authors' estimate based on program data for 2015 cycle.

FURTHER EXPANSION

Discussions are underway to adapt the program to yet another state in the Northeast of Brazil.¹⁰⁴ Although secondary education learning outcomes in this state have recently improved, this trend has not been observed in pre-primary and primary education, much to the concern of education officials. Through an effort to identify improvement strategies, officials noted impressive strides made by Ceará and Piauí.

A STATE GOVERNMENT REPRESENTATIVE ALSO LAUDED PALAVRA DE CRIANÇA'S INNOVATIVE PEDAGOGICAL APPROACH, ITS IMPRESSIVE COMMUNITY OUTREACH EFFORTS, AND ITS STRONG PROGRAMMATIC LEADERSHIP.

As it currently stands, the state plans to test the program in 15 municipalities. Funding for this pilot will be provided by the CSR arm of a local corporation, with the state working to create a fund earmarked for scaling the program, contingent upon improvements in scores. State officials noted that the Palavra de Criança program is attractive because of its malleability—the program will incorporate content from the state's existing literacy program. A state government representative also lauded Palavra de Criança's innovative pedagogical approach, its impressive community outreach efforts, and its strong programmatic leadership.



¹⁰⁴ Due to ongoing negotiations with UNICEF, the name of the state is not included in this case study.

ADDITIONAL CHALLENGES

As it continues to expand across state borders, Palavra de Criança faces multiple challenges. These include:

- **FINANCIAL:** Thus far, the program has benefited from short-term financing from a mix of international and domestic sources. If the program is to continue, however, a long-term funding source must be identified. Ideally, such financing would come from state governments—to demonstrate ownership of the program and to bolster the likelihood that it will become sustainable. Encouragingly, in Amazonas, the introduction of Palavra de Criança catalyzed a visit from the state's education secretary. During his visit, he participated in a dialogue with UNICEF officials and expressed interest in future collaboration.
- **EVIDENCE OF EFFECTIVENESS:** Despite improved test scores that correlate with implementation of Palavra de Criança, there has not yet been an external evaluation of the program's effectiveness. Such an evaluation is critical to learning and may help garner additional financial support. Program stakeholders acknowledge the need for an evaluation and are in the midst of determining the optimal design. The choice of evaluation modality is not straightforward for UNICEF and Palavra de Criança staff, who face financial limitations.

THE CHOICE OF AN EVALUATION APPROACH SHOULD BE MADE WITH CONSIDERATION OF HOW THE RESULTS WILL BE USED.

- **INSTITUTIONAL:** A critical element of Palavra de Criança's apparent success has been the technical support provided by Instituto ProBem in Piauí and FAS in Amazonas. If the program is to expand, it will need to cultivate similarly strong partnerships with implementing organizations in other states.

The selection of an evaluation approach should be made with consideration of how the results will be used. As noted by IDinsight, evaluations should be distinguished between knowledge-focused evaluations—those that contribute to the global body of knowledge—and decision-focused evaluations—those that shape the decision-making of implementers. The design and cost implications are distinct, with decision-focused evaluations generally less costly.¹⁰⁵ To the extent that the Palavra de Criança team desires to use the evaluation to principally refine the model rather than to contribute to the global evidence base, it may elect to choose the latter.

¹⁰⁵ Shah et al. (2015).



LESSONS FOR OTHER INNOVATIONS

THE REPUTATION OF INSTITUTIONAL PARTNERS CAN GENERATE BUY-IN FOR AN INNOVATION.

A review of Palavra de Criança’s scaling suggests that its evolution and adaptation have been opportunistic: the program has grown in response to demand and the availability of financing. Even with a seemingly strong programmatic model and exemplary leadership, both luck and circumstances have proved critical. Yet, many of these circumstances may not have presented themselves were it not for the presence of UNICEF.

The UNICEF “brand,” as referenced by several of those interviewed, has helped create critical buy-in, especially among government officials. Program stakeholders perceived UNICEF as conferring a high degree of legitimacy, derived both from its global brand and its significant presence in the field. Its central involvement with Palavra de Criança served to cultivate initial interest and strengthen existing relationships (as with the secretary of education in Amazonas). The organization’s global appeal was cited by municipal officials and several mayors who noted the symbolic importance of achieving the UNICEF seal.^{106, 107} UNICEF has wisely used this credibility to “start the conversation” with those who may provide technical and financial support and, in one instance, incubate an organization (ProBem) to serve as an implementing partner.

The reputation of implementing partners has also been crucial, especially at the local level. For example, the program’s pilot in 14 Amazonas municipalities became a reality not only because of the efforts of UNICEF, but because of the strong, long-standing relationships held by FAS.

HUMAN CAPACITY AT ALL LEVELS MATTERS.

The apparent success of Palavra de Criança can be attributed to a number of factors, including the sound technical design of the program. But at the forefront have been the competence and passion of the program personnel. Strong leaders are present at all levels. To wit:

- **PALAVRA DE CRIANÇA POSSESSES TRUE CHAMPIONS FROM ITS REGIONAL UNICEF OFFICES**, who are keenly aware of and able to navigate the political economy of Northern Brazil. These leaders have not only generated buy-in for the program but also helped to create institutional norms and values, such as cultivating a “culture of the child” in the classroom.
- **LEADERS FROM UNICEF BRAZIL PROVIDED AN ENABLING ENVIRONMENT**, one in which innovation was encouraged, and supported the application that led to program implementation in Amazonas.

¹⁰⁶ However, one interviewee noted that the presence of UNICEF may provide the false impression that the program is well-funded.

¹⁰⁷ The UNICEF Seal refers to a certification process that stimulates positive competition among municipalities in supporting child-focused policies.

- **STAFF MEMBERS FROM INSTITUTO PROBEM, FAS AND UFC HAVE BROUGHT TO BEAR STRONG TECHNICAL EXPERTISE,** which has ensured that the program's teaching strategies are grounded in robust evidence and are communicated to teachers in a digestible manner. In this role, they have served as a key intermediary scaling-up institution.¹⁰⁸
- **THE COMMITMENT OF GOVERNMENT LEADERS,** as evidenced by the enactment of enabling policy measures (such as the new literacy policy) and financial commitments, has also been instrumental to the program's success.

THE UNICEF “BRAND,” AS REFERENCED BY SEVERAL OF THOSE INTERVIEWED, HAS HELPED CREATE CRITICAL BUY-IN, ESPECIALLY AMONG GOVERNMENT OFFICIALS.

This relationship between individual competence and program success is consistent with existing literature, including Hartmann and Linn's understanding that “more than anything else, scaling up is about political and organizational leadership, vision and values,”¹⁰⁹ and Bing and Epstein's assertion that “simultaneous achievement of excellence and scale under challenging developing country conditions requires an entire range of dedicated stakeholders with a strong belief in the organization and its mission.”¹¹⁰

SCALING IS ABOUT MORE THAN SIMPLY INCREASING THE NUMBER OF BENEFICIARIES.

As exemplified by Palavra de Criança's evolution, scaling does not simply imply the growth of a program in terms of individuals reached. It should be viewed as a more dynamic process in which dimensions such as depth are as important as spread.

Applying Hartmann and Linn's^{III} dimensions of scaling, Palavra de Criança has shown an ability to adapt and mature quantitatively, functionally, politically, and organizationally. Quantitative replication occurred as the program model spread within Piauí and grew to Amazonas and potentially other regions (in 2016). This quantitative scaling is the result of many factors, but has been particularly aided by the flexibility of the model: municipalities can customize the program to their needs, and as such, are more likely to support the program. Functional scaling, which refers to expansion in the set of programmatic activities, is evident in the inclusion of pre-primary grades and the addition of family-centered activities and training. Political scaling remains an ongoing activity, with UNICEF playing a key role in engaging municipal and state representatives in pursuit of sustainable financing, akin to what was done in Ceará to acquire set-aside funding in the form of a commercial tax. Lastly, organizational scaling has manifested itself in the incubation of Instituto ProBem and the partnership with FAS.

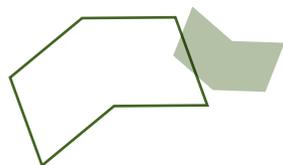
Indeed, the various adaptations made by Palavra de Criança underscore the complexity of scaling and highlight why the goal of immediate increases in the number of beneficiaries should not trump intelligent, sustained growth.

¹⁰⁸ Cooley & Linn (2014).

¹⁰⁹ Hartmann & Linn (2008).

¹¹⁰ Bing & Epstein (2013).

^{III} Hartmann & Linn (2008).



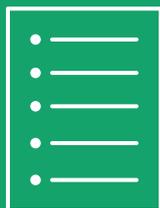
Changing the Paradigm



**INTRODUCTION OF
AN ACCELERATED
SCHOOL READINESS
PROGRAM
IN ETHIOPIA**







SUMMARY

Though improving, access and enrollment rates for pre-primary education are very low in Ethiopia, especially in rural areas. In response to a dearth of pre-primary offerings, the Accelerated School Readiness (ASR) intervention provides a 150-hour, two-month program with a focus on imparting pre-literacy, pre-numeracy, and social skills for children entering grade one who have not yet attended preschool.

The program, which leverages existing primary school infrastructure and human capital, has two delivery modes: one over the summer and another during the first two months of first grade. Educators receive pedagogical training for seven activities which employ engaging teaching methods, such as group activities, conversation cards, and games. ASR, which has the backing of Ethiopia's Ministry of Education, represents one prong of a broader strategy to scale pre-primary education through several delivery channels, with the goal of increasing the pre-primary gross enrollment rate (GER) from 25 percent in 2014 to 80 percent by 2019.

While full results from a randomized control trial will not be available until 2017, data from a small cohort reveal that children who participated in the summer ASR program had mathematics and literacy exam passage rates 10 and 11 percentage points higher than those who were not exposed to the program. ASR was also associated with an increase in pre-primary attendance of 29.1 percent in the Benishangul-Gumuz region, where it was piloted.

WHY WAS IT SELECTED?

The Accelerated School Readiness Program (ASR) presented a clear opportunity to rigorously measure and compare the relative effectiveness of two delivery options to provide high quality pre-primary education for children living in rural areas. Interest and support from national and local governments secured institutional traction, and use of existing physical and human resources ensured sustainability and scalability. The global importance of this evidence generation exercise was later recognized by the Strategic Impact Evaluation Fund (SIEF) of the World Bank.

KEY TAKEAWAYS FROM THE ACCELERATED SCHOOL READINESS EXPERIENCE:

1

INNOVATION IS ABOUT MORE THAN THE INTERVENTION ITSELF. IT IS ABOUT A BROADER AND DEEPER SPREAD OF NEW NORMS AND BELIEFS.

Beyond increasing exposure to pre-primary education, protocols introduced by ASR hold the potential to introduce a new paradigm of teacher preparation and classroom instruction.

2

THERE MAY BE TRADE-OFFS BETWEEN OPTIMIZING PROGRAM DESIGN AND “SEIZING THE MOMENT.” POLITICAL ECONOMY CONSIDERATIONS MUST BE TAKEN INTO ACCOUNT.

In order to take advantage of government support for the program, program leaders fast-tracked the design for a summer pilot, rather than risk losing such support by further refining its model.

3

THE CHOICE OF A PILOT SITE MAY HAVE IMPORTANT IMPLICATIONS FOR THE SUCCESS OF A PROGRAM.

In choosing Benishangul-Gumuz for a pilot site, ASR identified a region with an acute need but with enough enabling conditions to allow for proof of concept.



CONTEXT AND ORIGINS OF THE INNOVATION

The government of Ethiopia has made great strides in education over the past 15 years, most notably in increasing access and enrollment. This surge in enrollment has occurred at all levels but has been most pronounced in early grades. The country's primary school GER increased from 50 percent in 1999 to 106 percent in 2011, with the pre-primary GER rising from 4 percent in 2009 to 25 percent in 2013-2014.¹¹² These gains, while the product of many factors, can largely be attributed to a one-year "O" class and the Child-to-Child program¹¹³ which start at age 6 or 7, rather than the preferred pre-primary modality—a three-year kindergarten (KG) program that starts at age 3. As stated in the current Education Sector Development Plan (ESDP V), "A child who has completed three years of kindergarten...is currently better prepared than a child who has received one year of O Class or Child-to-Child programme."¹¹⁴

Furthermore, gains in access to early education have not been equally distributed. KGs are privately run and concentrated in urban areas, although nearly 84 percent of the country's population resides in rural areas. In Ethiopia's developing, largely rural regional states—Afar, Benishangul-Gumuz, Gambella and Somali—KGs are nearly nonexistent (see Figure 3.1 below). As Orkin, Yadete, & Woodhead note, "In rural areas, there are very few private [early childhood care and education] ECCE providers, either because parents cannot afford to pay school fees or

because they are not informed about the benefits of ECCE and do not demand services."¹¹⁵

Even when pre-primary education is available, the quality of instruction is often low and dropout and repetition rates are high. A lack of qualified teachers is partly responsible for this problem. Ethiopia's 36 teacher training colleges have limited capacity to offer pre-primary teacher training.¹¹⁶ Even in three-year KG programs, schools adopt a traditional pedagogical approach, with little consideration given to play-based methods, mother-tongue instruction, or the child's level of development.¹¹⁷

BOX 3.1: SCHOOL READINESS IS MADE A PRIORITY

The development of the Education Sector Development Plan coincided with the development of the 2016-2020 UNICEF Country Program Document (CPD). The 2016-2020 CPD notes increased school readiness as one of its key interventions, in order to ensure alignment with the sector plan. UNICEF (2015).

¹¹² UNESCO Institute for Statistics (2016).

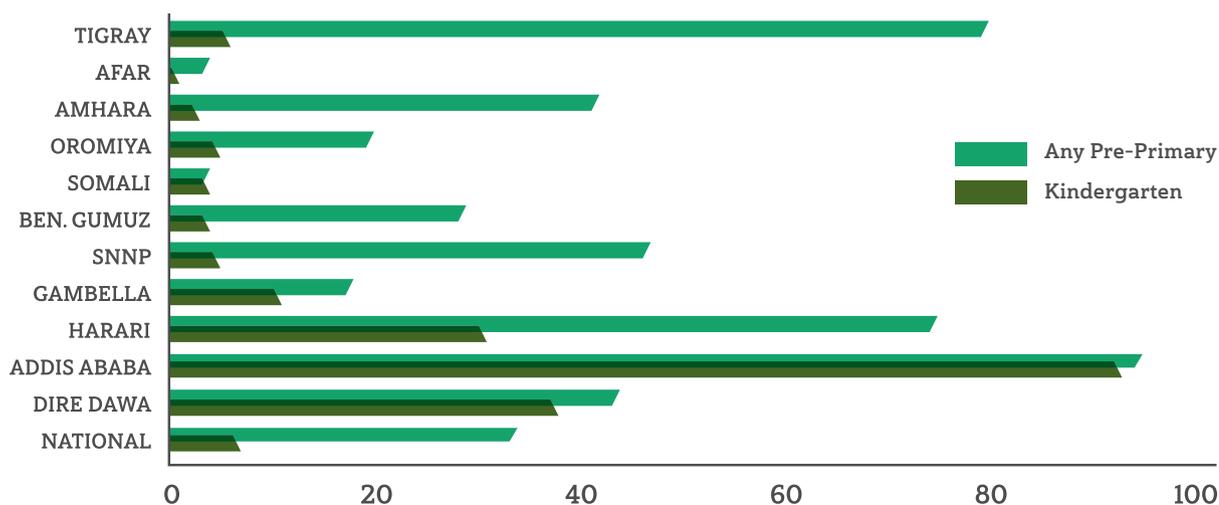
¹¹³ Grade "zero" in Ethiopia, referred to as O Class. O Class is offered to 6-year-olds who do not have access to kindergarten and are taught by teachers in local schools. The Child-to-Child program relies on peer tutoring to develop early learning competencies. Older "tutors" model appropriate behavior, while they reinforce their own learning through the process of instruction. See Table 3.2 for a comparison of the various pre-primary offerings in Ethiopia.

¹¹⁴ MoE (2015), p. 14.

¹¹⁵ Orkin et al. (2012), p. 24.

¹¹⁶ In 2015, seven of 36 colleges of teacher education (CTEs) began a multi-year diploma specifically for pre-primary teachers. MoE (2015).

¹¹⁷ Orkin et al. (2012).

FIGURE 3.1: GROSS ENROLLMENT RATE: ANY PRE-PRIMARY MODALITY VS KG ONLY (BY REGION), 2013/14

Lastly, rapid scaling of pre-primary education faces financial constraints. Though O Class expansion has occurred over the past two years, this approach has high infrastructure and management costs because new classrooms and additional, adequately trained teachers are needed. As a result, progress toward making early childhood education universal through O Class has been slow. In short, there is an urgent need to increase access to quality, cost-effective pre-primary education throughout the country.

The development of a school readiness program to respond to this challenge reflected a commitment of not only national actors; international parties have also played an influential role.¹¹⁸ In 2010, informed by a 2007 sectoral situation analysis and after three years' work by a task force,¹¹⁹ the Ministry of Education announced a new Early Childhood Care and Education (ECCE) policy. The policy contained four pillars: parenting education, health and early stimulation, non-formal school readiness, and establishment of preschools. This was important for both its symbolism—the policy represented a public acknowledgment of the importance of school readiness—and for practical reasons, for it provided an enabling environment in which to improve access to early learning opportunities and their quality.

Though the development of the ECCE Framework served as an important initial step, the results from the 2010 Early Grade Reading Assessment (EGRA) provided additional impetus for quality improvements. In each of the eight regions tested, at least 20 percent of children in grade two and 33.9 percent in grade three were not reading at the expected oral fluency rate. In Benishangul-Gumuz, the site of ASR's pilot, 34 percent of children in grade two read zero words correctly on an oral-fluency test in reading.¹²⁰ These disappointing results provided a useful spark for international and domestic actors, as they reinforced the belief that education quality was low.

Informed by these data, the issue of education quality occupied a prominent place in the discussions that led to the development of Ethiopia's 2015-2020 strategic plan. International actors, equipped with EGRA results, instead called for a renewed focus on pre-primary education. Through intensive dialogue, as well as pressure of a potential funding withdrawal, the government set an ambitious target in ESDP V: 80 percent GER in pre-primary education (whether O Class, Child-to-Child, KG, or ASR) by 2020.¹²¹ This goal represented a significant jump from the target in the previous sector plan of 20 percent enrollment.¹²²

¹¹⁸ In 2007, a situation analysis identified a number of weaknesses in the education system: high fees, lack of teacher training, lack of a standard curriculum, lack of culturally relevant storybooks, low teacher salaries and thus high turnover, the use of English as a medium of instruction, and, most important, a lack of awareness of the importance of ECCE. MoE (2010b).

¹¹⁹ The task force is composed of the Ministry of Education, Ministry of Health, Ministry of Women and Children's Affairs, UNICEF representing U.N. agencies, Save the Children representing

international NGOs, Basic Education Network (BEN) Ethiopia representing local NGOs, Addis Ababa University, and Kotebe Teacher Education College.

¹²⁰ Benishangul-Gumuz Regional Education Bureau & UNICEF Ethiopia (2015).

¹²¹ MoE (2015).

¹²² This target was reached.

With an agreed-upon sector plan that emphasized the importance of pre-primary education, the question then became how to reach the ambitious 80 percent GER target. International donors expressed willingness to invest heavily in this area, but only if the national government provided significant co-financing. At the national level, however, fiscal constraints and competing priorities prevented a long-term financial commitment. As a result, a low-cost program needed to be designed to initiate progress toward the target.¹²³ The solution was to test an accelerated school readiness program, with ESDP V committing to “conducting pilots for innovative strategies and using findings to inform contextualized expansion strategies.”¹²⁴

THE PROCESS USED TO DESIGN THE ASR PROGRAM

The ASR program was not the first of its kind. Similar models had been tested elsewhere, including in India and Cambodia, with some success. Nonoyama-Tarumi and Bredenberg’s study of a two-month grade one school readiness program in Cambodia, where access to pre-primary education is limited, found that the intervention positively affected “students’ immediate acquisition of school readiness skills as well as students’ longer-term achievement of formal curriculum.”¹²⁵

Cognizant of these experiences, with support from the State Minister of Education and Director of Curriculum Development and Inspection Directorate, UNICEF convened a technical working group (TWG) to guide the development of what became the ASR program.¹²⁶ ASR-specific Minimum Learning Competencies were then developed by a separate expert panel, composed of members of the ECCE task force and the TWG. The curriculum and approach of the ASR program were developed in three months—impressively fast given the amount of work involved.

BOX 3.2: UNICEF’S ROLE IN SUPPORTING ASR

UNICEF has functioned as a key partner in the conceptualization and implementation of the ASR program. UNICEF staff served on the task force to develop the ECCE framework, the expert groups to develop minimum learning competencies for O Class and grade one, and the technical working group for the ASR program. UNICEF has also played a critical role in designing and delivering training, in generating and sharing evidence, and in providing continued technical and financial support.

As a result of UNICEF’s many useful inputs to date, the Ministry of Education asked it to assist in developing materials for O Class, as it did for ASR.

However, key to the sustainability of the program will be the development of the capacity of domestic actors or another intermediary organization(s) to assume the roles that UNICEF has performed thus far.

¹²³ Program cost has been estimated at US\$25 per student per year.

¹²⁴ MoE (2015), p. 79.

¹²⁵ Nonoyama-Tarumi & Bredenberg (2009), p. 39. On page 44, the researchers note that, although the program’s effect on test scores was small (a quarter of a standard deviation), children who were involved in the program still maintained their learning advantage after one year.

¹²⁶ Before ASR materials were developed, the Ministry of Education had only an O Class manual and KG materials. The TWG, composed of officials from the Ministry of Education, Kotebe University College, and UNICEF, oversaw all aspects of the design of the program and performed quality assurance during the development of classroom materials that were culturally and age appropriate.



TEAM COMPOSITION, DESCRIPTION OF MODEL, AND EVOLUTION

It is critical to note that ASR is an interim strategy, not meant to displace but rather serve as a bridge to and inform an improved, full-year O Class program, and, ultimately, three years of KG for all children. This approach has important ramifications for plans to scale the program.

At its core, the program aims to address the lack of adequate access to preschool education through an accelerated 150-hour, two-month program focusing on pre-literacy, pre-numeracy and social skills for children entering grade one who have not yet attended preschool.

THE PROGRAM HAS TWO DELIVERY MODES:

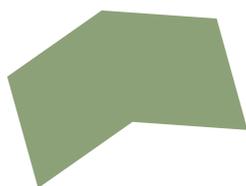
- **SUMMER ASR:** This program runs for two months in the summer before children enter grade one. It is facilitated by O Class teachers in respective school communities.
- **GRADE ONE (FALL) ASR:** In this model, ASR instruction occurs during the first two months of the grade one school year.

From the conceptualization of the ASR model through its implementation, many different actors have been involved, as described in Table 3.1.

THE PROGRAM AIMS TO ADDRESS THE LACK OF ADEQUATE ACCESS TO PRESCHOOL EDUCATION THROUGH AN ACCELERATED 150-HOUR, TWO-MONTH PROGRAM FOCUSING ON PRE-LITERACY, PRE-NUMERACY AND SOCIAL SKILLS FOR CHILDREN ENTERING GRADE ONE WHO HAVE NOT YET ATTENDED PRESCHOOL.

TABLE 3.1: ROLES OF DIFFERENT PARTNERS IN ASR

PARTNER	ROLE IN ASR
Federal Ministry of Education	Created new ECCE policy, with a focus on establishing more preschools. This provided an enabling policy environment for ASR. Supported the creation of, and participated in, a technical working group to guide ASR.
ECCE Task Force	Developed Ethiopia's 2010 ECCE Framework.
Technical Working Group (TWG)	Oversaw ASR program and curriculum design process and vetted the quality of ASR classroom materials. Includes officials from Ministry of Education, Kotebe University College staff, and UNICEF staff as members.
Minimum Learning Competencies (MLC) Expert Panel	Included members of the Technical Working Group and ECCE Task Force. Developed Minimum Learning Competencies specific to ASR program that aligned to O Class and grade one competencies.
Regional Education Bureau (REB) of Benishangul-Gumuz Region	Co-led implementation of ASR pilot program in 13 of 19 of the region's woredas by providing master trainers, hosting training sessions, organizing teachers, and mobilizing the community. ¹²⁷
Woreda Education Offices	Worked with the Regional Education Bureau to mobilize local parent teacher association (PTA) members to spread information about ASR. Provided mechanism for feedback from communities to REB.
UNICEF Ethiopia	Provided technical leadership and support in development of ASR concept, minimum learning competencies, and curriculum materials. Aided in implementation of ASR pilot in Benishangul-Gumuz.



¹²⁷ A woreda is the equivalent of a district. It is composed of sub-districts, which are called kebeles.

CONTENT AND PEDAGOGY

The ASR curriculum is divided into four “thematic” areas: personal and environmental awareness; pre-language skills; hand-eye coordination, pre-writing and pre-reading skills; and pre-mathematical skills. Instruction in these competencies takes the form of seven activities: conversation cards, storytelling, rhymes, indoor games/play/activities, outdoor games/play/activities, art, and individual activities. These activities contrast with the traditional KG curricula in Ethiopia, which tend to lack approaches that are designed with the developmental state of the children in mind. As Orkin et al. note, “There is an urgent need to introduce more developmentally appropriate child-centered curricula” in pre-primary programs.¹²⁸

BOX 3.3: TRAINING-OF-TRAINERS MODEL

ASR staff will need to carefully assess the efficacy of the training-of-trainers approach. While it has the potential to promote sustainability, this approach decentralizes the training process, raising quality concerns.

As Burns notes, “We all use the cascade approach for teacher professional development despite research showing that it has no impact, despite its extremely low rates of implementation, and despite the fact that it often disseminates not good practice, but malpractice.”¹²⁹

TRAINING: The ASR program uses a training-of-trainers (ToT) approach, in which master trainers are provided with guidance by a combination of experts from UNICEF, the Ministry of Education, and Kotebe University College. These master trainers then train future ASR instructors, drawn from O Class and

grade one. For the pilot program, 180 summer teachers were trained over five days in July 2015, with the training of grade one instructors occurring three months later. Notably, there was a shortage of teachers for the summer training: instead of training exclusively O Class or grade one teachers, 38 student teachers from Gilgel Bates Teacher Education College had to fill slots in the program.

COMMUNITY INVOLVEMENT: While the intervention was not designed in response to teacher or parent demand, the ASR program places an emphasis on community consultation during all stages of the program. Prior to rollout of the summer pilot, 995 participants received ASR orientation in June 2015. They included woreda (district) administrators, heads of finance and economic development, school principals, cluster supervisors, leaders in the PTA and Kebele Education and Training Board, and health extension workers. This served as an opportunity for myriad stakeholders to ask questions and familiarize themselves with the aims of ASR. An additional 26 education officials from the REB and various woredas participated in another intensive, two-day workshop on ASR.

Moreover, during the pilot phase, Woreda Education Offices trained PTA members on messages to spread during house-to-house visits that were intended to inform households about the importance of the program. In addition, parental focus groups were held to garner feedback on the model.

PILOT: Benishangul-Gumuz, a developing regional state in the western part of Ethiopia, was chosen for the pilot. Thirteen of 19 woredas in Benishangul-Gumuz were selected for ASR, including seven that were UNICEF-supported.¹³⁰ The six non-UNICEF woredas were selected for their proximity to UNICEF-supported woredas, equity (attempts were made to reach a diversity of language speakers and to achieve gender balance), availability of pre-primary interventions, and geographic/physical accessibility.¹³¹ With the addition of ASR, four modalities are now available to deliver pre-primary education.

¹²⁸ Orkin et al. (2012), p. 14.

¹²⁹ Burns (2014).

¹³⁰ UNICEF-supported woredas are those where UNICEF was already operating, in any sector, before ASR was implemented.

¹³¹ Information on woredas selected for ASR was obtained from the Regional Education Bureau’s presentation to UNICEF and R4D on November 18, 2015.

TABLE 3.2: FOUR MODALITIES AVAILABLE TO DELIVER PRE-PRIMARY EDUCATION

	KG	O CLASS	CHILD-TO-CHILD	ASR
FORMAL VS. INFORMAL	Formal	Formal	Informal	Formal
DURATION	Up to three years	One year	Up to three years (part-time)	150 hours over two months ¹³²
FUNDING	Private; tuition-based	Government	UNICEF/ Government	UNICEF/ Government
IMPLEMENTER	Private sector	Government	UNICEF and Government	UNICEF and Government
TEACHER	Private teachers	O Class public school teachers	Older children	O Class or grade one public school teachers (in a few cases other grade teachers)
APPROACH	Academic	Academic; School Readiness	Academic; School Readiness	Child-Centered; Play-Based; School Readiness
AGE GROUP	3-6 years	6-7 years	5-7 years	6-7 years

¹³² According to the Regional Education Bureau, both summer and grade one ASR last for 150 hours over two months. See slide titled, "2. Accelerated School Readiness (ASR) Implementation in Benishangul-Gumuz Region."



RESULTS TO DATE

The early results of the pilot have shown promise, although they also point toward several challenges that may merit further action by program implementers. The results described below are derived from a preliminary study to document school readiness outcomes obtained in the program's first cycle, from a small cohort of students.¹³³ A more rigorous study with a larger sample will be undertaken starting in the summer of 2016.

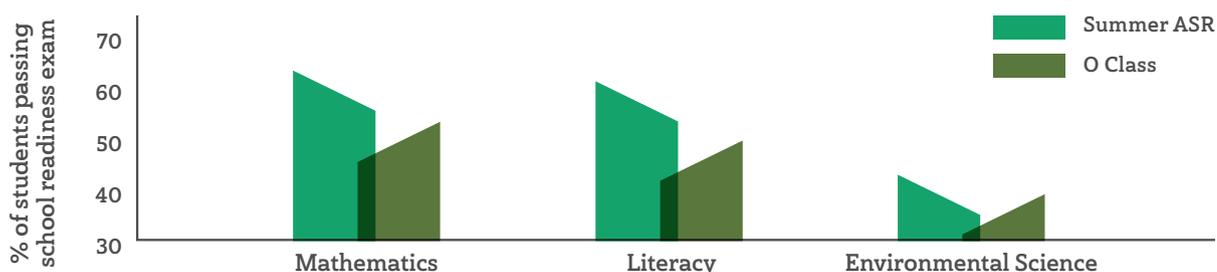
With regards to reach, the program achieved 84 percent of its target: it served 9,267 of the intended 11,000 children across 208 schools. In doing so, it increased pre-primary coverage from 38.1 percent to 49.2 percent in Benishangul-Gumuz. While this 11.1 percentage point gain was notable, this still meant that over 50 percent of children had not participated in a school readiness program. This implies that further scaling in Benishangul-Gumuz, is needed, not simply rollout to other regions.

Focus groups conducted in November 2015 suggested that exposure to ASR activities has

brought about noticeable changes. Parents and teachers reported that participating children have more confidence and are more capable of articulating their thoughts compared to peers not exposed to the ASR program. In addition, teachers noted that children in the program have been more adept at developing a variety of school-preparedness competencies, such as pre-writing, reading, numeracy, and self- and environmental awareness.

Training is reported to have been generally effective, with one interviewed teacher asserting, "I learned more in five days than I did in a one-year training program." A commonly cited factor for the training's effectiveness was its focus on pedagogical instruction rather than the mastery of specific subjects, as normally emphasized by traditional teacher training. Moreover, ASR training has had spillover benefits among teachers: instructors of other grades who have observed the ASR program have applied its methods, such as play-based activities and conversation cards, in their classes.

FIGURE 3.2 SCHOOL READINESS OUTCOMES



¹³³ American Institutes for Research (2016).

TABLE 3.3: POTENTIAL BENEFITS AND DRAWBACKS OF THE TWO ASR MODALITIES

	PROS	CONS
SUMMER ASR	<ul style="list-style-type: none"> · No concern about disturbing older students with loud play, since they are not in school. · Reaches children who did not have the opportunity to participate in O Class or other pre-primary education. 	<ul style="list-style-type: none"> · Limited availability of O Class and grade one teachers to receive training and teach, since many attend “upgrading” training during the summer. · Difficult for some parents to get children to school in the summer because of the weather (heavy rains and flooding). · Additional costs in the form of teacher stipends.
GRADE ONE ASR	<ul style="list-style-type: none"> · More cost-effective because it does not require additional payment to teachers as an incentive. · Reaches children who did not have the opportunity to participate in O Class or other pre-primary education. 	<ul style="list-style-type: none"> · May have adverse impacts on grade one achievement because it cuts into time available for covering grade one curriculum (need data to determine whether this is an issue).

With regards to academic school readiness outcomes, early results have been positive. As noted in Figure 3.2, compared to O Class, children who complete the summer session had higher passage rates on tests of mathematics, literacy and environmental science.¹³⁴

Despite these positive results, challenges have emerged. As noted above, the first training was undermined by a shortage of teachers, as several were already signed up for a separate, subject-specific “top-up” training. Also, some teachers have continued to employ traditional, less effective methods after their training (as incentives to change are not always present). In addition, teachers who use mother-tongue instruction appear to have been less able to

apply lessons from training because of reading proficiency issues (some local languages have only recently acquired a script).

Moreover, the popularity of the program has stimulated demand but, in doing so, has exacerbated problems of classroom overcrowding. Parents, impressed by the enthusiasm of their children participating in the program, frequently send younger siblings to attend ASR, rendering small-group instruction impossible.

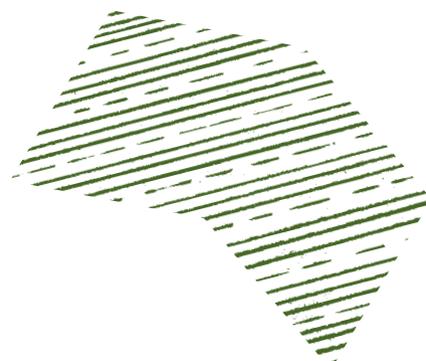
Lastly, given the rather rushed nature of the program rollout during summer, not all materials were available in the three local languages of Benishangul-Gumuz.

¹³⁴ The cohort size is 110 children.

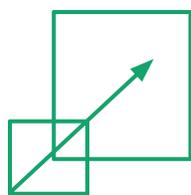
As noted earlier, a larger RCT is scheduled for the 2016 academic year. Government and UNICEF officials were intentional about embedding evaluation into ASR's pilot phase, recognizing that doing so could have multiple benefits, including:

- **INFORMING PROGRAM DESIGN:** Data on the relative effectiveness of the two school models will provide an empirical base upon which to decide the form that the program will take.
- **GENERATING ADDITIONAL FINANCIAL SUPPORT:** If shown to be an effective intervention, evidence from the evaluation could be used to mobilize additional sources of financing.
- **COMPARING OTHER MODALITIES:** Data from the RCT will allow for a comparison with approaches such as Child-to-Child, KG, and O Class to determine whether ASR produces different outcomes. This could influence the pre-primary scaling approach ultimately taken by the Ministry of Education.
- **PROVIDING A GLOBAL PUBLIC GOOD:** The results from this pilot could benefit other geographies in which similar initiatives are being contemplated. As Duflo notes, "The benefits of knowing which programs work and which do not extend far beyond any program or agency, and credible impact evaluations are global public goods in the sense that they can offer reliable guidance to international organizations, governments, donors, and nongovernmental organizations (NGOs) in their ongoing search for effective programs."¹³⁵

While the evaluation will provide useful data about the efficacy of the ASR intervention, it does not have an explicit scaling focus—i.e. it does not contain a set of questions about the extent to which the characteristics of the pilot environment may be found elsewhere.



¹³⁵ Duflo (2004), p. 342.



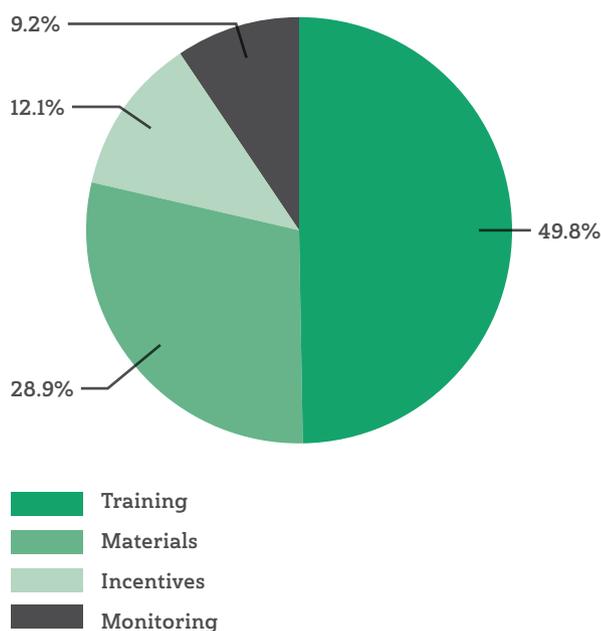
SUSTAINABILITY MECHANISMS, SCALING PLANS, AND CHALLENGES

Underscoring the notion that ASR is meant to be a bridge to a broader investment in pre-primary education, there is no explicit ASR scaling target. Instead, the intention is to increase access to various forms of early learning opportunities, including improving the quality of O Class, supporting and strengthening the Child-to-Child program, and identifying and documenting best practices in school readiness program implementation. Investment in all of these programs is intended to advance progress toward the 80 percent pre-primary gross enrollment target articulated in the ESDP V. There is an implicit acknowledgment on the part of policymakers, however, that less costly interventions like ASR are likely to expand in the short-term. As the ESDP V notes, “These first years and before system capacity is established to produce competent facilitators and required infrastructure, Child-to-Child and accelerated readiness programmes are expected to predominate.”¹³⁶

It is notable that those with a stake in the program who were interviewed consistently referenced the 80 percent target. This suggests that this is not just a statistic buried in a policy document, but a rallying cry used to stimulate

further action. More broadly, the articulation of a clear scale target serves as one example of how policy can play an important role in supporting the growth of a program.

FIGURE 3.3: ASR COST DRIVERS



¹³⁶ MoE (2015), p. 78.

Though the policy goal is broader than simply scaling the ASR program, a number of sustainability-promoting features would allow the ASR program to grow. Two are particularly salient:

COST CONTAINMENT: The Accelerated School Readiness program does not require investment in additional infrastructure (since existing classrooms are used for the program) nor in finding new teachers. Major financial outlays are limited to materials, training, monitoring, and incentives for summer teachers. However, this does not account for the costs to parents, whose children are not available for chores at home.

The cost per child reached in 2015-16 was US\$25, of which training costs represent nearly half (see Figure 3.3). This figure is expected to decline in future years, given that the development of materials has already taken place. Relative to the public, annual pre-primary unit cost of US\$57 and assuming costs decline, ASR represents good value for money.¹³⁷

GOVERNMENT SUPPORT: The program has been the beneficiary of buy-in at all levels of government, from the Minister of Education (hence the inclusion of ASR in the ESDP V) to Regional Education Bureaus to district officials. Government buy-in was reflected in a very real sense when, owing to delays in UNICEF disbursement, the regional government of Benishangul-Gumuz advanced the payment needed for the program's initial stage. Furthermore, members of the Regional

Education Bureau in Benishangul-Gumuz noted that they have been contacted by several other regional governments that are interested in ASR.

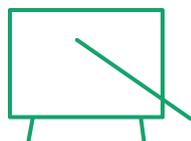
This support has translated into a strong desire from the federal Ministry of Education to scale ASR, especially the summer program. However, there may be a tension between the desire to take advantage of the avowed interest of the government and the desire to invest in evidence-based policy. It may be judicious for the government and UNICEF to await the results of the planned impact evaluation before expanding ASR more widely.¹³⁸

THE PROGRAM HAS BEEN THE BENEFICIARY OF BUY-IN AT ALL LEVELS OF GOVERNMENT.

It is also worth noting that a key enabling factor for the apparent success of the ASR pilot in Benishangul-Gumuz—the presence of a strong Regional Education Bureau, which has worked in harmony with UNICEF to plan the pilot—will not be present in other regions.

¹³⁷ UNICEF estimates, based on UNESCO Institute for Statistics (2016).

¹³⁸ Challenges in randomizing the assignment of schools to different treatments (summer ASR vs. grade one ASR vs. Child-to-Child vs. O Class) led to a one-year delay in the RCT, which will now take place in 2016.



LESSONS FOR OTHER INNOVATIONS

INNOVATION IS ABOUT MORE THAN THE INTERVENTION ITSELF. IT IS ABOUT A BROADER AND DEEPER SPREAD OF NEW NORMS AND BELIEFS.

Interviews with consulted stakeholders suggest that the impact of the ASR program could extend beyond those reached through the summer and grade one interventions. Teachers have, for example, adapted and applied ASR pedagogical techniques to non-first-grade classrooms. In addition, government officials expressed a desire to collaborate with the ASR technical working group to develop similar materials for O Class classrooms.

These unintended consequences have been accompanied by a more fundamental shift in norms and practices. ASR training participants reported that training was focused on pedagogy, rather than simply attempting to deepen subject matter expertise. If such a shift becomes more prevalent and spreads to teacher training colleges, it could equip teachers to improve learning

outcomes for many more children. Interviewees expressed confidence that the ASR program could have a catalytic impact along these lines. The program also appears to have brought a renewed sense of excitement—and a desire to revisit existing approaches—at least on the part of some teachers and administrators. Reports of these mindset shifts, while anecdotal, are an encouraging harbinger for the sustained success of the program.

The notion that an innovation can contribute to transformational change—beyond what is stipulated in a theory of change—is one that has been proven across other experiences. As Coburn, referring to education reforms, notes, “scaling up must involve more than the spread of activity structures, materials, and classroom organization; it must also involve the spread of underlying beliefs, norms, and principles...not only...moving to more and more classrooms but also reform principles or norms of social interaction becoming embedded in school policy and routines.”¹³⁹

THE PROGRAM ALSO APPEARS TO HAVE BROUGHT A RENEWED SENSE OF EXCITEMENT—AND A DESIRE TO REVISIT EXISTING APPROACHES—AT LEAST ON THE PART OF SOME TEACHERS AND ADMINISTRATORS.

¹³⁹ Coburn (2003), p. 7.

THERE MAY BE TRADE-OFFS BETWEEN OPTIMIZING PROGRAM DESIGN AND “SEIZING THE MOMENT.” POLITICAL ECONOMY CONSIDERATIONS MUST BE TAKEN INTO ACCOUNT.

Several stakeholders were quick to admit that the ASR program was not designed in an optimal way. While the teams involved in the design were strong (and included excellent government representation) and the process leveraged available technical expertise, the timeline was quite compressed. As a result, technical working group members worked nights and weekends, some materials arrived late, and not all were translated to the local languages. In addition, conflicting summer training obligations necessitated that additional teachers be brought in from training colleges. Although the pilot appears to have produced positive outcomes, it is possible that its rushed nature resulted in some diminution of quality.

With more time, these shortfalls may not have been present. However, UNICEF staff, while acknowledging this risk, noted that it was more important to take advantage of the momentum generated by the recently agreed-upon ESDP V and the establishment of a clear scaling target. In short, there was a conscious decision to forgo a potential gain in quality of the program—to be achieved by pushing the summer program back by a year—to avoid the risk of losing the support of domestic actors.

There are parallels between the experience of the ASR program and that of other innovations. It is often the case that innovators work in resource-constrained environments, where the interest and support of key government actors may be ephemeral. In such instances, there is a tension between an immediate demonstration of the effectiveness of an intervention and the rollout of a carefully designed program.

While the ASR decision was likely the right one, given that it has seemingly generated positive outcomes, this may not be the case elsewhere—where a rushed pilot could undermine the long-term success of a program.

THE CHOICE OF A PILOT SITE MAY HAVE IMPORTANT IMPLICATIONS FOR THE SUCCESS OF A PROGRAM.

The choice of pilot site on the part of UNICEF and government actors was a very intentional one. They wanted to choose a region where there was a particular combination of characteristics: the real possibility of demonstrating positive results, but also a pressing need.

Benishangul-Gumuz offered the possibility of success largely because of UNICEF’s prior involvement there. Already present was a cadre of technically strong UNICEF staff, who had good relationships with the Regional Education Bureau. The presence of strong relationships, developed through the launch of a successful Child-to-Child program in the region, suggested that an early grade education innovation could indeed generate positive outcomes in the region.

However, it was also important to pilot the ASR program in a developing region, where the need was great and there were some built-in challenges. As Trucano notes, if an innovation succeeds in a “privileged” environment, this may be the product of a number of characteristics that are not present in other, less advantaged areas.¹⁴⁰ Benishangul-Gumuz fits this profile, in the form of an undersupply of high-quality teachers, low levels of learning (e.g., 54 percent of children in the region had grade two reading comprehension scores of 0 percent), and the presence of multiple local languages.

As such, while having elements of an enabling environment are important for the choice of a pilot, a place rich in advantages may require that the elements which made the program successful in that location be put in place in another location to achieve a similar success. When that is not the case, similar outcomes may not be achieved. The choice of a pilot site should thus be an intentional one—and one made with a long-term view.



¹⁴⁰ Trucano (2013).



Cultivating a Culture
of Learning in Ghana



IMPROVING LIVELY MINDS THROUGH RIGOROUS EXPERIMENTATION







SUMMARY

The poor quality of kindergarten (KG) leaves many children in rural villages of Ghana without the early stimulation and learning opportunities that they need to thrive. In response, the innovative Lively Minds program equips mothers in the Upper East and Northern regions of Ghana, who have limited formal education, to serve as volunteers to support teachers in administering play-based activities that use locally produced materials during KG classes.

Lively Minds fills an important gap in the country, which has a supportive policy environment for early childhood programs yet significant barriers to achieving high quality at the KG level, including limited teaching and learning materials and crowded schools. Lively Minds has gradually expanded from eight play schemes in 2009 to 80 in 2015, reaching 9,600 children. An ongoing evaluation with a quasi-experimental design noted that children participating in play programs improved 31 percent on cognitive assessments after three months, compared with a 13 percent improvement for children in communities with no play schemes.

Play schemes also have been linked to reduced absenteeism among teachers (2.6 percent absentee rate in communities with play schemes compared with a national average of 23 percent), and volunteer mothers have also noted the program's positive impact on their own well-being.

Through the next phase of scale-up, Lively Minds hopes to reach over 50,000 children with play schemes by 2018.

WHY WAS IT SELECTED?

The Lively Minds proposal scored high in all selection criteria. This intervention continually monitors its effectiveness by measuring children's cognitive gains and health outcomes as well as teacher absenteeism. Its delivery model trains and engages parents and teachers, aiming for traction and sustained buy-in. To improve its scalability, the team intentionally departed from a direct delivery model, aiming to test the quality of a training-of-trainers (ToT) model that could be cost-effectively adopted by the Ghana Education Service.

KEY TAKEAWAYS FROM THE LIVELY MINDS EXPERIENCE:

1

CONTINUAL TESTING AND EXPERIMENTATION CAN ENHANCE THE LIKELIHOOD THAT AN INNOVATION WILL EFFECTIVELY SCALE.

Lively Minds' continual pursuit of data and use of evidence has generated additional support and allowed it to improve its model.

2

BUY-IN CANNOT BE VIEWED AS A SINGLE ACTIVITY TO BE CARRIED OUT UP FRONT.

Lively Minds has shown that buy-in from government partners must be continually reinforced through cooperative activities and a transfer of knowledge.

3

A CULTURE IN WHICH KEY STAFF MEMBERS FEEL OWNERSHIP AND A SENSE OF EMPOWERMENT CAN IMPROVE RESULTS AND CREATE A MORE SUSTAINABLE MODEL.

In using teachers as training facilitators, Lively Minds has created a culture in which they feel more connected to, and responsible for, the program's aims.



CONTEXT AND ORIGINS OF THE INNOVATION

Ghana has witnessed rapid growth over the past 10 years, with its GDP increasing by five times and the incidence of extreme poverty having been halved. This has been accompanied by significant improvements in the education sector, as enrollment in basic education doubled from 3.5 million students in 2000 to 7 million in 2010. Significant disparities in enrollment remain with children from the poorest households three times more likely to be out of school than wealthy children. In addition, there are significant regional and ethnic disparities. Children from the Northern region are four times more likely to be out of school than children in the Ashanti region, and children from the Gruma group are 2.5 times more likely to be out of school than children from the Akan majority ethnic group. Though gender parity in enrollment has been achieved at the national level, gender gaps exist in some areas, including in the Northern region.¹⁴¹ Moreover, quality

in the sector remains low, as evidenced in results from the National Education Assessment (NEA), which found in 2011 that only 24 percent and 18 percent of students in the country attained proficiency in math and English at the grade three level.¹⁴²

Given the link between early childhood interventions and adolescent and adult outcomes, these poor NEA results highlight the importance of early childhood development (ECD) programs in the country. The Government of Ghana (GoG) has commendably made commitments to ECD, as reflected in the 2004 National Early Childhood Care and Development Policy, which aims to promote the survival, growth, and development of children 0 to 8 years old. This policy framework is designed to support the achievement of various targets, including a reduction in infant mortality rates, an increase in preschool enrollment rates, and a decrease

THE GOVERNMENT OF GHANA HAS COMMENDABLY MADE COMMITMENTS TO ECD, AS REFLECTED IN THE 2004 NATIONAL EARLY CHILDHOOD CARE AND DEVELOPMENT POLICY, WHICH AIMS TO PROMOTE THE SURVIVAL, GROWTH, AND DEVELOPMENT OF CHILDREN 0 TO 8 YEARS OLD.

¹⁴¹ Government of Ghana & UNICEF (2012).

¹⁴² Darvas & Balwanz (2014).

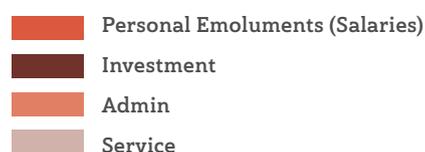
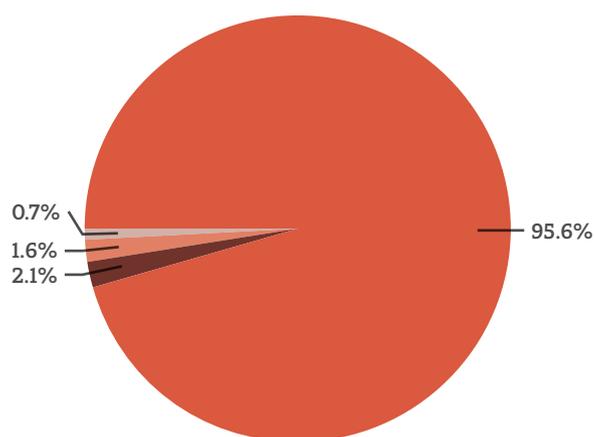
in gender disparity in primary school enrollment.¹⁴³ After the adoption of this policy framework in 2007, two years of preschool (KG) for 4- and 5-year-olds became a compulsory part of the primary education system.¹⁴⁴ Subsequently, this policy change, coupled with the provision of capitation grants (funds allocated by the government to schools based on the number of children enrolled)¹⁴⁵, has increased demand from families for preschool¹⁴⁶ leading to gains in enrollment: Between 2002-3 and 2011-12, gross enrollment in preschool increased from 49 percent to 99 percent.¹⁴⁷

Although access to preschool has expanded, quality remains uneven. Site visits to preschool classes as part of a 2011 UNICEF study found problems related to overcrowding and poor infrastructure, and a dearth of teachers with training in early education. Teachers were observed to lack the skills to engage and work interactively with students, and the availability of teaching and learning materials was limited.¹⁴⁸

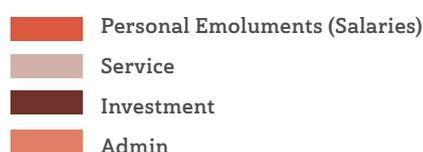
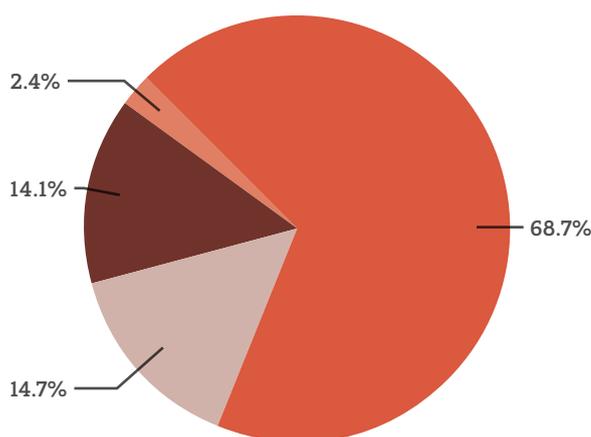
Though the need for quality improvement is clear, government resources for such initiatives are limited. Public spending on education amounts to about 6 percent of GDP in Ghana, suggesting that it is a high budget priority, but in 2010 as much as 97 percent of the GoG education budget was used to pay salaries. Salaries are often under-budgeted and end up crowding out other types of expenditures during budget execution.¹⁴⁹ As Figure 4.1 indicates, while the GoG education budget primarily finances salaries, the government relies on donor financing to support investment and expenditures on services.

FIGURE 4.1: EDUCATION EXPENDITURES IN GHANA¹⁵⁰

GoG Education Expenditure, 2011



Total Education Expenditure, 2011



¹⁴³ Government of Ghana (2004).

¹⁴⁴ Adamu-Issah et al. (2008).

¹⁴⁵ Capitation grants are funds allocated by the government to schools based on the number of children enrolled.

¹⁴⁶ UNICEF (2011).

¹⁴⁷ World Bank (2012).

¹⁴⁸ UNICEF (2011).

¹⁴⁹ World Bank (2012).

¹⁵⁰ Adapted from Darvas & Balwanz (2014).



TEAM COMPOSITION, DESCRIPTION OF MODEL, AND EVOLUTION

The development of Lively Minds was a product of many factors, foremost among them the vision of its founder, Alison Naftalin, who, in 2007 traveled to Tamale, Ghana, to volunteer for two months. It was during this time that she observed that teachers were not imparting problem-solving skills, as young children were not being afforded the opportunity to explore or actively interact with content. This learning crisis was in part a reflection of the limited training of teachers—in 2010-11, Ghana had only one trained teacher per 96 pupils at the KG level.¹⁵¹

AT THE SAME TIME, SHE WANTED TO EMPOWER LOCAL COMMUNITIES, RATHER THAN TO HAVE A SOLUTION THAT WOULD BE DOMINATED BY A NONGOVERNMENTAL ORGANIZATION.

Naftalin's role as a champion has been crucially important for not only the conceptualization but also the sustained success of the Lively Minds program. In search of a solution to the problem of passive instruction and ways

in which to support young children's holistic development, Naftalin began to conceive of a model which integrates learning through play with parenting and health and hygiene support. At the same time, she wanted to empower local communities, rather than to have a solution that would be dominated by a nongovernmental organization. Conversations with early childhood experts convinced her of the importance of play in childhood development.

Once the Lively Minds program was piloted in one community, leaders in other communities expressed interest. This growth was facilitated by relationships developed with individuals and community-based organizations, which provided critical guidance on working within community structures, particularly related to navigating local hierarchies in order to gain support from community leaders. Naftalin partnered with the local organizations Centre for Active Learning and Integrated Development (CALID) and Cooperation for Integrated Development-Ghana (CID-Ghana) to pilot three play schemes in Kotingley, Vittin and Wayamba villages. The program also spread in Uganda through a similar process, whereby Naftalin expanded play schemes in collaboration with other individuals and community organizations.

¹⁵¹ World Bank (2012).

It is through one of these partnerships that Lively Minds expanded its team and eventually its model. David Abukari, who worked with CALID at the time, was central to facilitating the growth of the play schemes by combining his deep knowledge of the education system in Ghana with a passion for the emerging Lively Minds model. He, like Naftalin, was a champion, as he worked to raise awareness of the model in communities, bring in additional stakeholders, and make play schemes operational. Although he began by collaborating with Lively Minds through a partnering organization, he ultimately took on a role with Lively Minds as the full-time country manager in Ghana. As a team, Naftalin and Abukari were able to build on each other's strengths: Abukari offered a deep understanding of the context and relationships with local stakeholders, and Naftalin had the ability to mobilize external resources and expertise. Together, they were able to refine and expand the Lively Minds model in Ghana.

SCALING UP APPROACHES ARE NOT MUTUALLY EXCLUSIVE

The growth of Lively Minds' play schemes in Ghana reflected two distinct methods of scaling up. The first approach is what Hartmann and Linn (2008) term an "individualistic" one in which so-called searchers are guided by their own vision, knowledge, and leadership to apply their solutions and bring them to scale. This approach underscores the importance of people in the scaling process. It is reflected in the ways that Naftalin and Abukari, informed by their own vision, have grown the Lively Minds' play schemes and sought ways to enhance their effectiveness and sustainability.

The second approach that Hartmann and Linn describe is a "relational" one, in which community empowerment and engagement are critical elements of the scaling process. As noted below, community members have been heavily involved in the growth of the program and in its delivery, as seen, for example, through the use of mothers as play scheme leaders.¹⁵² In addition, community experiences and feedback have been critical for adapting the program model to meet local needs.

BOX 4.1: LIVELY MINDS UGANDA

After initially developing the program model in Ghana, Naftalin traveled to Uganda to pilot play schemes in rural communities in partnership with several organizations. These included Samika, Hope of the Generation Uganda (HOGU), and Child Fund International. As play schemes developed in a few communities, neighboring ones began to express a desire for them. After seven such play schemes were established, Samika founder Sarah Kanvonga decided to make a concerted push to establish more. This led to the formal development of Lively Minds Uganda. Though the programs in Uganda and Ghana largely resemble each other, key differences reflect how Lively Minds has tweaked its model for different contexts. For example, play schemes in Ghana operate in government kindergarten classes, but KGs are not part of the academic sequence in Uganda. Instead, the program takes place in other buildings, such as churches. Moreover, in Uganda, the prevalence of child sacrifice led to the development of a play-based program to prevent this practice.

¹⁵² Hartman & Linn (2008).

That there are elements of both of these modes of scaling suggests that they are not mutually exclusive. A program could scale because of strong central leadership but also because beneficiaries are empowered to participate in decision-making—for example, by deciding whether to bring a program into the community.

Figure 4.2 charts the growth of Lively Minds' play schemes in Ghana.

FIGURE 4.2: GROWTH OF LIVELY MINDS PLAY SCHEMES*



*The number of children reached is an approximation based on the number of children attending a play scheme on average

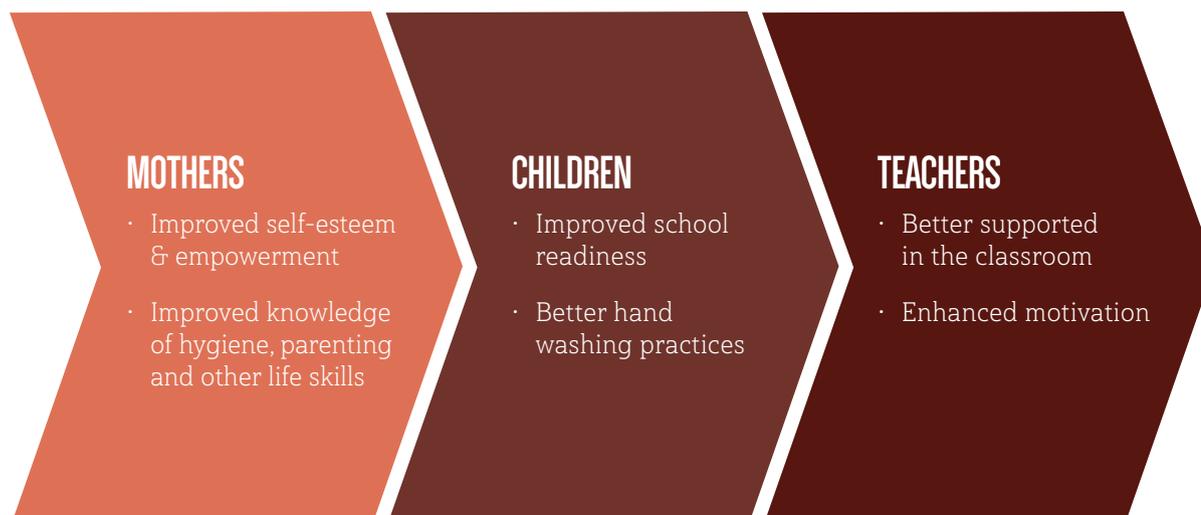
THE LIVELY MINDS MODEL AND ITS EVOLUTION

In the Lively Minds model, mothers are recruited, trained and supported to run play schemes in kindergarten classes as volunteers alongside teachers. These play schemes involve encouraging children to learn through playing with low-cost, local teaching and learning materials, such as bottle caps for counting. The play schemes are meant to accelerate improvements in physical, cognitive, language, and social and emotional development through six activities: numeracy games, sensory awareness games, construction games (interactive building-type games), matching games (games that help children recognize patterns and shapes), reading and storytelling, and outdoor games. The program also provides mothers and teachers with information on health and encourages handwashing at hygiene stations. Figure 4.3 demonstrates how Lively Minds supports its three distinct groups of beneficiaries—children, mothers, and teachers.

The Lively Minds program has four pillars: community engagement, capacity building and training, integration of health and hygiene, and utilization of monitoring and evaluation activities.

COMMUNITY ENGAGEMENT: Communities are deeply involved in all aspects of the program, which has helped drive its success (see Figure 4.4). Community involvement begins during the selection process. Lively Minds and GES staff members discuss potential circuits (educational units within districts) in which to introduce the program. Criteria used to identify a circuit include the number of schools within it and the presence of a responsive circuit supervisor. The supervisor bears responsibility for overseeing the administration of the circuit and reports to the district director,¹⁵³ who can support monitoring activities. Once a circuit is identified, Lively Minds staff and circuit supervisors jointly visit schools and evaluate them against key criteria. These include the need for the program in the school, the school's accessibility, the space available for kindergarten classes, the presence of kindergarten teachers, general interest in the program, and the number of students in a school.

153 Ame et al. (2011).

FIGURE 4.3: LIVELY MINDS BENEFICIARIES

After schools are identified, Lively Minds and the circuit supervisor approach community leaders and encourage a joint application to the program from teachers, including the head teacher, and the PTA chair. After an application is complete and a school is formally selected, training for kindergarten teachers takes place. Once KG teachers are trained, they hold a community meeting to explain the program and its benefits and to recruit volunteers. Other community meetings are held when volunteers complete their training and to celebrate program accomplishments.

CAPACITY BUILDING AND TRAINING: Robust capacity building and training for teachers and volunteer mothers is an essential element of the Lively Minds model. Teachers are trained over the course of 10 sessions, which provide them with the skills to train mothers in their communities. Teachers also are provided regular “top-up” training once play activities are running in a community. During these top-up sessions, teachers are instructed on how to lead the capacity-building workshops (see below) which they facilitate for the mothers.

Mothers who volunteer are trained by the teachers in nine sessions, each two hours long, before a play scheme opens. They receive instruction on how to facilitate play schemes

to maximize child engagement and stimulation and how to replace worn teaching and learning materials. These training sessions for volunteer mothers, once led by Lively Minds staff, are now administered by exemplary teachers, who in turn are overseen by high-performing teachers from pre-existing play schemes. Once training is complete, the mothers and teachers jointly administer a play scheme.

In addition, volunteer mothers are given capacity-building workshops each month by teachers, with instruction on topics as diverse as malaria and diarrheal disease prevention, conflict resolution strategies, and methods to boost self-esteem. The topics for these workshops are drawn from observations in the field during monitoring visits as well as through focus groups. In addition to receiving formal training, volunteers are supervised by the teachers and regularly provided feedback on performance through monitoring visits by Lively Minds staff and circuit supervisors.

INTEGRATED HEALTH AND HYGIENE:

Another major feature of the Lively Minds program is its integration of health and hygiene services. As noted above, mothers receive information about diarrheal disease and malaria prevention, in addition to well-being support. Mothers are also trained to encourage children to use hygiene stations or “tippy-

taps”—a simple device for handwashing with running water—and the practice is made part of the daily routine. In addition to providing proper instruction on handwashing, mothers are responsible for bringing water and ash¹⁵⁴ to the community to support the activity.

MONITORING AND EVALUATION: Lively Minds staff members train circuit supervisors to monitor play schemes in addition to their other supervisory duties, and regularly carry out joint monitoring visits with them. These

visits are unannounced. A scoring system is used to identify when communities are not doing well—these scores then inform the frequency of additional monitoring visits and the need for additional capacity-building efforts. In addition, monitoring data on teacher performance are used to identify high-performing teachers who can serve as training facilitators for the program. These data are shared with senior district and regional education officials. To encourage circuit supervisors to carry out monitoring, Lively Minds provides them with limited fuel subsidies.

FIGURE 4.4: ENGAGEMENT WITH GHANA EDUCATION SERVICE AND LOCAL COMMUNITIES TO IDENTIFY PLAY SCHEME SITES AND IMPLEMENT PROGRAM

<p>CIRCUIT SELECTION</p>	<p>Lively Minds works with the district director to determine the circuit. Criteria for circuit selection include:</p> <ul style="list-style-type: none"> · Number of schools. · Presence of a responsive circuit supervisor.
<p>SCHOOL SELECTION</p>	<p>After a circuit is selected, Lively Minds staff and circuit supervisors visit schools and evaluate them against key criteria including:</p> <ul style="list-style-type: none"> · Need/Interest among community for play scheme. · Proximity of Lively Minds staff to school community. · Sufficient number of students. · Availability of kindergarten classroom space. · Presence of at least two KG teachers. <p>Once a school is identified, Lively Minds and the circuit supervisor will encourage a joint application from the head teacher, teachers, and PTA chair. This application will then be evaluated.</p>
<p>PROGRAM IMPLEMENTATION</p>	<ul style="list-style-type: none"> · Teachers—and mothers who have volunteered—are trained, and capacity-building workshops are provided to GES district teams. · Community meetings are held at key program milestones. · Monthly meetings are held with circuit supervisors.

¹⁵⁴ In low-income communities where soap is not readily available, ash is often recommended as a low-cost alternative for removing bacteria.

In addition to these monitoring activities, Lively Minds has performed internal assessments on its beneficiaries. These data have supported adjustments to the program model; for example, through these internal assessments, the program identified low rates of play at home, which prompted the program to introduce additional activities for volunteer mothers to provide parenting support. Qualitative feedback is also obtained through focus groups with beneficiaries and used to make adjustments to the program.

Furthermore, an independent external evaluation was commissioned to validate and supplement

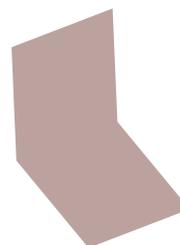
the findings of internal assessments and to understand key success factors and challenges related to process, impact, and scalability. The independent evaluation, which relied on primary and secondary research, found play schemes to provide an effective, low-cost, and replicable model for simultaneously addressing social, health, and educational challenges.¹⁵⁵ In 2015-16, the program only cost US\$49 per child.

By investing in monitoring and evaluation activities, Lively Minds has been able to support continuous improvements in its model and measure and communicate program impact.

BOX 4.2: 'LISTEN VERY CAREFULLY' TO FEEDBACK

Louis Boorstin, former deputy director of the Water, Sanitation, and Hygiene program at the Gates Foundation, notes in a recent article: "The common thread that united our most effective grantees was an ability not only to focus on systems, but also to listen—to listen very carefully to the poor. In other words, they were able to observe the choices being made by the poor and to understand the motivations behind those choices. That combination generates approaches that have the potential to achieve large scale and sustainability."

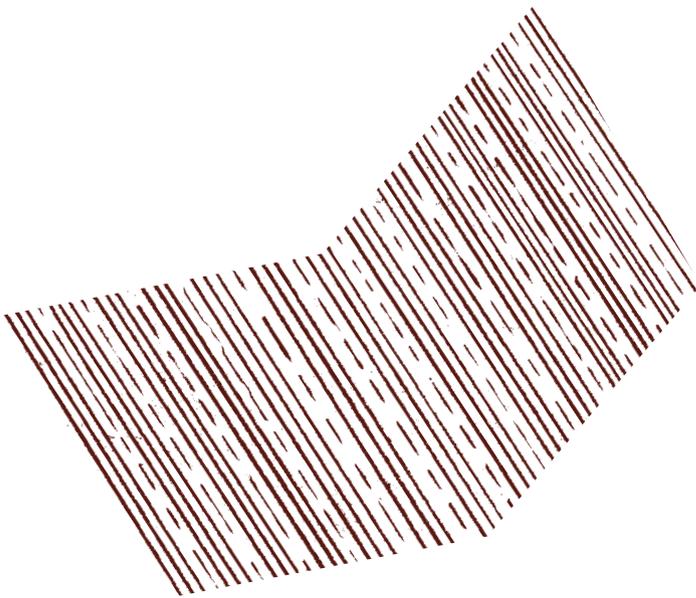
With Lively Minds, qualitative feedback is obtained through focus groups with mothers, and this feedback is used to inform program changes. For example, it emerged that some fathers saw their wives' attendance as disruptive of agricultural activities. As a result, Lively Minds began to invite fathers to monthly capacity building workshops in order to sensitize them to the program's objectives.



¹⁵⁵ Dogbe & Marshall (2016).

TABLE 4.I: THE ROLES OF KEY PARTNERS INVOLVED IN LIVELY MINDS PLAY SCHEMES

ORGANIZATION	ROLE IN LIVELY MINDS
Lively Minds UK & Lively Minds Ghana	Oversee the implementation of play schemes. Work with GES and community leaders to identify kindergarten classes in which to open play schemes. Train kindergarten teachers to support and train mothers who volunteer their time. Collaborate with GES circuit supervisors to monitor play schemes.
Ghana Education Service (GES)	Responsible for implementing pre-tertiary education policies formulated by the Ministry of Education in Ghana. Involved at the district level in identifying schools where the program will be implemented in collaboration with Lively Minds staff, as well as monitoring play schemes through circuit supervisors. Supplies GES teachers and head teachers who train volunteer mothers and supervise play schemes.
UNICEF (HQ & Ghana)	UNICEF HQ transferred funds to UNICEF Ghana to provide partial funding (alongside other donors) from 2014 to 2015 to open 30 new play schemes in Ghana, using a ToT model.



EVOLUTION OF THE MODEL

The Lively Minds model has evolved significantly since the program began. These shifts have highlighted the dynamism required by most innovations if they are to survive. The program's evolution has been influenced by a number of inputs, including feedback from stakeholders, and results from internal monitoring. Major changes that have occurred since the program's inception relate to the program's integration into the school day, volunteer base, training model, and use of incentives.

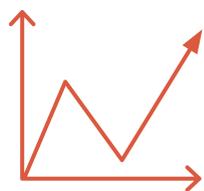
- **TIMING:** Lively Minds began as an after-school program but was integrated into the regular school day after discussions with GES. Since the time of this change, the program has been able to reach a much larger population, namely children who are already in kindergarten classrooms.
- **INCENTIVES:** In its earliest formulation, the program was guided by the belief that incentives should not be provided to volunteers because their provision could pose a threat to the program's sustainability. Lively Minds noticed dwindling participation, however, and decided to experiment with rewards such as school uniforms. These efforts proved to be ineffective. Ultimately, the Lively Minds staff decided to try to empower and incentivize volunteers through training in a variety of life skills through monthly activities, as noted earlier. Anecdotal evidence suggests that since the introduction of these monthly activities, attendance among volunteer mothers has been relatively high (at around 80 percent) and more consistent when compared to attendance rates in earlier iterations of the program.¹⁵⁶ This is also in keeping with the program's central philosophy that parents hold ultimate responsibility for their children's development.
- **COMPOSITION OF VOLUNTEERS:** The makeup of the volunteer base has also evolved. Lively Minds staff originally trained junior high school students to facilitate play schemes, in order to provide them with leadership responsibilities. However, this arrangement proved to be ineffective, as junior high school students left the community for further educational opportunities. As a result, the program began to recruit mothers as volunteers. Mothers were seen as a stable presence in the community, and had been successfully recruited in Uganda to administer the play schemes. In addition to mothers,

several grandmothers have volunteered to participate in play schemes. In response to their low literacy levels and limited experience in classroom environments, Lively Minds' training program had to be redesigned to support mothers and grandmothers.

THE LIVELY MINDS MODEL HAS EVOLVED SIGNIFICANTLY SINCE THE PROGRAM BEGAN. THESE SHIFTS HAVE HIGHLIGHTED THE DYNAMISM REQUIRED BY MOST INNOVATIONS IF THEY ARE TO SURVIVE.

- **TRAINING:** The most recent, and perhaps most significant, change has involved the training of volunteers. Though Lively Minds staff members previously directly trained volunteers to run play schemes, they have since adopted a training-of-trainers (ToT) model in which Lively Minds staff train kindergarten teachers, who then train mothers. This new training model will increase the reach of the program by facilitating the opening of multiple play schemes concurrently. Though the introduction of the ToT model has raised concerns about loss of quality, initial evidence suggests that mothers who receive training through the ToT model perform at least as well as those who get their training directly from Lively Minds staff. KG teachers, who feel better supported and more empowered as a result of their key role as trainers, have also demonstrated lower rates of absenteeism.

¹⁵⁶ Ibid.



RESULTS TO DATE

The impact of the program has begun to emerge through observation and dialogue with key stakeholders, as well as through the interim results of an ongoing quasi-experimental evaluation. This internal evaluation is intended to provide data on the effectiveness of the newly implemented ToT approach. As noted earlier, an independent external evaluation was also commissioned to validate these internal findings and further understand the program's impact.

The midline results of the quasi-experimental evaluation¹⁵⁷ as well as the independent external evaluation¹⁵⁸ suggest that the ToT model has been largely effective (see Figure 4.5). Children in these play schemes improved 31 percent in performance on cognitive assessments after three months. Children in pre-existing play schemes, where Lively Minds staff delivered training directly to volunteer mothers, have also demonstrated improvement in cognitive assessments (by 24 percent from baseline to three months) while children in communities with no play schemes improved by only 13 percent. These data are supported by teachers' perceptions. Teachers reported that children's level of engagement in the classroom was much higher after implementation of the play schemes.

In addition, teacher absenteeism in play schemes where the ToT model has been implemented was 2.6 percent, remarkably low compared with a national average of 23 percent. In directly training volunteer mothers in the ToT model, teachers report feeling empowered, due to their heightened responsibilities. Teachers also noted feeling better supported due to the Lively

Minds capacity building activities and from the presence of volunteer mothers who help relieve the burden of managing overcrowded classrooms. Play schemes in the previous training model were reported to have a teacher absenteeism rate of 17 percent, potentially a result of less ownership among these teachers for the play schemes as well as less frequent consultation with education districts.

CHILDREN IN THESE PLAY SCHEMES IMPROVED 31 PERCENT IN PERFORMANCE ON COGNITIVE ASSESSMENTS AFTER THREE MONTHS.

Volunteer mothers have also demonstrated strong performance in play schemes. In a range of performance indicators used by circuit supervisors, average performance of the mothers in the two models is nearly identical. These mothers have also increased their awareness for the importance of education and have translated their knowledge of learning through play to their homes, as demonstrated in the frequency with which they use play and stimulating activities at home. Mothers who engaged in play schemes through the ToT model increased their use of play and stimulation in the home by 45 percent after three months, compared with only 23 percent in communities where play schemes have not been implemented.

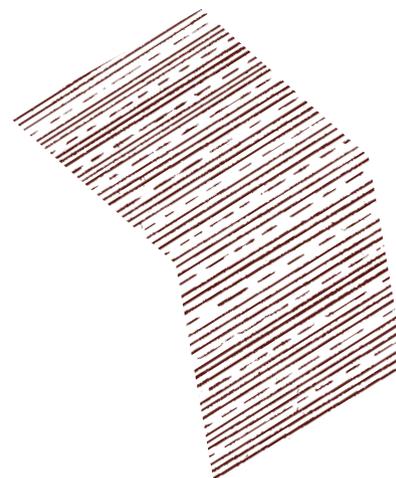
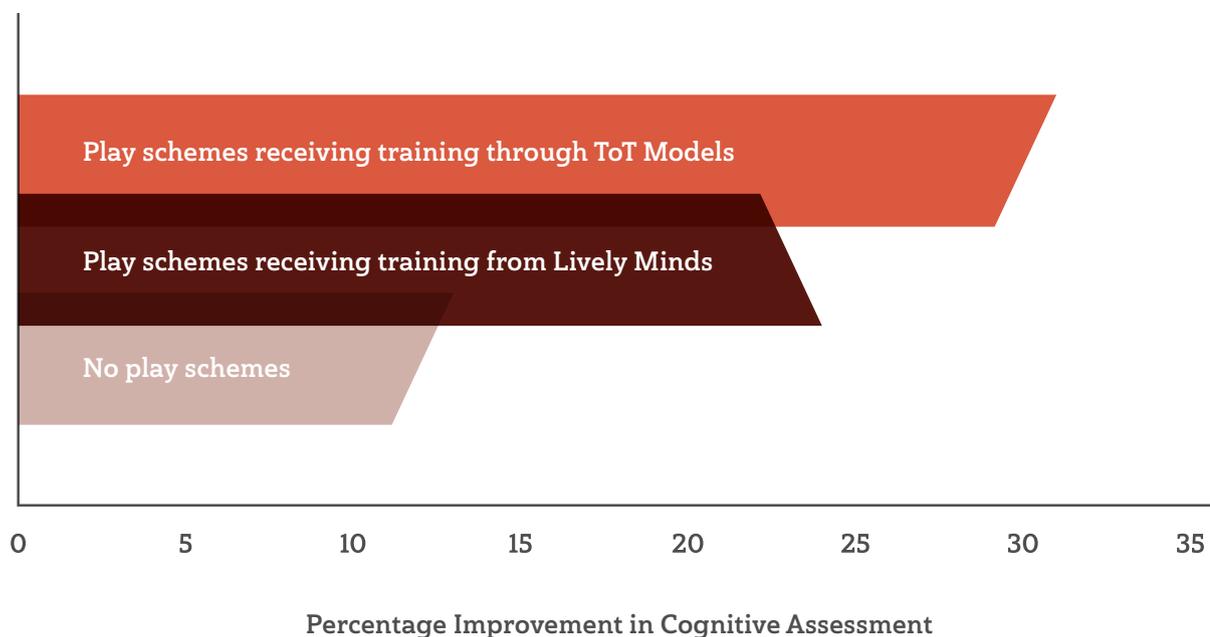
¹⁵⁷ Lively Minds (2015b).

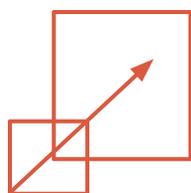
¹⁵⁸ Dogbe & Marshall (2016).

Lastly, interviews with mothers revealed that they have been able to acquire new literacy skills and greater awareness for how to support their children's development. Additionally, volunteer mothers, teachers, and school administrative staff report that they have greater time management skills as a result of participation in Lively Minds.

Overall, evidence collected thus far suggests that the play schemes have produced a number of positive outputs and that their quality has not diminished as a result of the ToT model.

FIGURE 4.5: IMPACT OF PLAY SCHEMES ON CHILDREN'S PERFORMANCE ON COGNITIVE ASSESSMENTS



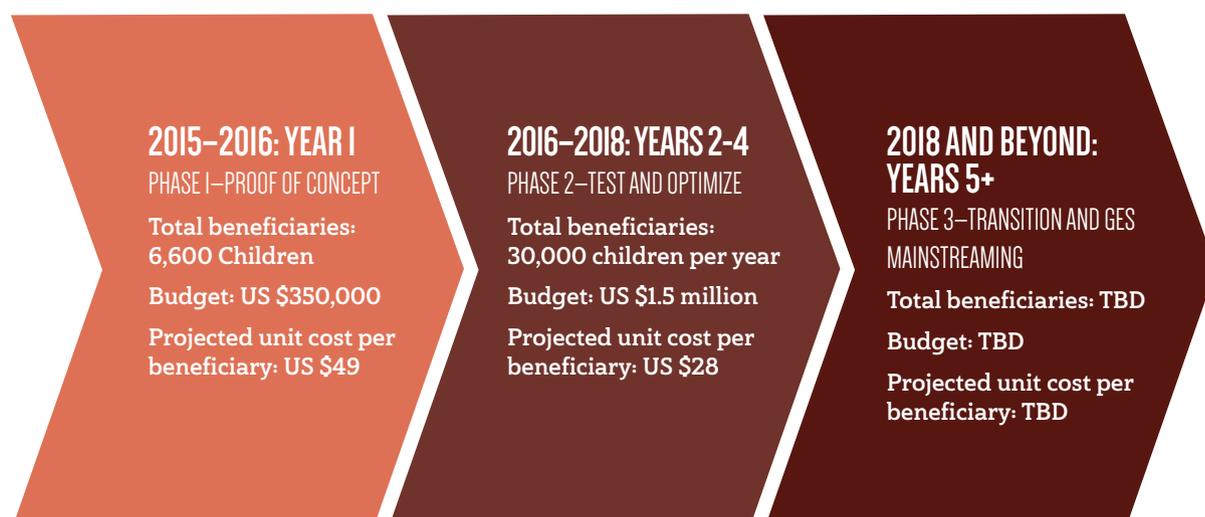


SUSTAINABILITY MECHANISMS, SCALING PLANS, AND CHALLENGES

SCALING PLAN: During its seven years of existence, Lively Minds has gradually increased the number of play schemes in operation.

In order to further the growth of these play schemes, Lively Minds has developed a scaling plan, which is organized into three phases beginning in 2015. It culminates in the hand-over of the program to GES by 2018 (see Figure 4.6).

FIGURE 4.6: LIVELY MINDS SCALING PLAN¹⁵⁹



159 Lively Minds (2015a).

Phase 1, or the Proof of Concept Phase, involved setting up 30 new play schemes using the training-of-trainers (ToT) approach from 2015-16 and refining an evaluation and scaling plan. This phase has been partially financed by UNICEF through the *Innovations in Education Initiative* grant. During this phase of scale-up, unit cost per beneficiary is estimated to be US\$49. In comparison, the unit cost per beneficiary for one year of public pre-primary education in Ghana, incorporating all costs of delivery, is US\$123.¹⁶⁰

LIVELY MINDS STAFF MEMBERS HAVE CONTINUALLY SOUGHT METHODS TO MAKE THEIR MODEL MORE SUSTAINABLE, IN PART BECAUSE OF THE REALITY OF LIMITED RESOURCES BUT ALSO BECAUSE OF THEIR BELIEFS ABOUT PROGRAMMATIC OWNERSHIP. THEY PERCEIVE THE CONCEPT OF SUSTAINABILITY AS ONE THAT IS INEXTRICABLY LINKED TO COMMUNITY OWNERSHIP AND ALIGNMENT WITH GOVERNMENT SYSTEMS AND POLICIES.

In Phase 2, Lively Minds plans to open 250 new play schemes in five districts where it already works, while testing and optimizing implementation strategies. During this phase, which is to end in 2018, the program intends to ramp up evaluation efforts. This will be done through the introduction of a randomized control trial, for which Lively Minds is exploring a partnership with researchers at the Institute for Fiscal Studies at University College London. This phase will also prioritize engagement

and succession planning with GES. During this phase of scale-up, unit cost per beneficiary is estimated to be US\$28.

Lively Minds aspires to transition program ownership to GES, with the hope that the government eventually fully finances project implementation. Ultimately, Lively Minds hopes to have what it calls an “optimized package” of activities, made efficient through the testing undergone during the first two phases and made more sustainable through a gradual hand-over to GES.

As GES mainstreams the activities, the role of Lively Minds will necessarily evolve. While its precise role is dependent on a number of factors, the foremost determinant will be the capacity of GES to implement the activities. Lively Minds recognizes that the transfer of responsibilities to the government is essential if it is to scale within the country. In the program’s most mature form, Lively Minds will likely play a technical assistance role, perhaps helping with training curricula—both for teachers and the top-up training—and in implementing an effective community engagement strategy. The optimal set of responsibilities for Lively Minds, versus those of GES, or potentially another organization such as UNICEF, will need to be determined through iterative trial and experimentation.

MECHANISMS FOR PROMOTING SUSTAINABILITY:

Lively Minds staff members have continually sought methods to make their model more sustainable, in part because of the reality of limited resources but also because of their beliefs about programmatic ownership. They perceive the concept of sustainability as one that is inextricably linked to community ownership and alignment with government systems and policies. As noted above, the program is carried out in existing kindergarten classes in government schools, community leaders and district education officials are engaged in the process of selecting schools for the programs, and community meetings are leveraged to recruit potential volunteer mothers and secure buy-in.

¹⁶⁰ UNICEF estimates based on UNESCO Institute for Statistics data (2016).

In order to maximize the program's reach in a cost-effective manner, Lively Minds transitioned to use of a ToT model. In addition, while Lively Minds provides the initial teaching and learning materials when play schemes are established, it encourages volunteer mothers to replace worn/missing pieces with inexpensive local materials. Similarly, the program relies on water and ash collected from the community and brought to schools for the "tippy-taps" that encourage handwashing.

Lastly, the recent integration of GES circuit supervisors into the monitoring of play schemes (with Lively Minds staff playing a reduced role) has important consequences for the sustainability of the model. The integration of GES circuit supervisors reflects the reality that, in an expanded program, Lively Minds staff cannot regularly visit all play schemes. Moreover, this development demonstrates the type of step needed to advance the move toward enhanced government ownership of the program.

CHALLENGES TO SCALING THE MODEL

Although Lively Minds has seemingly succeeded in generating impact in the areas where it is implemented and has laid the groundwork for scaling up, it faces the following challenges:

FINANCIAL: As noted earlier, Ghana's government has limited resources to devote to quality improvement initiatives. As the Lively Minds program is mainstreamed by the Ghana Education Service, questions remain about financing, such as how to pay for starter packs of learning materials and training. To date, the program has been relying on contributions from a small number of international organizations but is actively looking to diversify its funding base, and eventually build the program into the annual GES budget.

VOLUNTEER RECRUITMENT AND

RETENTION: While staff members hypothesize that the program could be applied successfully throughout Ghana, further contextualization will be needed. For example, in peri-urban areas, many families own small shops where mothers work, meaning that they may have less flexibility to leave during the day. This creates obstacles for the recruitment of dedicated volunteers. The challenge of retaining volunteers may also hamper efforts to scale the program. Volunteer mothers have noted difficulties in convincing other community and family members that the time they spend on the play schemes has value.

SUSTAINED INVOLVEMENT WITH GES:

Critically, Lively Minds must also continue to strengthen its engagement with GES in order to prepare for governmental mainstreaming of the program. Sustained involvement of GES is critical for the monitoring of play schemes. As Coburn notes, for reforms to be considered at "scale," ownership must shift so that reforms are no longer "external," but rather "internal." This implies that beyond buy-in from GES for play schemes, GES will need deep knowledge among its teachers and key leaders to sustain the innovation. There will need to be capacity within GES to transfer knowledge to future teachers and make key decisions related to the innovation's future.¹⁶¹

¹⁶¹ Coburn (2003).

The experience of other organizations attempting to transfer some responsibility to governmental actors may be instructive. A recent study of efforts to scale up a contract teacher program in Kenya found that the program had a positive effect on learning outcomes when implemented at small scale by an NGO, but had no effect when implemented at scale by the government. Further analysis identified limited monitoring and accountability and political backlash as factors contributing to the program's lack of success when implemented by the government. This experience suggests that replicating the positive impact of the program when GES is responsible will require consideration of the broader institutional context and program delivery chain, including the incentive structure for circuit supervisors and KG teachers.¹⁶²

BOX 4.3: POTENTIAL PARTNERSHIP WITH UNICEF GHANA

Natural synergies appear to exist between Lively Minds and UNICEF Ghana, which could be further explored in a partnership. A partnership between Lively Minds and UNICEF could benefit from UNICEF's technical expertise and relationship with GES and its accumulated experience working in other districts in the country. Lively Minds would bring a low-cost program that has been tested (albeit not at scale) in resource-deprived districts in the Northern and Upper East regions, along with deep experience in implementation, engagement with communities, and relationships with GES in certain districts.

Cognizant of this challenge, Lively Minds is exploring how to enhance engagement with circuit supervisors and has started providing regular capacity-building workshops for them, along with other district education officials. In addition, Lively Minds is considering assigning a member of its staff to district offices on a temporary basis to strengthen project and teacher management.¹⁶³ At the same time, Lively Minds has attempted to find multiple entry points for gaining buy-in from GES, which include for example, joint selection and joint monitoring of play schemes.

Though the potential challenges highlighted represent risks for scaling the model, Lively Minds has shown an ability to work in different contexts and make continuous program adjustments. This nimbleness and adaptability should aid efforts to grow the program.

¹⁶² Bold et al. (2013).

¹⁶³ Lively Minds (2015b).



LESSONS FOR OTHER INNOVATIONS

CONTINUAL TESTING AND EXPERIMENTATION CAN ENHANCE THE LIKELIHOOD THAT AN INNOVATION WILL EFFECTIVELY SCALE.

Lively Minds' commitment to data collection and learning is likely to serve the program well as it attempts to scale the model. The validity of this idea has been demonstrated repeatedly, across a diverse set of social innovations. As noted by Hartmann and Linn, monitoring and evaluation were important catalysts for the successful scaling up of Progresá and BRAC's operations in Bangladesh, as well as a number of other initiatives. In the case of BRAC, evidence collected from evaluations have played an "important role in convincing politicians to expand and maintain the program during successive electoral cycles."¹⁶⁴

For Lively Minds, monitoring and evaluation have produced the following benefits:

- ENHANCED BUY-IN FROM KEY PARTNERS:** By demonstrating the effectiveness of the program, Lively Minds has been successful in generating support from key partners. For example, GES officials commented on the program's role in reducing absenteeism, which is particularly notable given the pervasiveness of problems related to teacher accountability. Similarly, this data has been used to spark interest from donor organizations that want to give money to programs that have evidence of success.
- DESIGN ADJUSTMENT:** Community members have been engaged by Lively Minds staff in an authentic, open manner, primarily through focus groups. These focus groups, which include teachers and beneficiaries, have produced a rich set of qualitative data that have informed the design of the program. For example, topics for top-up training have been collected through discussions with trainers. The insight that the involvement of mothers was not valued by husbands was also garnered through a focus group; as a result, husbands were invited to participate in monthly activities to showcase the value of the program.
- IMPROVED EFFICIENCY:** Program staff and circuit supervisors recently created a data visualization dashboard that tracks the performance of program sites, including the presence of teachers. This data has been used to determine when additional supervisory visits are needed and where additional technical support should be provided.

In the future, strategies that not only evaluate impact but also continually test the implementation model will be particularly critical. Lively Minds has shown a desire to identify the most efficient model that still generates positive outcomes at scale. Staff members are keen

to understand the factors contributing to the program's success in order to identify which of its elements are worth scaling and whether enabling conditions for those elements are present elsewhere in the country. As noted by Boorstin, "Too often, something is missing between the pilot stage and the stage of widespread adoption. What's needed is a stage in which worthy programs are tested at scale."¹⁶⁵ Lively Minds has wisely built such "middle evaluation" into its plans.

BUY-IN CANNOT BE VIEWED AS A SINGLE ACTIVITY TO BE CARRIED OUT UPFRONT.

The Lively Minds experience has highlighted that buy-in must be continually reinforced, including through cooperative activities and transfer of knowledge and ownership. Securing and maintaining buy-in for the program has proven challenging, due to need for behavior change among staff at various levels of GES in order to support program implementation and the disruptive nature of promotions and placements of staff.

This challenge has been made easier in Kumbungu and Bongo Districts, where Lively Minds is achieving a level of saturation with the establishment of play schemes. Buy-in has been cultivated through a number of regular mechanisms, including joint selection of schools, joint monitoring activities, and sharing of results. Even symbolic gestures support buy-in: Teacher

certificates are signed by both Lively Minds and GES. Key to these activities is that they are not one-off, but rather ongoing.

A CULTURE IN WHICH KEY STAFF MEMBERS FEEL OWNERSHIP AND A SENSE OF EMPOWERMENT CAN IMPROVE RESULTS AND CREATE A MORE SUSTAINABLE MODEL.

Recent evaluation results have highlighted a reduction in teacher absenteeism with the introduction of the Lively Minds model. Further evaluation will better elucidate the mechanisms leading to this reduction, but anecdotal evidence—and that gathered by the internal midline assessment—suggests that the introduction of play schemes has empowered teachers by creating a leadership role for them in the classroom and by providing them with better resources. These resources include trainings and the assistance of mothers who volunteer in the program. The value of a supportive environment has been identified by Jeevan and Townsend, who note the importance of positive reinforcement in supporting teacher performance across a number of schools in India and Uganda.¹⁶⁷

In addition to engaging teachers as classroom leaders, Lively Minds has created incentives by allowing high-performing teachers to serve as training facilitators through the ToT model. Epstein and Yuthas note that "Centralized command is infeasible and can detract from genuine engagement and connection between frontline employees and the students, families, and community members they serve."¹⁶⁸ Aligned with the notion that centralized command is ineffective, Lively Minds believes that allowing these teachers to serve as facilitators will result in their feeling even more embedded in the program and more responsible for positive outcomes. This intentional development of an environment in which key implementers—in this case teachers—feel not only supported and empowered but also that the program is their own has been shown to be an important factor in the success of social innovations.

BOX 4.4: THE VALUE OF RECOGNITION

Jeevan and Townsend (2015) note, in reference to their work with teachers in India and Uganda, that "Government-run schools today tend to use blunt carrot and sticks—from biometric fingerprinting to performance-related pay—but our teachers tell us time and time again what they most crave is recognition from other teachers, parents, and local officials."¹⁶⁶

¹⁶⁵ Boorstin (2015), p. 2.

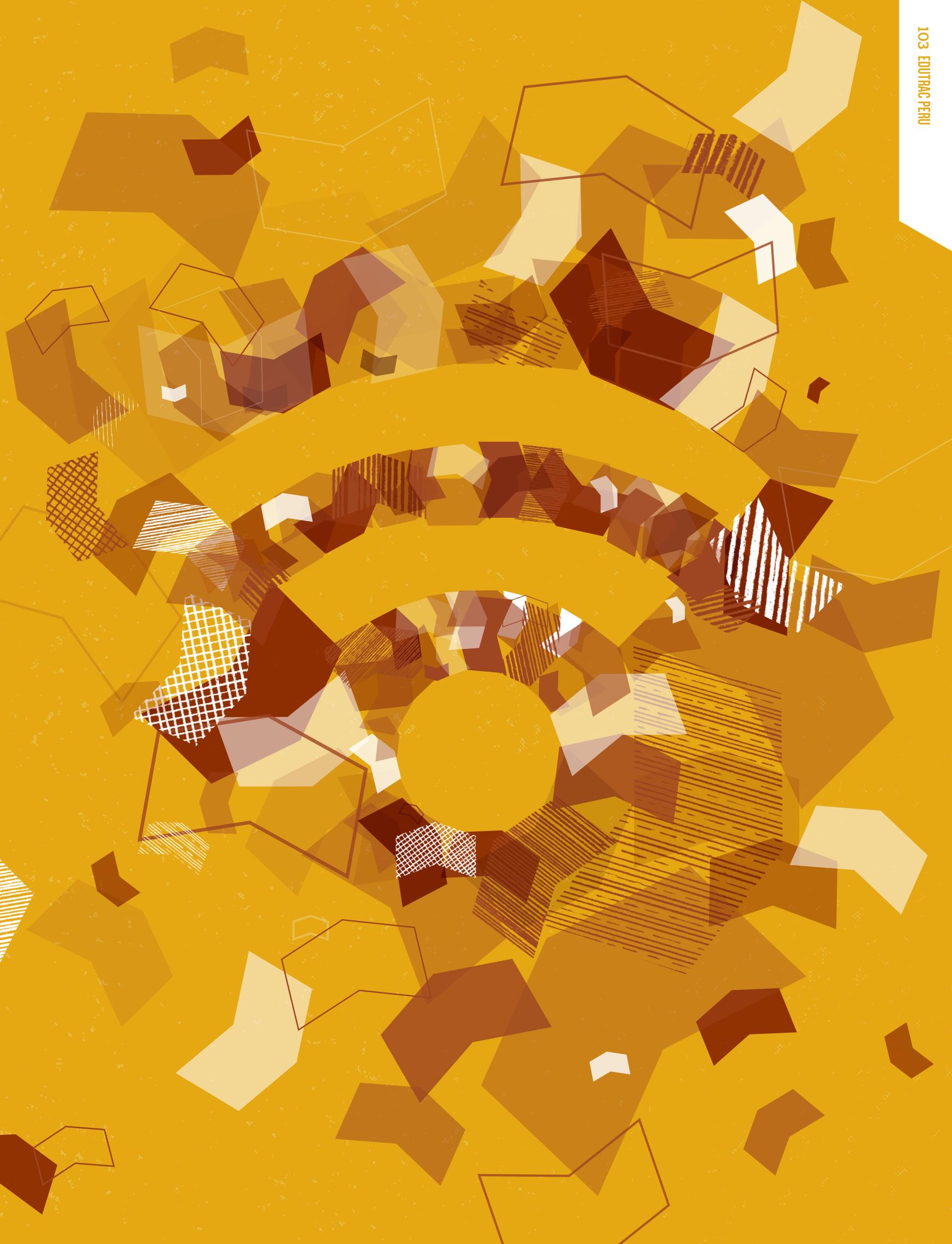
¹⁶⁶ Jeevan & Townsend (2015), p. 2.

¹⁶⁷ Jeevan & Townsend (2015).

¹⁶⁸ Epstein & Yuthas (2010), p. III.

Valuing the Voices of Communities

HOW EDUTRAC PERU FACILITATES LOCAL DECISION- MAKING





SUMMARY

Subpar education outcomes, exacerbated by poor teacher and student attendance, are prevalent in Peru, especially in remote communities. In order to respond to this challenge, UNICEF Peru introduced the EduTrac model, a SMS-based tool for improving data collection and monitoring of schools in hard-to-reach communities.

UNICEF Peru, in collaboration with the local nongovernmental organization Kunamia, adapted the EduTrac model from Uganda to mobilize communities to make evidence-based decisions for improving key learning outputs, namely, student and teacher attendance, school maintenance, and delivery of school materials. Within Peru's diverse geography and decentralized education system, EduTrac Peru holds the potential to generate timely performance information on hard-to-reach schools to improve decision-making and promote community engagement in education.

Though pilot implementation is still underway, both student and teacher attendance in EduTrac Peru schools showed steady improvement over the first few months of the intervention, increasing from 76 to 90 percent among teachers and from 73 to 84 percent among students. Preliminary findings also point to the innovation's potential to effect change among stakeholders across multiple levels. While EduTrac Peru is currently focused on completing its pilot phase and does not yet have a plan for scaling, UNICEF Peru and Kunamia ultimately aim to reach all schools located in the jungle of Peru and influence decision-making at multiple levels of the Peruvian education system.

WHY WAS IT SELECTED?

The EduTrac Peru proposal presented an opportunity to improve the effectiveness of some of the most remote schools in the mountainous and Amazonian regions of Peru by enabling more informed local decision-making and strengthened accountability. In order to achieve traction, communities engage in weekly data collection and monthly discussions based on performance on key indicators, such as student and teacher attendance. The team aspires to prove this concept in areas of the country with weak infrastructure and ultimately convince the national government to support a wider program of real-time monitoring of schools and evidence-based decision-making—therefore achieving scalability.

KEY TAKEAWAYS FROM THE EDUTRAC PERU EXPERIENCE:

1

CAREFUL CONSIDERATION FOR THE SURROUNDING CONTEXT IS NECESSARY FOR TECHNOLOGY-BASED INTERVENTIONS TO ACHIEVE THEIR INTENDED IMPACT.

By designing the model to reflect decentralized decision-making processes within the education system, EduTrac Peru is stimulating community participation and accountability in remote regions of the country.

2

TO ENSURE CONTINUED RELEVANCE OF AN INNOVATION, INTENSIVE LOCAL COLLABORATION IS VITAL.

EduTrac Peru recruited community members to serve as quality promoters; these actors have played an essential role in building strong relationships with local stakeholders and identifying areas for potential improvement.

3

ACTIVE COMMUNITY ENGAGEMENT MUST BE MATCHED BY STRONG INSTITUTIONAL COMMITMENT.

In order for EduTrac Peru to achieve its objectives and sustain community participation, government education officials must systematically incorporate EduTrac data into decision-making.



CONTEXT AND ORIGINS OF THE INNOVATION

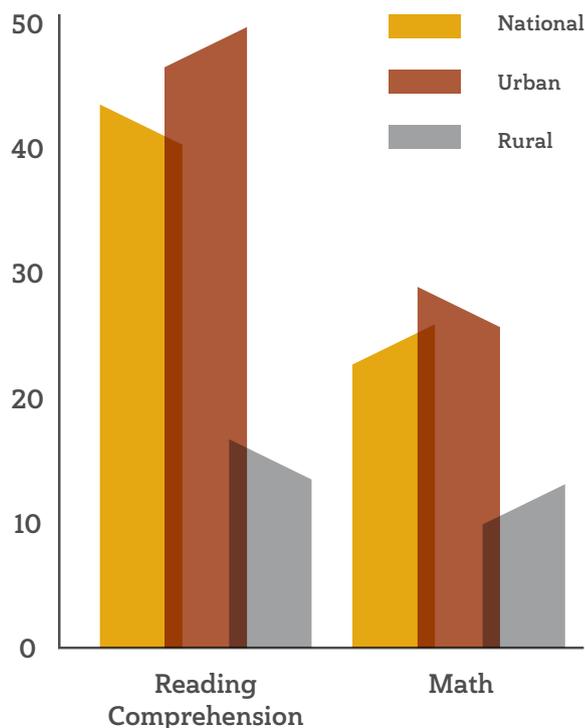
PERSISTENT INEQUITIES DESPITE EDUCATION GAINS

As of 2013, Peru had achieved near-universal primary school net enrollment (96 percent) and gender parity (1.0).¹⁶⁹ In the last decade, Peru has also seen large gains in net attendance rates for both pre-primary (from 59 percent in 2005 to 81 percent in 2014) and secondary education (from 72 percent to 83 percent).¹⁷⁰

However, data about national enrollment access mask persistent inequalities in access and student achievement in Peru, especially among marginalized communities in Amazonian and mountainous regions of the country. Poor, indigenous language speakers from rural or remote communities often underperform their wealthier, Spanish-speaking peers.¹⁷¹ For example, although levels of reading comprehension and mathematic achievement are low across second-graders, the disparity between urban and rural students is particularly striking (see Figure 5.1).¹⁷²

A number of challenges affect efforts to bolster access to education and the quality of learning in these regions. Interviewed policymakers and community members note that families and local officials do not always consider education a priority. Flooding in the jungle and landslides in the mountains present environmental barriers to schooling. The extra costs of education, such as transportation and uniforms, and the opportunity cost of lost earnings when a child attends school often result in children deserting school to work.¹⁷³

FIGURE 5.1: PROPORTION OF SECOND GRADERS PERFORMING AT A SATISFACTORY LEVEL IN READING COMPREHENSION AND MATH (2014)



¹⁶⁹ UNICEF (2014).

¹⁷⁰ ESCALE.

¹⁷¹ Reimers (2000); Holsinger (2005); Zhang (2006).

¹⁷² Student achievement on Peru's national assessment is reported as "satisfactory," "in progress," or "initial." Satisfactory performance indicates that a student has achieved expected learning objectives and is prepared to proceed to the next grade. A student who performs at the "in progress" level demonstrates a partial understanding of key concepts, while a student performing as "initial" cannot complete the requested tasks.

¹⁷³ Pal (2004).

In southern mountainous regions like Ayacucho, it is not uncommon for children to leave school for employment in the cocaine industry.¹⁷⁴

In addition to problems with student attendance, many schools in these communities face challenges with teacher attendance. It is often the case that teachers do not begin the school year on time or do not attend class regularly.

Lastly, the remoteness of these locations complicates delivery of resources, data collection, and other processes necessary to support schools and promote effective learning.¹⁷⁵

THE DECENTRALIZATION OF PERU'S EDUCATION SYSTEM AND REMAINING CHALLENGES

Peru began the process of decentralization in 2002 to “promote greater democratic participation by citizens, make the State more effective and transparent, and reduce social and economic inequalities between regions.”¹⁷⁶ Decentralization has largely shifted administrative responsibilities from the national level to regional and local government levels, with the latter comprised of provincial, district, and community bodies.

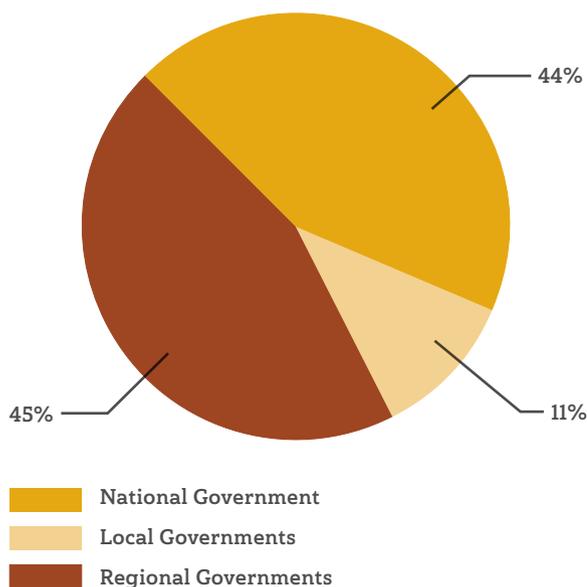
The country is now divided into 26 regions, where each has a Regional Education Office (Dirección Regional Educativa, or DRE). More than 200 Local Education Management Units (Unidad de Gestión Educativa Local, or UGEL) operate within regions at the provincial level. At the community level, schools operate with institutional and pedagogical autonomy.¹⁷⁷ In 2015, the national government and regional governments were each responsible for nearly half of all education spending, while local governments spent just 11 percent (see Figure 5.2). Teacher salaries are primarily paid by regional governments (transferred from the national education budget) and represent a significant portion of education budgets at the regional level (World Bank 2010).

Certain management responsibilities are shared across levels of government, including recruitment and training of teachers,

infrastructure maintenance, and financing. However, each level operates with a certain degree of autonomy (see Table 5.1).

Peru's General Education Act of 2003 calls for civil society and government to collaborate on strategies to improve regional and local education.¹⁷⁸ These participatory, civil society councils are known as COPARE (Consejo Participativo Regional) at the regional level and COPALE (Consejo Participativo Local) at the local level. The committees serve critical management functions at their respective levels, as they establish channels of communication between regional (or local) authorities and the public, propose and provide input on regional (or local) policies to achieve education equity and quality, and monitor education management to improve transparency and accountability.¹⁷⁹ A similar functioning body, the Institutional Education Council (Consejo Educativo Institucional, or CONEI), collaborates with individual school administrations. However, in designing EduTrac Peru, the UNICEF Peru team found that these councils were not always present in more remote communities.

FIGURE 5.2: DISTRIBUTION OF PUBLIC SPENDING ON EDUCATION (2015)



Source: Dirección General de Presupuesto Público

¹⁷⁴ This is according to interviews with the EduTrac Peru team in Ayacucho and local officials, as well as *The Associated Press* (2015) and *Pressly* (2015).

¹⁷⁵ Interviews and focus group discussions with UNICEF Peru and Kunamia teams, local and regional officials, and community members (November 2015).

¹⁷⁶ UNESCO (2005), p. 44.

¹⁷⁷ Laveriano (2010).

¹⁷⁸ De Gana Romero et al. (2014).

¹⁷⁹ Ministerio de Educación (2005).

TABLE 5.I: DIVISION OF EDUCATION RESPONSIBILITIES IN PERU

Source: Laveriano (2010), World Bank (2010)

LEVEL	EDUCATION AUTHORITY	SAMPLE EDUCATION RESPONSIBILITIES
National	Ministry of Education	<ul style="list-style-type: none"> · Design, oversee, and evaluate national policies. · Design basic curricula. · Strengthen operations of public, decentralized bodies. · Regulate the design, production, distribution, and use of education materials. · Consolidate the national education budget.
Regional	Regional Education Office (DRE)	<ul style="list-style-type: none"> · Design, carry out, and evaluate regional policies. · Advise and monitor UGELs. · Regulate education services at pre-primary, primary, secondary, and post-secondary (non-tertiary) levels. · Establish Regional Participatory Education Councils (COPARE) to promote civil society participation in decision-making. · Recruit and hire teachers and staff.
Provincial	Local Education Management Unit (UGEL)	<ul style="list-style-type: none"> · Design, carry out and evaluate local education policies. · Monitor and strengthen school administrative and pedagogical capacity. · Construct and maintain infrastructure. · Establish Local Participatory Education Councils (COPALE).
Community	School	<ul style="list-style-type: none"> · Design, carry out and evaluate school budget and spending. · Adapt basic national curricula to local context. · Grant certificates and diplomas. · Recruit and train teachers and staff.

After more than a decade of decentralization, challenges to effective implementation remain, particularly for more remote, marginalized communities. Between 2002 and 2010, improvements in educational outcomes in Peru stagnated, and there has been little reduction in the achievement gap between urban and rural populations, and for the poorest families.¹⁸⁰

BRINGING EDUTRAC TO PERU AND SECURING GOVERNMENT BUY-IN

In 2013, the Ministry of Education in Peru convened international partners working in the country to discuss a new agenda for the education sector. Conversation frequently turned to challenges in remote and rural communities, such as difficulties distributing materials and poor teacher attendance.

At that time, UNICEF Peru proposed piloting EduTrac, a SMS-based tool, to collect more timely and accurate data to address these challenges. This idea was championed by the then-UNICEF Peru deputy representative, who had previously served in Uganda, where she observed the use of mobile phones to monitor activities in the health sector as well as early testing of EduTrac. Given the model's potential to reach rural communities through technology and its alignment with national education priorities, the Ministry of Education showed interest in it, pending evidence of positive impact through an initial pilot. Early discussions with key stakeholders included the possibility of large-scale implementation. However, UNICEF Peru ultimately designed a pilot in a few priority communities to more easily identify challenges and factors for success before scaling the program.

UNICEF Peru partnered with local organization Kunamia to help carry out the implementation. Local teams based in the intervention regions of Ucayali and Ayacucho engaged with those who would be influential to the program's acceptance to earn their support. These collaborations involved not only orienting stakeholders to the purpose and objectives of EduTrac but also listening to concerns and suggestions from local counterparts to better contextualize the intervention for local needs.

At the regional and provincial levels, UNICEF Peru leveraged its strong relationship with officials in the target regions to generate early buy-in. This process, however, has been challenged by frequent turnover. For instance, UNICEF Peru and Kunamia engaged with three different directors of the same local education management unit within a year because of turnover in the position. While regional and provincial officials have expressed great interest in EduTrac, financial and political commitments have yet to materialize at the time of this case study.

UNICEF's *Innovations in Education Initiative* competition provided initial funding to support the pilot implementation. Additional support for an evaluation of EduTrac Peru was secured through the Global Partnership for Education (GPE).

BOX 5.1: GPE-FINANCED 'DATA MUST SPEAK'

The UNICEF-supported "Data Must Speak" project promotes the use of data to improve education equity and learning. Funded by GPE and the Hewlett Foundation and implemented in Madagascar, Nepal, the Philippines, Togo and Zambia, it supports the strengthening of education system management at all levels as well as community empowerment at the school level. This includes the development of user-friendly profile cards (similar to the EduTrac Peru user-friendly report—see Appendix 3) that contain comparative information on school/district resources, context, and performance. These profile cards and their indicators help governments to allocate resources in an equitable manner and support community participation in the preparation of school improvement plans with a focus on learning outcomes.

¹⁸⁰ World Bank (2010).



TEAM COMPOSITION, DESCRIPTION OF MODEL, AND EVOLUTION

THE MODEL: ADAPTING AND CONTEXTUALIZING EDUTRAC FOR PERU

EduTrac was first piloted in Uganda in 2011 as a “lightweight” system intended to complement annual education data collected by the Ministry of Education and Sports. The system collected data on a number of indicators, including student and teacher attendance, reports of child abuse, availability of soap at handwashing stations, student meals, and receipt of government grants.¹⁸¹

EduTrac Peru shares many features with the Uganda model. In both contexts, education data at the community level are collected using text messaging through mobile phones. Data are then housed in a central database and analyzed using an open source software system called RapidPro (see Box 5.2). Both EduTrac models also build on existing government initiatives: In Uganda, EduTrac collects frequent data that complement information collected annually by the Education Management Information System (EMIS); in Peru, data are collected along the four priority indicators based on a national government campaign called Buen Inicio del Año Escolar (A Good Start to the School Year) and best practices for school and classroom

management identified by the national government (Compromisos de Gestión Escolar, or School Management Commitments).¹⁸²

BOX 5.2: RAPIDPRO AND MOBILE PHONES

Launched in 2014 by UNICEF and Nyaruka, an engineering company based in Rwanda, RapidPro builds on open source, mobile data collection efforts since 2007. RapidPro is a highly adaptable, open source software system used in a variety of languages to reach users and collect data via short message service (SMS) and voice applications. To date, RapidPro has been used in more than a dozen countries and in the areas of education; water, sanitation and hygiene (WASH); nutrition; health; and youth engagement (RapidPro).

¹⁸¹ Kadama (2011a, 2011b).

¹⁸² The priority indicators are student attendance, teacher attendance, delivery of textbooks, and spending on school infrastructure and maintenance.

However, EduTrac Peru departs from the Uganda model in a number of ways. First, there is an emphasis on supporting remote communities in Peru, given the lack of reliable data among these settings. In addition, unlike in Uganda, the EduTrac Peru model places a strong emphasis on community participation in monitoring and decision-making.

TABLE 5.2: A COMPARISON OF EDUTRAC UGANDA AND EDUTRAC PERU

	EDUTRAC UGANDA	EDUTRAC PERU
INTERVENTION SCHOOLS	<ul style="list-style-type: none"> · Piloted in 229 primary schools in four districts of Uganda. 	<ul style="list-style-type: none"> · Piloted in 75 preschool, primary, and secondary schools in three districts (in two regions of Peru).
INDICATORS	<ul style="list-style-type: none"> · Pilot collected data on 18 indicators. 	<ul style="list-style-type: none"> · Pilot collects data on four indicators.
DATA REPORTERS	<ul style="list-style-type: none"> · Only those with a cellphone were selected to serve as a reporter. · Reporters included head teachers, school management committee members, Girls Education Movement (GEM) club members. · One reporter responded on each indicator. 	<ul style="list-style-type: none"> · Provides cellphones to reporters. · Reporters include teachers or school directors, representatives of parent associations (APAFA), and other delegates from the community. · Three reporters per school respond on all four indicators to validate data.
FREQUENCY OF DATA COLLECTION	<ul style="list-style-type: none"> · Data collected on a weekly, monthly, term, or annual basis (depending on the specific indicator). 	<ul style="list-style-type: none"> · Indicators collected on a weekly basis.
AVAILABILITY OF RESULTS	<ul style="list-style-type: none"> · Results are available only to those with an internet connection and who are registered users of the system. 	<ul style="list-style-type: none"> · In addition to online access, results are physically provided to communities as reports that depict data in colorful graphs and use symbols in addition to words.
POST-DATA COLLECTION	<ul style="list-style-type: none"> · Intervention stops at the point of data collection, and assumes education officials will then use results in decision-making. 	<ul style="list-style-type: none"> · Intervention also includes involvement of education officials and communities in the decision-making process.

While data in Uganda were made available to district education officials with access to a computer and the Internet, EduTrac had no mechanism for officials or communities to systematically review and incorporate the information into education decisions and policies. Critical to the design of EduTrac Peru are monthly community meetings, which are used to review information generated by RapidPro and to develop work plans for addressing specific education challenges. The model also calls for data utilization among local and regional education officials to make evidence-based management and resource allocation decisions.¹⁸³ See Table 5.2 for additional comparison between the two models.

IMPLEMENTING THE EDUTRAC PERU MODEL

SAMPLING: Through consultation with its regional offices, UNICEF Peru chose two priority regions for the pilot. Ucayali was selected to represent the Amazon area and Ayacucho was selected to represent the mountainous region of the Andes. Sites within these districts were selected using a criterion sampling approach. Given the emphasis on reaching marginalized communities, UNICEF Peru and Kunamia gave priority to schools located farthest from their UGEL, yet with sufficient cellular coverage to operate EduTrac.¹⁸⁴ The pilot sample consists of

FIGURE 5.3: EDUTRAC PERU COVERAGE



75 pre-primary, primary and secondary schools with 35 schools in Ayacucho and 40 in Ucayali. These schools serve more than 2,500 students and employ roughly 250 teachers.

DATA COLLECTION: Primary data are collected on a weekly basis and reported to EduTrac

BOX 5.3: SEMÁFORO ESCUELA AND MOBILE TECHNOLOGY

In 2015, the Peruvian Ministry of Education launched an initiative called Semáforo Escuela (School Traffic Light, or SE) that mirrors some aspects of EduTrac. Each month, SE deploys 300 monitors to public schools across the country to record teacher, director and student attendance via tablet devices. The Ministry of Education then publishes the data online, ranking the best—and worst—performing regions and provinces (Ministerio de Educación).

While EduTrac Peru similarly uses mobile technology to generate timely data collection, it differs from SE through its efforts to encourage communities to review data and make decisions relevant to their own contexts. As of December 2015, EduTrac Peru was participating in ongoing discussions with the Ministry of Education to explore synergies between the two initiatives.

¹⁸³ At the time of the site visit in 2015, these meetings had not yet taken place but were anticipated in early 2016.

¹⁸⁴ Other criteria included schools from pre-primary, primary, and secondary levels; schools operating within the Bilingual Intercultural Education (EIB) strategy; and management offices with Internet access.

FIGURE 5.4: FLOW OF SMS PROMPTS SENT TO REPORTERS ON A WEEKLY BASIS

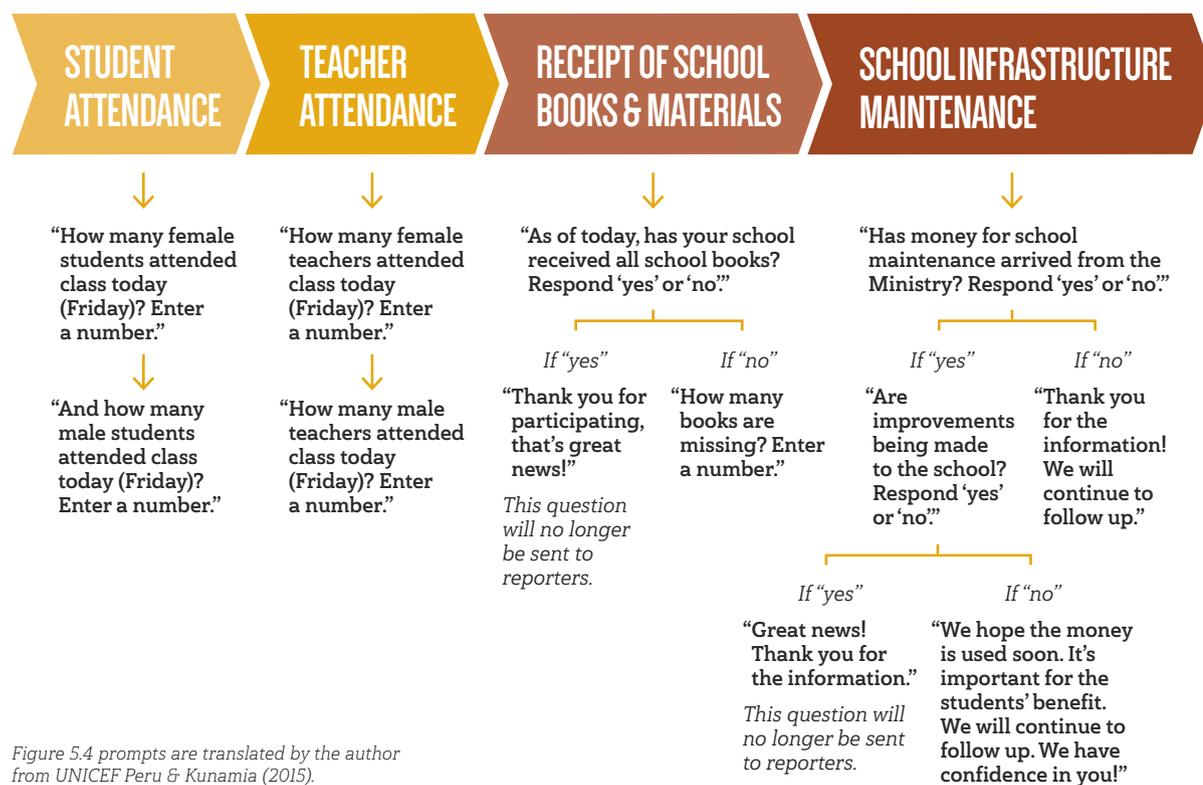


Figure 5.4 prompts are translated by the author from UNICEF Peru & Kunamia (2015).

via basic mobile phones and SMS messaging (four waves per month). Three local reporters per school are nominated by their community to serve in this role. Since many of the pilot communities in Peru do not have access to cellphones, EduTrac distributes the devices and trains reporters on how to use them. Replacing broken, stolen, or lost devices is a budgetary concern and may further complicate sustainability and scale-up of the intervention.

The reporting team for each school consists of the school director or head teacher, one representative of the parent association, and a delegate from the school's community.¹⁸⁵ At least two reporters must respond to the SMS indicator prompts within 24 hours for the data to be considered valid. See Figure 5.4 for a description of the prompts the reporters receive on a weekly basis.

Also built into the program design is an incentive system for encouraging high levels

of participation through individual and community recognition. For example, incentives recognize the schools with the highest level of reporting through a UNICEF-sponsored soccer competition. In another example, schools with the highest participation at the end of the year receive a training module on the use of play and physical education as an alternative tool for learning and life skills development. This latter example serves a dual objective—to recognize strong participation and to build capacity of participating communities.

INTERVENTION: EduTrac sends out SMS messages each Friday.¹⁸⁶ Responses are automatically uploaded to the RapidPro reporting system, where anyone registered and with Internet access can view the data. To address concerns of limited Internet access, local EduTrac teams print user-friendly reports each month to provide a visual summary of the data for each community. These reports, designed with input from the communities,

¹⁸⁵ Initially, teachers were not intended to be part of the reporting group to ensure unbiased reporting on indicators. However, in some smaller schools, the school manager also serves as a teacher.

¹⁸⁶ During the needs assessment, UNICEF Peru and Kunamia consulted with local communities to determine the best day to request reports. Community committees decided on Friday, as that is the day when student and teacher attendance in these areas is often lowest.

FIGURE 5.5: AN OVERVIEW OF EDUTRAC PERU'S LOGIC MODEL



Figure 5.5 is adapted and translated by the author from UNICEF Peru & Kunamia (2015).

contain limited text, colorful graphics, symbols and simple pictures to represent the data (see Appendix 3 for an example).

Each community then gathers once per month to review the data and make school-based management decisions for improving the priority indicators by the next meeting. At the beginning of the intervention, education committees in each community are trained in reporting and monitoring data effectively, conducting productive monthly meetings, and making evidence-based decisions that translate into action. The EduTrac Peru Logic Model (see Figure 5.5) assumes further review of the reports and decision-making processes among officials at higher levels of government administration.¹⁸⁷ By 2017, UNICEF Peru and Kunamia aim to transfer responsibility for implementation to the national government and focus on the provision of technical assistance.

EVALUATION: UNICEF Peru has commissioned an external evaluation of the pilot, using a repeated measure quasi-experimental design to determine the impact of EduTrac.¹⁸⁸

The evaluation will also produce case studies on eight intervention sites using data from interviews and focus group discussions with

a variety of stakeholders: teachers, school directors, community EduTrac reporters, local officials (from COPALE and UGEL), regional officials (from COPARE and DRE), the UNICEF Peru and Kunamia teams, and local EduTrac teams and promoters in Ucayali and Ayacucho. The case studies will detail experiences related to the capacity of EduTrac Peru stakeholders, expectations and risks for the project, enabling factors and challenges to implementation, components for sustainability and scalability, and lessons learned.¹⁸⁹

One limitation to note is the scope of impact that EduTrac Peru intends to have, and measure, on learning. As it is designed, data collection is limited to four priority output indicators. Without incorporating other data sources, such as achievement on annual assessments in reading comprehension and mathematics, EduTrac Peru will be unable to determine its contribution to learning outcomes. Furthermore, data utilization across regions and municipalities is not incorporated into the original evaluation design. If incorporated, this approach could prove useful in sustaining motivation within respective schools while contributing to a more effective design through formative evaluation.

¹⁸⁷ Figure 5.5 is adapted and translated by the author from UNICEF Peru & Kunamia (2015).

¹⁸⁸ EduTrac Peru was unable to conduct random assignment to intervention or control groups given the limited number of communities that fulfilled the inclusion criteria.

¹⁸⁹ *Incluir Sin Fronteras* (2015).

TABLE 5.3: ROLES OF KEY ACTORS IN EDUTRAC PERU

ACTOR	ROLE IN EDUTRAC PERU
UNICEF Peru	Brought the idea of adapting EduTrac to Peru to the Ministry of Education, and in partnership with Kunamia, designed the program model and now oversees the pilot process in Ayacucho and Ucayali.
Kunamia	In collaboration with UNICEF Peru, co-designed the program model and helps to oversee implementation of the pilot process.
Local EduTrac teams (coordinators and promoters)	Based in Ayacucho and Ucayali, responsible for training EduTrac data reporters; COPARE, COPALE, and local communities in how to review and use EduTrac data in decision-making processes; and Community Education Committees in how to monitor local decision-making processes. These local teams have also played a critical role in sensitizing communities to the purpose of EduTrac, collecting local feedback, and providing ongoing support in the data reporting and decision-making processes.
COPARE and COPALE	Civil society councils at the regional and provincial levels, respectively, tasked with reviewing and using EduTrac data to make evidence-based decisions to improve education.
Local communities	Responsible for reviewing and using EduTrac data to make evidence-based decisions to improve local education during monthly meetings.
Community Education Committees (CCE)	Monitor EduTrac data reporting, the review and discussion of EduTrac results during monthly community meetings, and decision-making by local communities.
UNICEF HQ	Provided one year of funding in 2015 to support the EduTrac Peru pilot.
GPE	GPE provided additional funding for the evaluation of EduTrac Peru. In return, UNICEF Peru and Kunamia committed to improving the project's user-friendly reports as part of the GPE-financed "Data Must Speak" initiative.



RESULTS TO DATE

EARLY WINS, WITH SOME LIMITATIONS

EduTrac Peru began data reporting in August 2015 and continued until the end of the school year in December 2015, in order to establish a baseline for the evaluation. During this time, response rates from community reporters increased from 36 to 79 percent, with fewer inconsistencies by reporters, primarily due to an improved familiarity with the mobile phones and the EduTrac reporting procedure. Early results indicate that both student and teacher attendance improved over the first three months of implementation (see Figure 5.6).

The innovation's intent to incentivize evidence-based decision-making was demonstrated in one instance when a community responded to low student attendance by cutting tall grass to reduce the fear of snakes on the walk to school. Elsewhere, stakeholders report having used EduTrac data for community outreach campaigns to explain the importance of student attendance.

THE INNOVATION'S INTENT TO INCENTIVIZE EVIDENCE-BASED DECISION-MAKING WAS DEMONSTRATED IN ONE INSTANCE WHEN A COMMUNITY RESPONDED TO LOW STUDENT ATTENDANCE BY CUTTING TALL GRASS TO REDUCE THE FEAR OF SNAKES ON THE WALK TO SCHOOL.

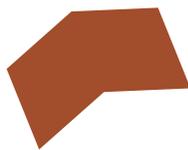
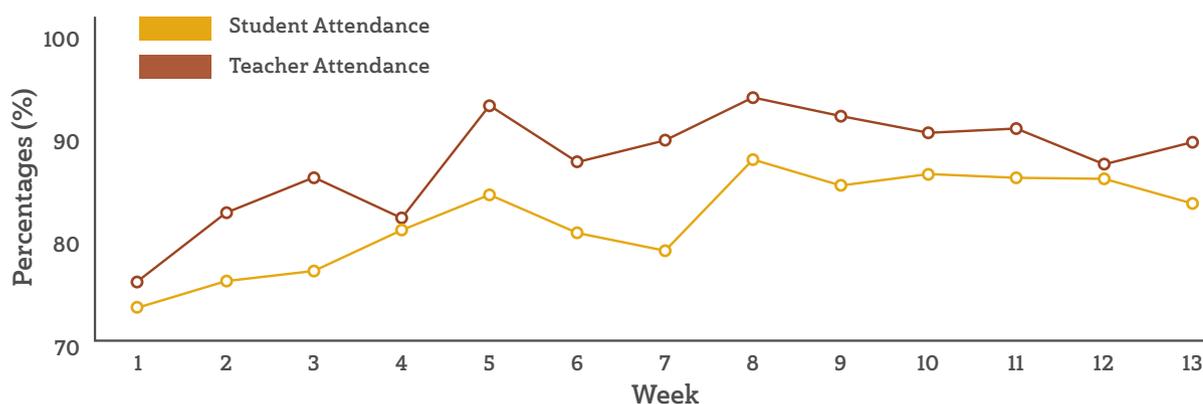


FIGURE 5.6: ATTENDANCE RATES IN EDUCRAC PERU SCHOOLS (SEPTEMBER–DECEMBER 2015)

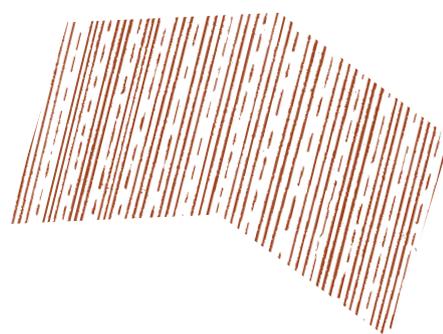


PERCEPTIONS OF “SUCCESS” VARY BY STAKEHOLDER GROUP

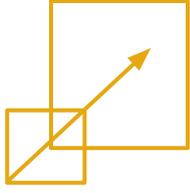
Counterparts in Ucayali and Ayacucho have expressed confidence in EduTrac Peru to produce significant improvements in education; however, when asked to describe success for the project, responses revealed a variety of expectations among and within stakeholder groups. While these diverse views demonstrate the innovation’s potential, EduTrac Peru will need to carefully navigate expectations to avoid losing buy-in and ensure sustainability.

These responses can be broadly defined along four themes (see more in Appendix 4):

- 1. ACCOUNTABILITY:** Improvement on the project’s four indicators (e.g., improved teacher attendance).
- 2. QUALITY:** Improvement of long-term education and economic outcomes (e.g., reduced disparities between urban and rural populations).
- 3. INVOLVEMENT:** Increased government and citizen participation.
- 4. INFLUENCE AND SCALE:** Expansion of the program or influencing existing policy (e.g., incorporating EduTrac into a national education policy, or using EduTrac as a cross-sector tool for monitoring health or agriculture).¹⁹⁰



¹⁹⁰ See Appendix 4 for a detailed description of responses by stakeholder group.



SUSTAINABILITY MECHANISMS, SCALING PLANS, AND CHALLENGES

While anecdotal evidence from EduTrac Peru's first year appears encouraging, present are serious threats to sustainability and, eventually, scale-up of the initiative. Implementation in 2015 revealed unreliable cellular coverage among selected pilot sites, thus presenting an ongoing logistical challenge to data reporting. UNICEF Peru teams have gathered context-specific information to develop solutions for the 2016 implementation, yet limited or nonexistent cellular coverage beyond these pilot sites presents a significant obstacle to scaling the program.

In addition to its hopes of eventually expanding its reach of schools, UNICEF Peru and Kunamia aim to scale EduTrac Peru vertically and have the program become a key decision-making tool at multiple levels of the country's education system. However, in many current pilot sites, data are not yet being utilized beyond the community level in provincial and regional decision-making.

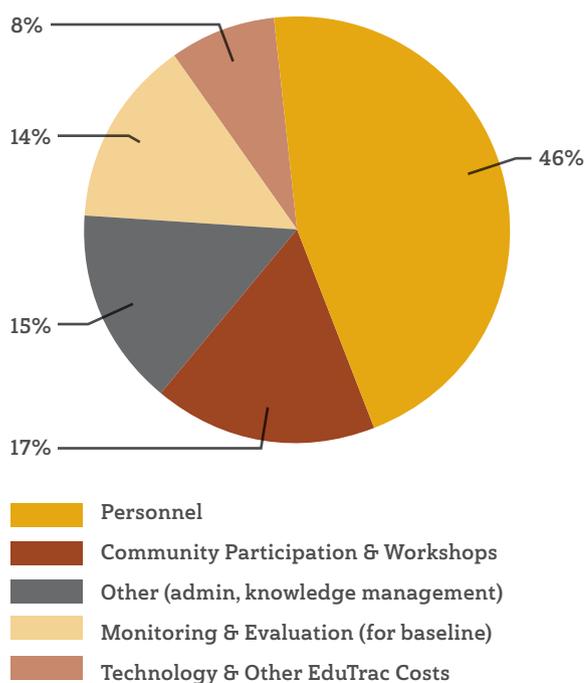
While EduTrac Peru does not have a formal scaling plan, it is currently focused on establishing proof of concept. By 2017, UNICEF Peru and Kunamia aim to transfer responsibility for the program to the national government while providing technical assistance. This transition depends, however, on a number of factors, such as the outcome of the 2016 presidential election and the new government's alignment with current education priorities and, perhaps most significantly, available financing.

Short-term funding from UNICEF and GPE (through the UNICEF-implemented Data Must Speak project) in 2015 provided a limited window of opportunity for UNICEF Peru and Kunamia to adapt, test, and demonstrate the effectiveness of the EduTrac model in two remote, diverse settings (the jungle of Ucayali and the mountains of Ayacucho). The protracted process of contextualizing the innovation and securing local buy-in, while key to generating local ownership over the program, proved both time- and resource-intensive and left EduTrac Peru with only a few months of funding to conduct the initial testing period. Beyond 2016, scaling the initiative to new schools might require a similarly intensive sensitization and adaptation process in collaboration with local communities and should be considered in future budgetary decisions. While positive ongoing conversations with regional governments and interest from international private actors show promise for

the continued implementation of EduTrac Peru, this experience presents a cautionary tale for those providing short-term funding to pilot innovations that need time to test and adapt their models, particularly in very diverse contexts.

In order to secure future funding and ensure sustainability, the cost-effectiveness of the intervention may need to be improved. Based on EduTrac Peru's budget for its first year of implementation, the per-student annual cost is US\$128, about 15 percent of the per-student cost for public education in Peru.¹⁹¹ The main driver of this cost is personnel, including the salaries and travel expenses of local and national coordinators of the initiative (see Figure 5.7). The remaining expenses are fairly evenly divided among the external evaluation, workshops and other activities to promote community participation, and administration and knowledge management. The cost of technology (for phones, text messaging, EduTrac software, and communications-related activities) represents a relatively minor share of the budget. UNICEF Peru and Kunamia are currently exploring strategies to reduce recurrent costs, especially those related to personnel, and the cost per child is expected to decrease as upfront costs diminish. Proving the cost-effectiveness of this intervention, particularly in comparison to the government-run Semáforo Escuela program, may be key to demonstrating EduTrac Peru's long-term utility.

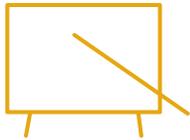
FIGURE 5.7: EDUTRAC PERU YEAR I COSTS



PROVING THE COST-EFFECTIVENESS OF THIS INTERVENTION, PARTICULARLY IN COMPARISON TO THE GOVERNMENT-RUN SEMÁFORO ESCUELA PROGRAM, MAY BE KEY TO DEMONSTRATING EDUTRAC PERU'S LONG-TERM UTILITY.



¹⁹¹ In 2014, government spending was US\$817 per primary student and US\$853 per secondary student. UNESCO Institute for Statistics (2016).



LESSONS FOR OTHER INNOVATIONS

CAREFUL CONSIDERATION FOR THE SURROUNDING CONTEXT IS NECESSARY FOR TECHNOLOGY-BASED INTERVENTIONS TO ACHIEVE THEIR INTENDED IMPACT.

The examples of many failed ICT interventions have shown that, in order for a technology to reach its intended aims, it must be designed for the context in which it is intended to operate. A carefully considered analysis of the extent to which an enabling environment exists, followed by actions to create such an environment, are critical steps for enhancing a technology intervention's traction, and ultimately its effectiveness. In Peru, this pre-implementation diagnosis revealed that structures were not always in place to monitor the quality and frequency of data reporting and ultimately the status of local decision-making. This assessment recognized that, in highly decentralized contexts, information must be disseminated among the intended targets of the policy reform to promote "a critical citizenry" and "effective participation by poor people and by a well-organized civil society."¹⁹² In short, it was determined that introducing technology absent community mobilization in Peru would almost certainly lead to data collection without genuine accountability. In order to foster such participation, UNICEF

Peru and Kunamia took two steps. First, recognizing that target communities often lacked Internet, they produced monthly paper reports that summarized collected data, which were then used to inform discussions held during local community meetings. Second, they helped form local Community Education Committees who, by monitoring data reporting and agreed-upon decisions, fill the perceived accountability gap and facilitate the successful use of the new technology.

THE EXAMPLES OF MANY FAILED ICT INTERVENTIONS HAVE SHOWN THAT, IN ORDER FOR A TECHNOLOGY TO REACH ITS INTENDED AIMS, IT MUST BE DESIGNED FOR THE CONTEXT IN WHICH IT IS INTENDED TO OPERATE.

¹⁹² UNDP in UNESCO (2005), p. 15.

TO ENSURE CONTINUED RELEVANCE OF AN INNOVATION, INTENSIVE LOCAL COLLABORATION IS VITAL.

In order for an innovation to continually remain relevant in the eyes of its beneficiaries, it needs to incorporate the voice of communities. Recognizing that adjustments to the EduTrac model would need to be made repeatedly throughout the pilot phase, UNICEF Peru recruited local community leaders to serve as “quality promoters.” Responsible for overseeing various sites within their region, the promoters have proven to be essential actors in building strong relationships with project stakeholders and identifying areas for potential improvement. By interacting directly with the communities in which they live, they have collected insights that would have otherwise not been communicated. For example, the EduTrac program was initially viewed as a mechanism for punitive action for poor teacher attendance. To combat this misperception and highlight the benefits of the intervention, the promoters developed workshops with local stakeholders to identify characteristics of an ideal school experience and determine how EduTrac can help schools advance toward such an experience. Community feedback collected by the promoters also led to a redesign of data reports to be more user-friendly (through the incorporation of simple, colorful graphics) and selection of the day in which reporting occurs (according to when attendance tends to be lowest). While resource-intensive, efforts to continually engage with community stakeholders have contributed to a model that is viewed as highly relevant to end users.

IN ORDER FOR AN INNOVATION TO CONTINUALLY REMAIN RELEVANT IN THE EYES OF ITS BENEFICIARIES, IT NEEDS TO INCORPORATE THE VOICE OF COMMUNITIES.

ACTIVE COMMUNITY ENGAGEMENT MUST BE MATCHED BY STRONG INSTITUTIONAL COMMITMENT.

Strong institutional commitment from education officials is needed to sustain innovations and validate local decision-making. This is particularly the case for bottom-up initiatives like EduTrac. Unfortunately, initial interest in the innovation from government officials has yet to be accompanied by utilization of EduTrac data in decision-making and resource allocation processes outside of local communities. As Fox notes, “Localized, information-led ‘demand-side’ interventions on their own are not enough to generate real change without institutional commitment.”¹⁹³ Such commitment at higher levels of the system would acknowledge the significance of the community-led efforts and reinforce local participation.

Strong institutional commitment and participation is explicit in the project model. However, as of early 2016, no process had been formalized or incentives developed for provincial (COPALE and UGEL) and regional (COPARE and DRE) officials to regularly review EduTrac data.

¹⁹³ Fox (2014), p. 19.

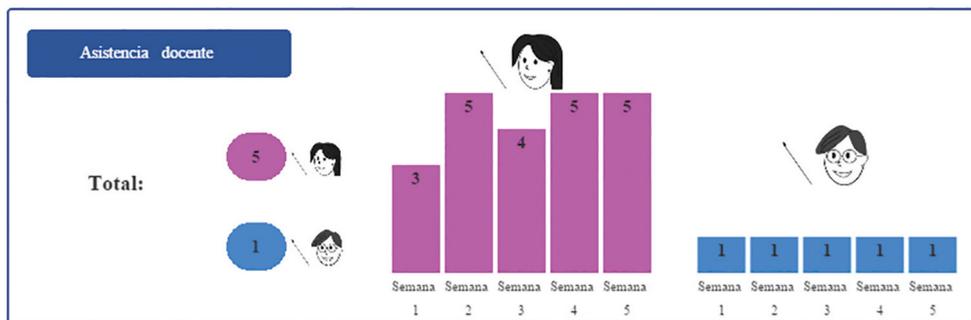
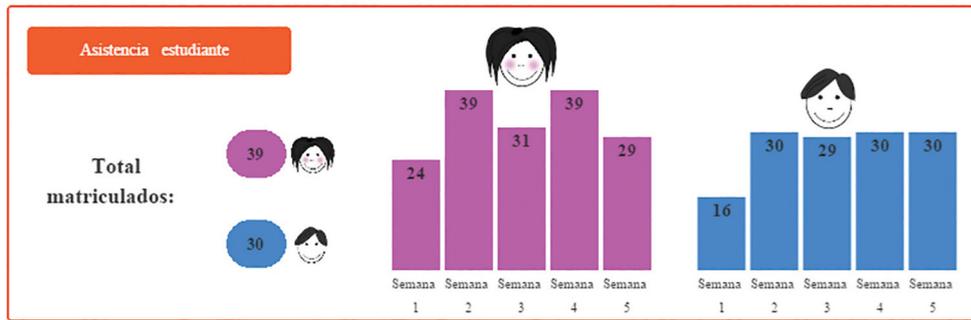
EDUTRAC PERU APPENDICES

APPENDIX 3: EXAMPLE OF USER-FRIENDLY REPORT



Reporte de indicadores - Proyecto EduTrac

Distrito: Santillana - Comunidad: Aranhuy - Nivel: Primaria



Llegada oportuna del material educativo

Han llegado 69 libros
ahora solo faltan 0

Mantenimiento de la Infraestructura escolar

Aún no usa el dinero

APPENDIX 4: STAKEHOLDERS' PERCEPTIONS OF "SUCCESS" FOR EDUTRAC PERU

GOVERNMENT OFFICIALS

- Improved teacher and student attendance
- Increased citizen participation
- EduTrac is sustained long-term

LOCAL EDUTRAC TEAMS

- National scale-up of EduTrac
- EduTrac adopted as national education policy
- Reduced inequity between urban and rural populations
- Increased community attention and participation in education
- Greater involvement of government officials in local education

COMMUNITY PARTICIPANTS

- Improved teacher and student attendance
- Children continue their education
- Greater information and accountability
- Improved gender equality

A Review of the Findings

**LOOKING BACK
AND LOOKING
AHEAD**

The five profiled innovations represent a range of education interventions, all with distinct partners and financing agents, and on differing points on the continuum of scaling (see page 126). Undergirding these differences are the varied contexts¹⁹⁴ of the innovations, each of which possesses a unique set of enabling factors. It is critical that this heterogeneity be considered when drawing lessons.

For example, the insights gleaned from the attempt of a literacy intervention to scale in Brazil may have limited relevance for an accelerated school readiness program attempting to do the same in Ethiopia. Indeed, lessons from a program's attempts to gain buy-in for a literacy intervention in one state in Brazil may have limited relevance for another literacy intervention doing likewise in another Brazilian state. The key question that we must ask should not be how do innovations scale, but rather whether *this* innovation should scale and, if so, how?

¹⁹⁴ By context, we mean demographic, environmental, economic, geographic, and political conditions.

A CLOSER LOOK AT THE EDUCATION INNOVATIONS

CAN'T WAIT TO LEARN

LOCATION: Sudan—Gedaref, White Nile, and Kordofan States

KEY PROGRAM COMPONENTS: Tablet-based numeracy program that leverages solar power and engages communities in learning.

STAGE OF SCALING PROCESS: Scaling within Sudan and to other countries

START DATE: 2011

TARGET BENEFICIARIES: Out-of-school children ages 7-9 years

BENEFICIARIES REACHED: 655 children

SCALE TARGET: 170,000 children across multiple countries by 2020

EVALUATION TYPE: Two quasi-experimental pilots;¹⁹⁵ psychosocial research

KEY ACHIEVEMENTS: PILOT I: Treatment group more than doubled math scores (18 to 38 points) over six weeks

Pilot II: 31-point gain in math scores from pre- to post-tests in treatment group. Psychosocial research indicated positive effects on self-esteem

ANNUAL UNIT COST PER CHILD REACHED (US\$): \$75¹⁹⁶

PALAVRA DE CRIANÇA

LOCATION: Brazil—Piauí and Amazonas States

KEY PROGRAM COMPONENTS: Literacy program that includes teacher training and parental engagement.

STAGE OF SCALING PROCESS: Scaling within Brazil

START DATE: Piauí (2008); Amazonas (2015)

TARGET BENEFICIARIES: Children enrolled in grades 1-3 (2008-2014)

As of 2015, also includes preschool children

BENEFICIARIES REACHED: PIAUÍ: In 2013, 26,381 children in 121 municipalities. In 2015, 9,673 children in 72 municipalities

Amazonas: In 2015, 2,289 children in 14 municipalities

SCALE TARGET: No explicit scale target

EVALUATION TYPE: Under development

KEY ACHIEVEMENTS: Children reaching the two highest levels of literacy ability at the end of grade two in Palavra de Criança-participating municipalities: 49% in 2011; 76% in 2013¹⁹⁷

ANNUAL UNIT COST PER CHILD REACHED (US\$): \$21.50 (PIAUÍ); \$39.31 (AMAZONAS)¹⁹⁸

¹⁹⁵ Pilot I included 66 children, while Pilot II included 589 children.

¹⁹⁶ Preliminary estimate for Sudan converted from Euros (€66); does not apply to other countries.

¹⁹⁷ Results from 2015 cycle not yet available.

¹⁹⁸ Authors' estimate based on program data for 2015 cycle.

ACCELERATED SCHOOL READINESS

LOCATION: Ethiopia—Benishangul-Gumuz Region

KEY PROGRAM COMPONENTS: 150-hour pre-literacy and numeracy program.

STAGE OF SCALING PROCESS: Pilot

START DATE: 2015

TARGET BENEFICIARIES: Children ages 6-7

BENEFICIARIES REACHED: 9,267 children (pilot)

SCALE TARGET: No ASR-specific scale target; contribute to national pre-primary target of 80% NER¹⁹⁹

EVALUATION TYPE: Randomized controlled trial (RCT)

KEY ACHIEVEMENTS: Exam passage rates for Summer ASR vs. O class students.²⁰⁰

MATH: 64% (ASR) vs. 54% (O Class)

LITERACY: 62% (ASR) vs. 51% (O Class)

ENVIRONMENTAL SCIENCE: 44% (ASR) vs. 40% (O Class)

ANNUAL UNIT COST PER CHILD REACHED (US\$): \$25

LIVELY MINDS

LOCATION: Ghana—Upper East and Northern Regions

KEY PROGRAM COMPONENTS: Mothers run play-based learning schemes as volunteers in KG classes; mothers also receive life skills training.

STAGE OF SCALING PROCESS: Scaling within Ghana

START DATE: 2008

TARGET BENEFICIARIES: Children ages 4-5 enrolled in KG classes

BENEFICIARIES REACHED: 9,600 children in 2015²⁰¹

SCALE TARGET: 30,000 children each year between 2016-18;

53,750 children overall between 2016 and 2018

EVALUATION TYPE: Quasi-experimental

KEY ACHIEVEMENTS: COGNITIVE ASSESSMENT: 31% improvement for children in play schemes vs. 13% for children not in play schemes

ANNUAL UNIT COST PER CHILD REACHED (US\$): \$49²⁰²

EDUTRAC PERU

LOCATION: Peru—Ucayali and Ayacucho Regions

KEY PROGRAM COMPONENTS: Text-message-based data collection on attendance, materials, etc., used for decision-making by communities.

STAGE OF SCALING PROCESS: Pilot

START DATE: 2015

TARGET BENEFICIARIES: Children from pre-primary to secondary (ages 3-16)

BENEFICIARIES REACHED: 2,500 children in 75 schools (pilot)

SCALE TARGET: No explicit scale target

EVALUATION TYPE: Qualitative and quasi-experimental

KEY ACHIEVEMENTS: STUDENT ATTENDANCE: Increase from 73.1% to 83.6%

TEACHER ATTENDANCE: Increase from 76.0% to 89.7%²⁰³

ANNUAL UNIT COST PER CHILD REACHED (US\$): \$128

¹⁹⁹ This target is meant to be achieved through expansion of KG, O Class, and ASR.

²⁰⁰ The same cohort will be assessed at the end of grade one and a larger cohort of students will be assessed in the 2016-17 academic year.

²⁰¹ These estimates are based on an average of 120 children enrolled in each play scheme.

²⁰² This is a projection based on full cost recovery apportioned per beneficiary.

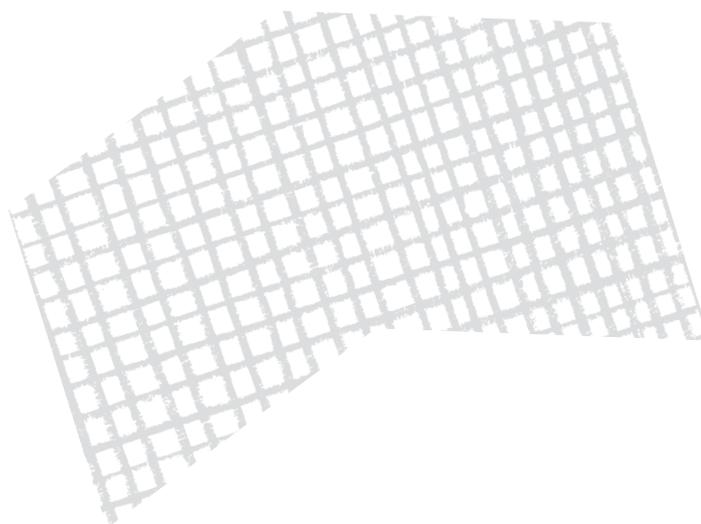
²⁰³ Baseline is September 1, 2015, with results reflecting rates as of December 15, 2015.

Despite the diversity of the five innovations and the need to develop innovation-specific scaling strategies, the case studies in this publication have revealed shared challenges and insights. These lessons serve as on-the-ground illustrations of what have, until now, largely been theoretical or conceptual arguments about designing, introducing, and scaling innovations. For instance, the conceptual argument about the advantage of building strong evaluation and learning practices has, in the example of Sudan's Can't Wait to Learn program, manifested itself in an optimized model. This in turn has attracted additional funding. Another such principle—that scaling must be considered early in an innovation's life cycle—has positioned Lively Minds to succeed in Ghana, Uganda, and potentially other contexts.

These insights may be useful for other early-stage programs, and we have categorized them into four themes:²⁰⁴

- **DEFINITION:** Have these programs confirmed or introduced new ideas about what constitutes an innovation or what it means to scale?
- **CONTEXT:** What are the enabling factors that can influence whether an innovation thrives? How have these programs handled the challenge of growth in contexts different from the ones in which they were incubated?
- **PARTNERSH D PEOPLE:** What roles have individuals played in the development and spread of these programs, and what role should institutional actors play?
- **STRATEGIC PLANNING:** What steps have program staff members taken to enhance the likelihood that an innovation will flourish?

Key findings from the case studies are summarized on page 129 and explored in more detail on page 130.



²⁰⁴ These categories provide a loose framework; some insights could fit into multiple categories.

KEY INSIGHTS FROM THE CASE STUDIES

DEFINITION

- Scaling is about more than simply increasing the numbers of beneficiaries.
- Innovation is about more than the intervention itself. It is about a broader and deeper spread of new norms and beliefs.

CONTEXT

- Careful consideration for the surrounding context is necessary for technology-based interventions to achieve their intended impact.
- Trade-offs must be made between customization and replicability of innovations which aspire to scale.
- There may be trade-offs between optimizing program design and “seizing the moment.”
- To ensure continued relevance of an innovation, intensive local collaboration is vital.
- The choice of a pilot site may have important implications for the success of a program.

PARTNERSHIPS AND PEOPLE

- The reputation of institutional partners can catalyze buy-in for an innovation.
- Human capacity at all levels matters.
- Active community engagement must be matched by strong institutional commitment.
- A culture in which key staff members feel ownership and a sense of empowerment can improve results and create a more sustainable model.
- Managing complex, multi-stakeholder partnerships requires sustained effort and differentiated approaches.

STRATEGIC PLANNING

- Continual testing and experimentation can enhance the likelihood that an innovation will effectively scale.
- Buy-in cannot be viewed as a single activity to be carried out upfront.
- Designing with scale in mind from day one may bolster the chances that an innovation meets its scaling target.

DEFINITIONAL INSIGHTS

To varying extents, each innovation is trying to gauge its effectiveness, whether through a program pilot, as with Ethiopia's Accelerated School Readiness initiative; or in a new geographical area, as with Brazil's Palavra de Criança; or through a modified version of a mature program, as with Ghana's Lively Minds. Despite being in different stages of measuring effectiveness, each program is explicitly aspiring to scale. And although the purpose of these case studies was not to arrive at a universally agreed-upon definition of scaling, they have highlighted the multi-dimensional nature of the concept. The example of Palavra de Criança reinforced the idea that *scaling is about more than simply increasing the number of beneficiaries*. While this literacy and learning program has increased the number of beneficiaries it reaches, it has also built relationships with governments (political scaling), incubated an NGO to provide technical support (organizational scaling), and expanded its mandate from literacy to learning (functional scaling).²⁰⁵ Palavra de Criança's 2015 trajectory highlights this point: The program added a pre-primary focus, meaning that it scaled functionally, despite operating in fewer municipalities than it had during the previous year. This insight has implications for how donor organizations choose to finance and evaluate innovations. A recognition of the various forms of scaling could imply that results frameworks reflect more nuanced indicators—ones that go beyond the number of beneficiaries reached and encourage other forms of organizational growth.

Similarly, the case studies have shed light on what constitutes a successful innovation. Collectively, they suggest that effective innovations require more than simply introducing a new technology or program. Instead, innovations that achieve permanence are often marked by what Coburn calls *a broader/deeper spread of new norms or beliefs*.²⁰⁶ For example, the principal aim of Ethiopia's ASR intervention is to improve children's readiness for school. Early data suggest that ASR's seemingly successful training practices

may have not only achieved this objective, but in the process invited a reconsideration of the way in which teacher training is conducted in the country.²⁰⁷ Stakeholders in Ethiopia spoke not just of introducing new classroom materials and practices but of a fundamental shift in mindset about the importance of early learning and pedagogical training for teachers. Similarly, Palavra de Criança has begun to inculcate a culture of classroom planning in the Brazilian communities where it operates, which may translate to a greater impact. UNICEF Peru has broadened the EduTrac model to include local decision-making in addition to data collection efforts; this practice is beginning to stimulate greater community agency and mobilization around education issues that have been lacking in very remote regions of the country.

A RECOGNITION OF THE VARIOUS FORMS OF SCALING COULD IMPLY THAT RESULTS FRAMEWORKS REFLECT MORE NUANCED INDICATORS—ONES THAT GO BEYOND THE NUMBER OF BENEFICIARIES REACHED AND ENCOURAGE OTHER FORMS OF ORGANIZATIONAL GROWTH.

²⁰⁵ Definitions from Hartmann & Linn (2008).

²⁰⁶ Coburn (2003).

²⁰⁷ The exam passage rates of the O class with ASR for Math (64 percent), Literacy (62 percent), and Environmental Science (44 percent) were higher than those for O class without ASR (54 percent, 51 percent and 40 percent).

CONTEXTUAL CONSIDERATIONS

With good reason, “context matters” has become a familiar refrain in discourse about the effectiveness of development interventions. Effective programs are not designed in isolation; instead, they need to be *developed with consideration given to the existing environment. This is especially the case for education technology programs*, many of which introduce digital devices without sufficient attention to existing structures and complementary supports necessary to make technology successful. In contrast, through a combination of solar power, tablet technology, and trained facilitators, Can’t Wait to Learn delivers a Ministry of Education-vetted math curriculum to children who are not already served by the education system. The CWtL game also extends beyond passive delivery of digital content to actively engage learners through motivational features, a characteristic critical to its success in improving learning outcomes. For EduTrac Peru, an SMS-based monitoring and accountability platform, a full consideration of the existing environment implies designing a program that responds to a decentralized education system, which requires an engaged citizenry to function. By facilitating the involvement of local communities in decision-making, EduTrac Peru enables this critical engagement.

The importance of context extends beyond technology-based innovations. In Ethiopia, recognition of the sometimes-ephemeral nature of government support provided the incentive for ASR implementers to accelerate planning for a pilot of the summer school readiness program. This fast-tracking capitalized on professed government interest, rather than risk that such interest would dissipate during a more protracted design process. The ASR example also highlights the trade-offs sometimes present between *innovation design and seizing the interest*

of government actors when developing an intervention. This finding does not easily lend itself to a universal policy prescription. Instead, it suggests the need to consider political economy factors and attendant trade-offs (e.g. more time refining a model before evaluating it) on a case-by-case basis.

IN SELECTING PILOT SITES, BOTH THE EDUTRAC PERU AND ASR ETHIOPIA TEAMS APPEAR TO HAVE IDENTIFIED THE SWEET SPOT WHERE NEED AND ENABLING FACTORS RESIDE ALONGSIDE EACH OTHER.

The case studies also suggest that contextual considerations extend to the choice of a program pilot site. Two of the innovations were squarely in the pilot phase during the review, and both chose their pilot sites in an intentional manner. The EduTrac tool was adapted and piloted in Peru to improve the monitoring of schools in mountainous and Amazonian communities—areas that are often the most difficult for government to reach. UNICEF Peru selected districts within the Ayacucho and Ucayali regions for initial implementation, based on strong relationships with local government. For the ASR program, Ethiopia’s Benishangul-Gumuz region was selected because of an acute need to improve school readiness there, but also because of factors that would enable success, namely a strong Regional Education Bureau and a history of partnering with UNICEF on similar interventions. This choice aligns with Trucano’s guidance that,

while an innovation pilot setting should allow the possibility of success, “there is abundant evidence that first starting where it is easiest doesn’t tend to offer models that scale much beyond certain types of privileged environments.”²⁰⁸ In selecting pilot sites, both the EduTrac Peru and ASR Ethiopia teams appear to have identified the sweet spot where *need and enabling factors reside alongside each other*.

For programs like these five, all of which have some aspirations of growing their models beyond the communities in which they are working, contextualization and adaptation of the models have been critical. For example, the Palavra de Criança training curriculum for Amazonas has a particular focus on instruction in multi-grade classrooms. These multi-grade classrooms are far more prevalent there than in the state of Piauí, where the program started. EduTrac Peru has also invested heavily in contextualization of its model, which was initially viewed negatively by some community members as a mechanism for punitive action for poor teacher attendance. To counter this notion, UNICEF Peru and Kunamia have recruited community leaders to jointly design and define their own experience through intensive, local collaboration. Workshops with community stakeholders to share ideas of an ideal school community, and how EduTrac can support efforts to build such a school, have helped support the

sense of program ownership and offset negative notions about the intentions of the project.

At the same time, such adaptations have limits because customization comes at a cost, not only financially but in terms of fidelity to a proven model. This underscores *the need to balance the benefits of customization, including enhanced traction with users, with its costs*. This is something the Can’t Wait to Learn team is grappling with as it contemplates expanding the Sudan e-Learning game to new geographies with vastly different populations (including areas with refugees and internally displaced persons) and adding a literacy component. The project has built modules for general math principles, such as counting, that can be applied in different contexts, but it has also developed a “meta-game”²⁰⁹ that reflects the specific reality of Sudanese children. With rapid expansion possible, other adaptations, including the development of new partnerships and further tailoring of the model, may be necessary, which suggests a need for more resources. This also implies that program administrators need to pay close attention to outcomes to determine whether adaptations compromise what has so far made the program effective.

PARTNERSHIPS AND PEOPLE

Much has been written about pathways and conditions that lead to scaling. Yet, perhaps the most critical determinant of whether an innovation will scale is the caliber of the people associated with the intervention. Put more simply, an innovation will almost certainly fail without strong personnel—personnel who are motivated, properly incentivized, and adequately trained.

Each of the five innovations possesses a champion (or multiple champions) who has

been able to communicate in a clear and compelling manner the *raison d’être* for the intervention, so as to garner the support of various partners. For Palavra de Criança, one of several champions is the UNICEF Fortaleza Office Coordinator, who is as adept at discussing pedagogical approaches with teachers as he is at making the case for financing from state governors. His singular focus on raising learning for all children in Piauí state has facilitated the growth of the program. In Ghana, Lively Minds’

²⁰⁸ Trucano (2013).

²⁰⁹ The Can’t Wait to Learn “meta-game” refers to the virtual game world that children initially enter as they use the game. In contrast to the mini-games, which give children opportunities to practice mathematical concepts through autonomous learning, the meta-game is visually similar to children’s daily realities (with huts, a small shop, etc.).

chief champion is former lawyer Alison Naftalin, who perceived a need for early stimulation for children and began consulting with national partners on how to fill this void. She deftly built relationships with community organizations and district education officials to ensure that the program is sustainable over the medium and long term.

Of course, the need for strong personnel extends beyond champions. Equally important are strong, committed implementers, technically sound advisers, and supportive government partners. Indeed, the case studies have reinforced the idea that *successful innovations have strong human capacity at all levels* of the innovation's ecosystem. In the example of Palavra de Criança, those involved in the program have made concerted efforts to build capacity where it was lacking. Recognizing that teacher training needed to be bolstered, UNICEF helped in establishing a new NGO, ProBem, to perform this function. Staffed by a committed set of technical experts, ProBem has been a catalyst in the program's success.

In addition to having the requisite skills, it is critical that staff feel connected to the innovation's mission and believe they contribute to the achievement of its ultimate outcomes. The *importance of staff empowerment* is seen in Lively Minds' use of teachers—instead of program staff—as trainers. Program teachers note that being asked to perform this function has increased their investment in the program, both because they are rewarded for good performance and because they are partly responsible for the performance of a new cadre of teachers. This new model has also coincided with improvements in key performance outcomes.

For some innovations, especially those that attempt to drive community empowerment, *strong institutional commitment from education officials has proved to be particularly critical*. For EduTrac Peru, which relies on community members to collect data for decision-making, the commitment of education officials imbues community-led data collection

efforts with significance and reinforces local participation, i.e., community members know that the fruits of their efforts will be put to good use. In “bottom up” innovations such as these, successful community engagement relies on the knowledge that the results of such efforts will be valued and utilized by institutional actors.

IN “BOTTOM UP” INNOVATIONS SUCH AS THESE, SUCCESSFUL COMMUNITY ENGAGEMENT RELIES ON THE KNOWLEDGE THAT THE RESULTS OF SUCH EFFORTS WILL BE VALUED AND UTILIZED BY INSTITUTIONAL ACTORS.

Moreover, the five innovations reveal that the *choice of partners is also paramount, especially as it affects the cultivation of buy-in from others*. This principle is evident through an examination of the role of UNICEF, both the headquarters and country offices, in supporting the innovations. In the four innovation countries in which it is an implementing agent, UNICEF was reported to have brought a degree of credibility and technical rigor that would not have otherwise been present. Government officials frequently noted that UNICEF's strong global reputation played a role in their decisions to support these innovations. In the case of Can't Wait to Learn, UNICEF used its global reach to play an important role in raising the visibility of the program, including brokering invitations to present the program at donor-attended international forums. In Brazil, municipal mayors noted that their support for Palavra de Criança was largely a byproduct of UNICEF's “brand”: because UNICEF was involved, they wanted their municipality to participate.²¹⁰

²¹⁰ One stakeholder in Brazil noted that the UNICEF brand, while strong, may falsely present the impression of a fully funded intervention.

Of course, cultivating and maintaining partnerships comes at a cost. In Can't Wait to Learn, the organization managing the program, War Child Holland, forged partnerships with myriad organizations: software developers, UNICEF (both country and global offices), UNESCO, the Ministry of Education, universities, and local curriculum experts. These dynamic partnerships have led to the creation of an effective innovation, in which the comparative advantage of each partner is leveraged. But the Can't Wait to Learn experience highlights that *managing multi-stakeholder partnerships requires differentiated approaches and sustained effort*. War Child Holland has been able to cultivate and nurture a fruitful partnership by taking pains to ensure that partner contributions are valued (whether through bilateral dialogue, co-branding, etc.) and that there is alignment between partner priorities and the overall aims of the innovation. However, this has required unique strategies for distinct partners, e.g., knowing which donors are interested in hard data and which are keen to see the program in action, with commensurate action taken for each.

STRATEGIC PLANNING

Given the above, what do the five innovations tell us about how innovations generate desired outcomes? What can be done to increase the likelihood that they “beat the odds” by creating sustainable impact? The short answer is, “It depends,” as noted in the section on contextual factors. However, the experiences of these five innovations suggest that there are a few actions that may be applicable across multiple contexts.

AS ONE MEMBER OF THE CAN'T WAIT TO LEARN TEAM NOTED, “WE FELT WE COULDN'T INVEST IN A GAME THAT WOULDN'T BE SCALED.”

As has been noted by Cooley and Linn²¹¹ and McClure and Gray²¹², and reinforced in the case studies, *those innovations that may scale need to plan for it from day one*. This implies a series of actions, including finding long-term sources of financing and strong personnel, understanding which elements of the innovation may be scalable and identifying other contexts

in which there is demand and an enabling environment. As one member of the Can't Wait to Learn team noted, “We felt we couldn't invest in a game that wouldn't be scaled.” This meant, as part of the initial planning phase, that those involved identify a simple delivery mechanism with few required conditions for the program to function and that they create a research plan that would allow the team to test solutions for a number of potential scaling problems.

Further, the case studies lend credence to the idea that, in planning for scale, *evaluation practices should be built in prior to wide-scale implementation*. When there is uncertainty about the optimal set of program modalities, early testing can offer insight on design choices and help make the decision whether to implement the program, and in what form. In the case of the Ethiopia ASR program, a planned evaluation will help UNICEF and government representatives to decide whether to support a summer instruction model, grade one model, or some combination of the two before going to scale. Early, formative evaluations, especially those with quick feedback loops, can facilitate adaptive learning. In the process, they can provide an enormous return on investment.

²¹¹ Cooley & Linn (2014).

²¹² McClure & Gray (2015).

Of course, evaluations should not be a one-off exercise completed early in the life cycle of a project. Instead, as has been evidenced in the case of Lively Minds, **a culture of experimentation and learning can facilitate constant improvement**. Lively Minds, in concert with the Ghana Education Service, has enacted regular monitoring of its play schemes. Monitoring data are regularly revisited, and schools with challenges are given additional visits and support. This monitoring has been complemented by internal and independent evaluations, with further plans to test a gradual hand-over of responsibilities to the government. This commitment to collecting data and making empirically-based decisions is meant to help Lively Minds scale in an intelligent, informed manner.

When fed back to key stakeholders, the evidence generated from regular evaluations can have the effect of reinforcing buy-in. Stakeholders interviewed across the five case studies exerted considerable effort and resources to maintain the support of key participants. By performing monitoring in concert with the Ghana Education Service staff, engaging in regular dialogue about monitoring results, and even ensuring that training participant certificates are signed by both Lively Minds and government officials, the Lively Minds team has enhanced the buy-in of government officials, who have indicated that they feel a part of the program. Indeed, the efforts of the Lively Minds team have highlighted that **buy-in is not simply something to be obtained upfront** but instead requires regular reinforcement.

WHAT'S NEXT?

PRIORITY ACTIONS FOR DONORS, PRACTITIONERS, RESEARCHERS, AND POLICYMAKERS

The finalists in the *Innovations in Education Initiative* hold promise for tackling some of the education sector's greatest challenges, from increasing access to learning opportunities for out-of-school children, to improving early learning quality, to enhancing accountability of school officials. Positive results have been observed, ranging from anecdotal to statistically significant, across the innovations. Yet, the truth is that it is unclear whether any of the programs will achieve their ultimate aims over the long term. As noted above, this can be attributed partly to the number of individuals, organizations, and agencies involved in the innovation ecosystem who need to work in concert to achieve the intended aims.

In that vein, and based on the insights from the case studies, priority actions that four such sets of actors—donors, practitioners, researchers, and policymakers—can take to maximize the impact of education innovations follow.

DONORS

Provide flexible, multiyear funding

As evidenced in the five case studies, the path to scale is far from linear. Incremental progress is often accompanied by setbacks. In Brazil, after Palavra de Criança's most successful year, one in which it was implemented in 224 municipalities, a lack of financing forced the program to take a one-year hiatus in training activities.

Because innovations, by definition, are new—either in idea or in a particular context—such setbacks are inevitable and, consequently, adaptations are necessary. Needs evolve, often suddenly. In fact, successful innovations do not necessarily adhere to a predefined path, but instead adapt in response to conditions. For EduTrac Peru, this meant shifting more resources toward community sensitization, in response to perceptions that its SMS-monitoring program was intended to be punitive rather than corrective.

To respond to such realities, donors may, within limits, consider increasing the proportion of funding that is fungible, rather than earmarked for very specific means. For Can't Wait to Learn, flexible funding from the Dutch Ministry of Foreign Affairs was key to enabling CWtL managers to take a stage-gated approach to research and an incremental approach to implementation. The provision of flexible funding by donors both reflects the realism of early stage innovations and serves to incentivize experimentation, which may in turn catalyze further improvement. In addition, doing so provides a degree of autonomy for on-the-ground innovators, who are generally best placed to make resource allocation decisions.

Support peer learning

As noted above, despite working in vastly different contexts and on distinct innovations, program stakeholders identified a number of similar challenges in their journeys to scaling. One such shared challenge was around family engagement. In northern Ghana, Lively Minds' volunteer mothers noted that their husbands often questioned why they chose to volunteer rather than attend to competing home demands. In Benishangul-Gumuz, Ethiopia, Accelerated

School Readiness teachers confronted the added burden of supervising the younger siblings of program participants. Many stakeholders in Peru cited limited parental involvement in their children's education as a key challenge, due to a poor understanding of the importance of attending school, or economic factors that lead parents, and even children, to prioritize work over education.

The challenge of family engagement is one that has been contemplated by the Palavra de Criança team, who, in response to parental feedback, developed a robust strategy of engaging families in the learning process through regular communication and the introduction of at-home activities to reinforce children's learning. Thus far, the strategies appear to have gained traction, with families reporting that they feel closer to their children's learning and better equipped to support them on their academic journeys. As a result of their success to date, Palavra de Criança team members may thus be positioned to share their experience with peer organizations confronting this challenge.

More broadly, there may be value in donor partners supporting joint learning among organizations committed to overcoming roadblocks while scaling education programs. Facilitating learning among peers can serve as a powerful means of technical assistance—it extracts tacit knowledge from experienced practitioners, which can help others to improve day-to-day operations and overcome common challenges. Other sectors, most prominently health, have successfully leveraged peer learning exchanges to improve program quality, which suggests that this area may be ripe for further investment in the education sector.

THE PROVISION OF FLEXIBLE FUNDING BY DONORS BOTH REFLECTS THE REALISM OF EARLY STAGE INNOVATIONS AND SERVES TO INCENTIVIZE EXPERIMENTATION, WHICH MAY IN TURN CATALYZE FURTHER IMPROVEMENT.

Discuss non-financial contributions with project teams during early planning stages

The case studies reveal that donor partners hold the potential to play a powerful support role beyond simply providing financing. In each of the five countries, the common donor, UNICEF, has helped raise the visibility of the innovation, whether through brokering invitations to conferences, or by stimulating relationships with key domestic and international actors. UNICEF has also provided critical technical support to governmental and non-governmental actors (e.g. Ahfad University for Can't Wait to Learn and Kunamia for EduTrac) in several of the innovations.

or enabling conditions that programs must create in order to scale. These include fiscal/financial space, natural resources/environmental space, policy space, institutional/organizational space, political space, cultural space, and partnerships space. In addition to providing additional fiscal space through the *Innovations in Education Initiative*, UNICEF has helped cultivate institutional capacity (by creating a new NGO to implement Palavra de Criança), created additional partnerships (by connecting eLearning thought leader Dr. Badri with War Child Holland in Sudan) and, through participation in the education sector development plan process in Ethiopia, helped cultivate an enabling policy space.

THE CASE STUDIES REVEAL THAT DONOR PARTNERS HOLD THE POTENTIAL TO PLAY A POWERFUL SUPPORT ROLE BEYOND SIMPLY PROVIDING FINANCING.

In their report *Taking Innovations to Scale*,²¹³ Linn and Cooley note a number of “spaces”

In most instances, these pivotal contributions have happened organically. However, it may be advisable for donors and program teams to explicitly discuss and agree upon anticipated non-financial contributions of donor partners early, ideally as part of the strategic planning process. As noted above, maintenance of multi-stakeholder partnerships can incur high costs, and an upfront recognition of the role that donors may plan within such a partnership—and the role that they may or may not have in forging additional partnerships or relationships—can reduce these relationship maintenance costs while freeing up resources for program teams and leveraging donors’ diverse assets.

PRACTITIONERS

Use monitoring data to inform learning, especially during the design phase

Increasingly, donors are making the funding of a new innovation contingent upon the creation of robust monitoring and evaluation plans, across all sectors. Funders, as well as project teams, are interested in collecting data to identify “what works.” However, M&E is not generally built into the early stages of a program life cycle (e.g. before the program is fully rolled out) and when it is present, it is often used for the purpose of satisfying donor requirements rather than to stimulate internal learning. And while traditional M&E approaches may provide valuable information on whether or not a program worked, the timelines for

seeing results can be very long. In response, small-scale experimentation can be leveraged in an innovation’s early stages, when there is uncertainty about the specific intervention modalities to follow or outcomes they may yield. Such experiments have a focus on learning and improving, rather than on accountability.

Such an approach is being used by the ASR program team in Ethiopia, who, when confronted with the choice of whether to roll out a summer or grade one version of their program, designed a small pilot in a single state to help make this choice.²¹⁴ If leveraged appropriately, data from

²¹³ Cooley & Linn (2014).

²¹⁴ The pilot reached 9,267 children.

the pilot can be used to inform whether to roll out one or both of these modalities, and which adjustments should be made to maximize uptake and effectiveness. Similarly, in Sudan, the Can't Wait to Learn team ran a number of small pilots to test solutions to the biggest threats to scale before moving to full-fledged implementation.

Of course, monitoring data can serve as a mechanism for continuous learning beyond the pilot phase. Palavra de Criança's model supports the idea of collecting data for real time feedback into program implementation. Assessment in classrooms provides data to teachers to develop tailored lesson plans and student-specific improvement strategies and to municipal governments to develop literacy strategies by shifting resources toward high-need schools and providing additional training for teachers. Similarly, Lively Minds utilizes monitoring data to identify communities that need additional visits and capacity-building efforts and teachers who can serve as facilitators of the program.

Other innovators may similarly profit from building low-cost learning opportunities into the pre-implementation or implementation phases, as a means of making evidence-based design choices and course corrections.

Be conscientious about involving the voices of users, especially marginalized groups

The first of UNICEF's nine principles for innovation and development is to Design with the User. This principle requires that solutions be informed by user needs and that they be useful for marginalized populations. All of the five innovations strive not only to reach the poor and marginalized, but to integrate their feedback into program improvements.

However, translating this aspiration into practice can be challenging; stylized theories of change may be easier to design in an office than through close contact with potential beneficiaries, which is essential for developing robust, meaningful theories of change. This is particularly true when innovations are adapted from resource-rich environments. As Polk and Knox note, "... Historical biases driven by Western perspectives of what constitutes worthwhile knowledge and

best practices...have proven difficult to break."²¹⁵ Authentic co-creation requires considerable intentionality and a willingness to adapt based on end-user feedback.

Despite these challenges, including the voice of beneficiaries is essential if perceived benefits of an innovation are to equate with actual benefits that are valued by users. Innovators across the five awardees have been dogged in their pursuit of inclusivity, whether through regular focus groups with volunteer mothers in Lively Minds or through pre-implementation discussions with EduTrac beneficiary communities in Peru. In addition to the moral value inherent in including the voices of the marginalized, the feedback from these constituencies is critical for making sound program adjustments.

INCLUDING THE VOICE OF BENEFICIARIES IS ESSENTIAL IF PERCEIVED BENEFITS OF AN INNOVATION ARE TO EQUATE WITH ACTUAL BENEFITS THAT ARE VALUED BY USERS.



²¹⁵ Polk & Knox (2015), p. 11-12.

Don't overlook the value of small, symbolic actions in maintaining buy-in

Visits to the five innovations revealed that the programs achieved buy-in from local stakeholders through a variety of strategies. In many instances, the opportunity to contribute to improvements in learning outcomes was the key driver of buy-in from donors and government officials. For other stakeholders, it was the programs' focus on improving equity in access to learning that catalyzed support. As noted above, UNICEF's brand name also played a key role in facilitating interest.

VISITS TO THE FIVE INNOVATIONS REVEALED THAT THE PROGRAMS ACHIEVED BUY-IN FROM LOCAL STAKEHOLDERS THROUGH A VARIETY OF STRATEGIES.

However, the site visits also highlighted the potential value of low-intensity, symbolic actions in cultivating, and especially maintaining, buy-in. In Brazil, municipality mayors view their participation in the Palavra de Criança program as contributing to the likelihood that they will receive the UNICEF "Seal of Approval," a certification process that stimulates positive competition among municipalities in supporting child-focused policies. In Ghana, Lively Minds circuit supervisors noted that "their professional profile has been boosted by the certificates of participation given after trainings."²¹⁶

As such, while cultivating and achieving buy-in and support requires sustained efforts and requires that a program produce its intended outcomes, the case studies suggest that program teams should also seek out opportunities to engage supporters through small, potentially high-uptake activities or actions.

RESEARCHERS

Ensure that research on scaling can be accessed by innovators

There is a growing body of literature around scaling innovation in education, including *Millions Learning: Scaling up quality education in developing countries*, a Brookings Institution report that identifies factors which hinder and enable such scaling and examples of programs which have successfully scaled.²¹⁷ Global innovation summits hosted by WISE and UNICEF have also drawn attention to this topic and, through the Center for Education Innovations (CEI), there is a growing database of promising education innovations from which other innovators can learn. The conversation around scaling innovations is as loud as ever and, as a result, there is now a rich set of resources upon which innovators may draw insight about why innovations have or have not reached scale. In availing themselves of such resources, programs can avoid needlessly "reinventing the wheel."

Innovators and implementers across the five case studies consistently expressed a desire to harness existing knowledge to improve their programs, yet in many instances were unaware of existing best practices or lessons. This suggests a need to bridge the gap between production of global public goods, in the form of research on scaling, and practitioners' use of such public goods. More research on ways to reach those who might profit from analytical products and how to present evidence in a way that promotes uptake of such ideas (e.g. through experiential learning activities) may be warranted.

Review the use of tools for assessing scalability and readiness to scale

The above-mentioned uptick in research around innovation and scaling has been accompanied by the development of tools to assess scalability, most notably the Management Systems International (MSI) Scalability Assessment Tool.²¹⁸ These provide potentially valuable inputs to guide program teams in how to determine whether scaling may be realistic, and what gaps might need to be addressed before moving to

²¹⁶ Dogbe & Marshall (2016), p. 24.

²¹⁷ Perlman, Robinson, & Winthrop (2016).

²¹⁸ The criteria for the MSI tool are as follows: 1) Is the model credible? 2) How observable are the model's results?

3) How relevant is the model? 4) Does the model have a relevant advantage over existing practices? 5) How testable is the model? and 6) Is there a sustainable source of funding?, from Cooley and Linn (2014).

scale. They also provide donor organizations with a framework for thinking about which innovations to support and how to finance programs for which achieving impact at scale may be more likely. Indeed, a variant of the MSI Scalability Assessment Tool was employed to select the five finalists of the Innovations in Education competition.

The promise of these tools is great. As a next step, there may be scope to assess how and in what contexts they have been employed, their predictive power (i.e., whether they have been used to identify programs that have scaled successfully) and what improvements may be made to ensure that they are being leveraged to their full potential.

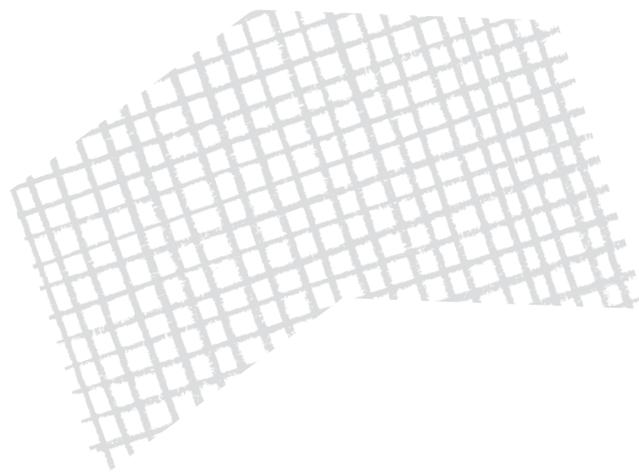
POLICYMAKERS

Establish clear policy targets to galvanize good practice

A critical enabling factor for the development of the Accelerated School Readiness program was the establishment of a pre-primary enrollment target in the national Education Sector Plan. This target, which was the product of intensive negotiation, stimulated discussion about how an 80 percent net enrollment rate could be attained, and ultimately resulted in the development of the ASR program (among other measures). This policy goal has continued to serve as a scale target, providing a critical incentive to maintain and grow the program.

The ASR experience speaks to the catalytic value that policy targets—especially those born of consensus-building activities—can have. They hold the potential to serve not simply as a statistic buried in a policy document, but as a rallying cry, which can mobilize widespread support for a program and thus provide an enabling environment for the incubation of new innovations.

THE ASR EXPERIENCE SPEAKS TO THE CATALYTIC VALUE THAT POLICY TARGETS—ESPECIALLY THOSE BORN OF CONSENSUS-BUILDING ACTIVITIES—CAN HAVE.



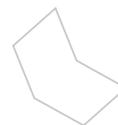
Invest in rigorous fiscal space analyses before adopting or scaling an innovation

For obvious reasons, the effectiveness of an innovation, as backed up by rigorous evaluation, should be a central element in government's decision to adopt or scale a program. Policymakers want to scale programs that work.

However, costs also need to be taken into account when making decisions about how to spend scarce resources. Referring to the role of affordability in making resource allocation decisions, Cooley and Linn note "This criterion refers to the extent to which the model is more cost-effective than existing and competing models. It also includes the extent to which the total cost at scale fits realistically within the resources or financial envelope of possible adopters and funders. This is especially important when considering the scaling of a program that has been largely donor-funded."

The precision of costing data across the five innovations was mixed. While two innovations had performed a careful accounting of upfront and recurrent costs, credible costing data was lacking for the others. When equipped with data about costs (including how unit costs are expected to change over time), projected effectiveness, and available sources of financing, policymakers are better able to choose among competing priorities within an education budget. In doing so, they may forestall investment in effective but financially unsustainable programs.

WHEN EQUIPPED WITH DATA ABOUT COSTS (INCLUDING HOW UNIT COSTS ARE EXPECTED TO CHANGE OVER TIME), PROJECTED EFFECTIVENESS, AND AVAILABLE SOURCES OF FINANCING, POLICYMAKERS ARE BETTER ABLE TO CHOOSE AMONG COMPETING PRIORITIES WITHIN AN EDUCATION BUDGET. IN DOING SO, THEY MAY FORESTALL INVESTMENT IN EFFECTIVE BUT FINANCIALLY UNSUSTAINABLE PROGRAMS.



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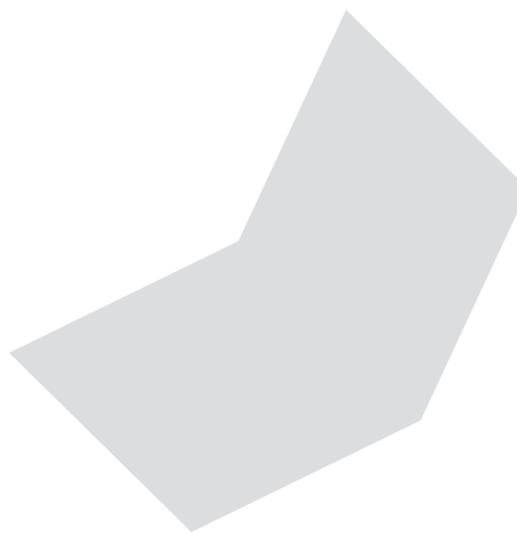
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ANNEXES

UNICEF PRINCIPLES FOR INNOVATION AND TECHNOLOGY IN DEVELOPMENT

UNICEF has adopted nine principles for innovation and technology in development, which serve as best-practice guidelines for informing the design of innovative development programs. Below we cite examples of how the five profiled innovations embody each of UNICEF's principles.

UNICEF INNOVATION PRINCIPLE	UNICEF DESCRIPTION	CASE STUDY EXAMPLES
1 DESIGN WITH THE USER	<ul style="list-style-type: none"> • Develop context-appropriate solutions informed by user needs. Include all user groups in planning, development, implementation, and assessment. • Develop projects in an incremental and iterative manner. • Design solutions that learn from and enhance existing workflows, and plan for organizational adaptation. • Ensure solutions are sensitive to, and useful for, the most marginalized populations: women, children, those with disabilities, and those affected by conflict and disaster. 	<p>In developing EDUTRAC PERU, UNICEF Peru participated in discussions with the Ministry of Education and other development partners to understand local education needs before suggesting a pilot. The pilot intervention builds on the Uganda model but newly incorporates community engagement and decision-making components to reflect the needs of remote and historically marginalized communities in Peru. PALAVRA DE CRIANÇA'S model, which was designed with the specific goal of supplementing government provision of literacy education, was developed in partnership with municipal and state government officials. Similarly, the design of the ACCELERATED SCHOOL READINESS program in Ethiopia incorporated contributions from national government, regional government, UNICEF, academic institutions and parental groups.</p>
2 UNDERSTAND THE ECOSYSTEM	<ul style="list-style-type: none"> • Participate in networks and communities of like-minded practitioners. • Align to existing technological, legal, and regulatory policies. 	<p>Through conversations with municipal officials and teachers, PALAVRA DE CRIANÇA'S program architects developed a detailed understanding of the challenges municipalities face in implementing basic education, including the political, financial, and social barriers to quality literacy teaching. Informed by this broader awareness of their ecosystem, the program has been designed to complement existing government initiatives and policies. In Peru, EDUTRAC PERU project teams and communities engaged in discussions (“building the school that we want”) to contextualize the initiative to their particular context and education goals. This led to the design of user-friendly reports, in collaboration with communities, which make results easily accessible and understandable.</p>

UNICEF INNOVATION PRINCIPLE	UNICEF DESCRIPTION	CASE STUDY EXAMPLES
<p>3</p> <p>DESIGN FOR SCALE</p>	<ul style="list-style-type: none"> • Design for scale from the start, and assess and mitigate dependencies that might limit ability to scale. • Employ a “systems” approach to design, considering implications of design beyond an immediate project. • Be replicable and customizable in other countries and contexts. • Demonstrate impact before scaling a solution. • Analyze all technology choices through the lens of national and regional scale. • Factor in partnerships from the beginning, and start early negotiations. 	<p>The CAN’T WAIT TO LEARN program team considered scale from the start, creating a program with the potential to reach out-of-school children across the world by minimizing infrastructure requirements. The team also designed their program to integrate seamlessly with Sudan’s formal education system, so as to create pathways that serve children’s long-term education needs. In its design, Can’t Wait to Learn balances trade-offs between customization, with a user interface specific to Sudan, and adaptability, with generic mini-games that can be used for children across the world. In Brazil, PALAVRA DE CRIANÇA’S creators designed a model that leverages a training-of-trainers approach, which allows the program to reach many teachers with modest resources.</p>
<p>4</p> <p>BUILD FOR SUSTAINABILITY</p>	<ul style="list-style-type: none"> • Plan for sustainability from the start, including planning for long-term financial health, e.g. assessing total cost of ownership. • Utilize and invest in local communities and developers by default, and help catalyze their growth. • Engage with local governments to ensure integration into national strategy, and identify high-level government advocates. 	<p>With sustainability in mind, LIVELY MINDS minimized costs from the beginning by using local materials for toys for play schemes, recruiting volunteers, and refraining from providing costly incentives to volunteers. In addition, the program invests in local partners, including teachers, mothers who volunteer their time, and circuit supervisors, through capacity building and training. The program also works closely with the Ghana Education Service, particularly in monitoring play schemes, in order to support integration efforts. In Ethiopia, the ACCELERATED SCHOOL READINESS program facilitates sustainability by utilizing existing classrooms rather than requiring new infrastructure. The program also works closely with local and federal ministries of education to ensure alignment and integration into existing policy.</p>
<p>5</p> <p>BE DATA DRIVEN</p>	<ul style="list-style-type: none"> • Design projects so that impact can be measured at discrete milestones with a focus on outcomes rather than outputs. • Evaluate innovative solutions and areas where there are gaps in data and evidence. • Use real-time information to monitor and inform management decisions at all levels. • When possible, leverage data as a byproduct of user actions and transactions for assessments. 	<p>LIVELY MINDS is implementing a pilot project in conjunction with a quasi-experimental evaluation incorporating a number of measures, including child cognitive development and health at baseline, midline, and end line. This evaluation is comparing three different implementation approaches to determine their effectiveness. In addition to carrying out this evaluation to inform its work, Lively Minds uses data from monitoring visits to identify sites needing additional support. EDUTRAC PERU fills a data gap for remote communities by providing weekly data to monitor four education indicators, which are used in community decision-making meetings each month. Data are available in an online platform to inform regional and local decision-making. Lastly, a core component of PALAVRA DE CRIANÇA is the use of assessment data to inform classroom instruction. By analyzing and presenting learning outcome data in a way that is practical and useful to municipal education officials, pedagogical coordinators, and teachers, Palavra de Criança turns data into a blueprint for action.</p>

UNICEF INNOVATION PRINCIPLE	UNICEF DESCRIPTION	CASE STUDY EXAMPLES
<p>6</p> <p>USE OPEN DATA, OPEN STANDARDS, OPEN SOURCE, OPEN INNOVATION</p>	<ul style="list-style-type: none"> • Adopt and expand existing open standards. • Open data and functionalities, and expose them in documented APIs (Application Programming Interfaces) where use by a larger community is possible. • Invest in software as a public good. • Develop software to be open source by default with the code made available in public repositories and supported through developer communities. 	<p>CAN'T WAIT TO LEARN uses open-source software so that its code is freely available to others looking to reuse it or adapt the software program for other contexts. Similarly, EDUTRAC PERU uses RapidPro, an adaptable, open-source software platform. In doing so, both models ensure that their technology can be leveraged for the public good and adapted to fit others' needs.</p>
<p>7</p> <p>REUSE AND IMPROVE</p>	<ul style="list-style-type: none"> • Use, modify, and extend existing tools, platforms, and frameworks when possible. • Develop in modular ways favoring approaches that are interoperable over those that are monolithic by design. 	<p>PALAVRA DE CRIANÇA leverages existing tools and resources as much as possible in implementing its program. This includes using and adapting an existing national learning assessment (Provinha Brasil) to assess the literacy level of children before and after program implementation. Similarly, LIVELY MINDS modifies existing assessment tools for monitoring and evaluation, and repurposes existing materials for use in play schemes, e.g., bottle caps for counting.</p>
<p>8</p> <p>ADDRESS PRIVACY AND SECURITY</p>	<ul style="list-style-type: none"> • Assess and mitigate risks to the security of users and their data. • Consider the context and needs for privacy of personally identifiable information when designing solutions and mitigate accordingly. • Ensure equity and fairness in co-creation, and protect the best interests of the end-users. 	<p>As a part of its development and implementation, EDUTRAC PERU has taken steps to ensure user privacy and security of community data reporters. It does not publicly share the names or details of data reporters.</p>
<p>9</p> <p>BE COLLABORATIVE</p>	<ul style="list-style-type: none"> • Engage diverse expertise across disciplines and industries at all stages. • Work across sector silos to create coordinated and more holistic approaches. • Document work, results, processes, and best practices, and share them widely. • Publish materials under a Creative Commons license by default, with strong rationale if another licensing approach is taken. 	<p>EDUTRAC PERU has engaged communities and district, provincial, regional, and national officials throughout the pilot process. EduTrac Peru benefits from the diverse skill sets and connections shared by UNICEF Peru, Kunamia, and local EduTrac teams and promoters. Additionally, UNICEF Peru has commissioned a consultant to accompany the piloting process and produce a report synthesizing experiences and lessons learned. PALAVRA DE CRIANÇA also relies heavily on a diverse set of partnerships, including with local implementing organizations, municipal and state governments, teachers, and community members, who jointly contribute to the design and implementation of program activities.</p>

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