BRIDGE INTERNATIONAL ACADEMIES

DELIVERING QUALITY EDUCATION AT A LOW COST IN KENYA, NIGERIA, AND UGANDA

Christina Kwauk and Jenny Perlman Robinson

B | Center for Universal Education at BROOKINGS

Sincere gratitude and appreciation to Priyanka Varma, research assistant, who has been instrumental in the production of the Bridge International Academies case study.

We are also thankful to a wide-range of colleagues who generously shared their knowledge and feedback on the Bridge International Academies case study, including: Geordie Brackin, Lucy Bradlow, Andrew Carruthers, Gibson Gisore, Jay Kimmelman, Marie Leznicki, Shannon May, Sujatha Muthayya, Sylvia Njoroge, Lillian Wamuyu, Andrew White, and the teachers, students and parents at Bridge International Academies in Gicagi and Kwa Njenga, Nairobi.

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

The Brookings Institution is a nonprofit organization devoted to independent research and policy solutions. Its mission is to conduct high-quality, independent research and, based on that research, to provide innovative, practical recommendations for policymakers and the public. The conclusions and recommendations of any Brookings publication are solely those of its author(s) and do not reflect the views of the Institution, its management, or its other scholars.

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

Brookings recognizes that the value it provides is in its absolute commitment to quality, independence, and impact. Activities supported by its donors reflect this commitment, and the analysis and recommendations are not determined or influenced by any donation.

BRIDGE INTERNATIONAL ACADEMIES

DELIVERING QUALITY EDUCATION AT A LOW COST IN KENYA, NIGERIA, AND UGANDA

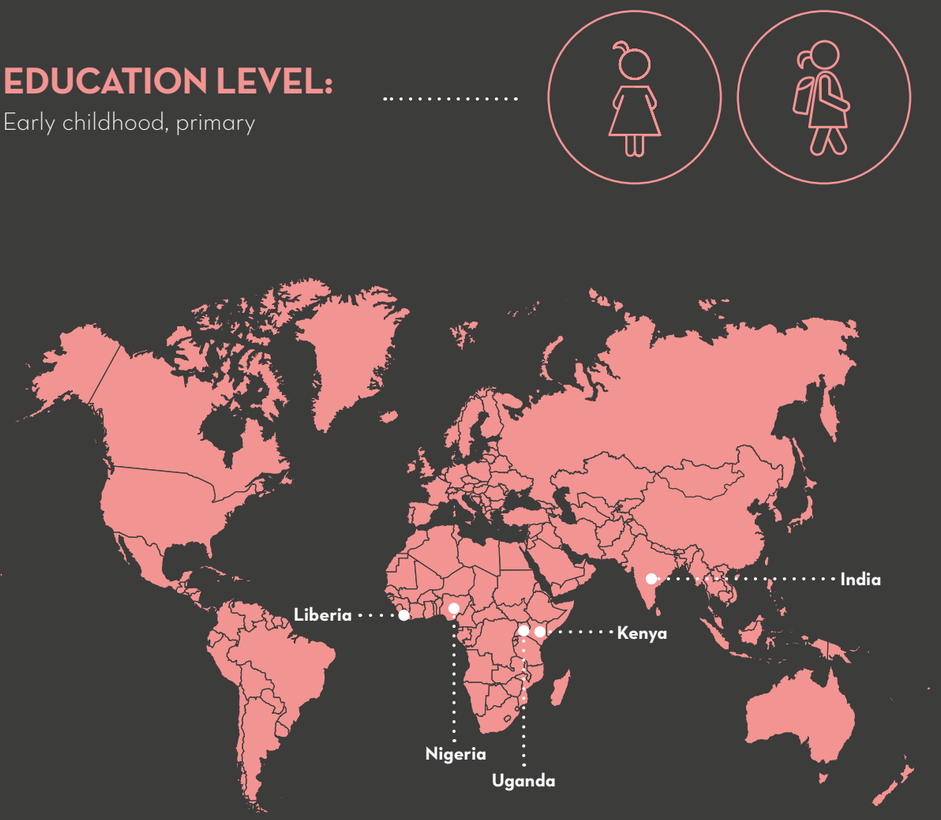
Christina Kwauk and Jenny Perlman Robinson

Center for Universal Education at BROOKINGS

Bridge International Academies at a glance

EDUCATION LEVEL:

Early childhood, primary



LOCATION:

Low-cost private schools in Kenya, Nigeria, Uganda, and India (June 2016); Public schools in Liberia (beginning 2016–2017 academic year)

FOCUS OF INTERVENTION:

Development and delivery of low-cost private schools and public-private partnerships

INTERVENTION OVERVIEW:

Bridge International Academies (2008-present), a for-profit education company (referred to as 'Bridge' for short), has developed an education model that leverages technology and scale to train and support under-served communities to deliver a pre-primary (nursery and kindergarten) and primary school education. In Kenya, Nigeria, and Uganda, Bridge builds, staffs, and operates more than 450 low-cost private schools in marginalized communities. The low cost schools will soon be up and running in India as well as Liberia. In Liberia, Bridge will partner with the national government under the Partnership Schools for Liberia Program to run free public schools (currently, a pilot with 50 schools). The Bridge model—whether delivered through private or public schools—ensures a standard minimum level of quality through a comprehensive teacher support system and rigorous monitoring and evaluation. It trains its teachers in pupil-centered learning and provides each teacher with a tablet onto which it uploads daily teachers' guides, designed by a central academic team, with the materials and instructions to deliver lessons. Classes are measured quantitatively by tracking how far teachers progress through the daily lesson by daily syncing of teachers' tablets with the school leaders' smartphone via wireless hotspot, and qualitatively using roving academic support teams. This allows Bridge to iterate lessons and provide additional support in real-time. Tablets also monitor teacher attendance, triggering an alert to headquarters to send substitutes when teachers are absent. According to Bridge, students in Bridge schools pay, on average, $6.60 per month for tuition (although, the cost may be higher once fees for exams, uniforms, school supplies, and meals are factored in), which can be paid on a flexible schedule. Academies are "cash free" and all school fees and staff salaries are paid via mobile money and managed by a central team in headquarters. Bridge's low-cost private schools utilize a highly standardized "academy in a box" model that is scale-focused, data-driven, and technology-enabled. The model controls the entire supply-chain—from building academies to developing content to hiring and training teachers.

TYPE OF LEARNING MEASURED:

Literacy and numeracy (measured by Early Grade Reading Assessment, or EGRA, and Early Grade Math Assessment, or EGMA) and overall basic education outcomes (in Kenya, the Kenya Certificate of Primary Education, or KCPE)

COST:

Kenya budget (private schools): estimated annual budget was $28, $40, and $65 million for 2014, 2015, and 2016, respectively. Annualized cost per child per month in Kenya: approximately $6.60 (overall system in Kenya must reach approximately 250,000-500,000 students to cover all system-wide investments). Budgets for Nigeria and Uganda, unavailable. Currently financed with equity ($85 million) and debt capital ($10 million) from the U.S. Overseas Private Investment Corporation (OPIC), and in addition for Nigeria with a $6 million grant from the UK Department for International Development. In Liberia, external donors are providing financing for the start-up costs of 50 pilot schools, while the government continues to pay the school running costs.

SIZE:

Direct reach—In total, 100,000 students in over 450 academies in Kenya, Nigeria, and Uganda, and 50 pilot schools in Liberia since 2009. *Indirect reach*—6,000 teachers, 500 employees, and 5,000 contractors.

IMPACT:

Learning outcomes—According to a Bridge-commissioned impact evaluation, Bridge students in Kenya gained, on average over one year, an additional 0.31 standard deviation on EGRA subtasks like reading and listening comprehension (approximately 64 more days of learning), and an additional 0.09 standard deviation on EGMA subtasks like quantity discrimination and word problems (approximately 26 more days of learning), compared to peers in neighboring schools. In 2015, according to Bridge, 19 Bridge academies achieved a 100 percent pass rate on the Kenya Certificate of Primary Education (KCPE) exam; 76 percent of Bridge academies achieved a 70 percent or better pass rate.

Background

At the beginning of the new millennium, with renewed international efforts to achieve universal primary education by 2015 as part of the Millennium Development Goals, MDGs, many countries in Africa began to abolish school fees, or user fees—a legacy of structural adjustment programs made popular in the 1980s. For Kenya, fee abolition in January 2003 led to a surge in primary enrollment; within weeks of announcing the new policy, more than 1 million new students (almost an 18 percent increase) showed up in classrooms across the country, overwhelming teachers and the larger education system. Challenges in providing quality learning before fee abolition multiplied in the face of the exponential rise in students being served (World Bank and UNICEF 2009).

Today, Kenya, like many of the other countries that abolished fees at the dawn of the MDGs, continues to face struggle to provide quality education to its population—a challenge that threatens to undermine the tremendous progress made from opening educational access to the most marginalized. In 2014, for example, 49 percent of students who made it to Grade 8 in Kenya failed the national primary school exit exam.[1] According to the 2013 Uwezo learning assessment surveys, many of these students (approximately 2 out of every 10 Grade 7 students) lacked the literacy and numeracy skills expected upon completion of Grade 2 (Uwezo 2013). Such poor academic performance persists, due in part to a shortage of trained teachers and/or teachers who do not show up for class. A recent survey suggests that in Kenya only one-third (approximately 35 percent) of public school teachers, compared to about one-half of private school teachers, scored at least 80 percent on exams based on the very curriculum they teach. Also, public school teachers were absent from the classroom 47 percent of the time, leaving children receiving an average of only 2 hours and 19 minutes of class a day (World Bank 2013). Other contributors to students' poor performance in Kenya include a lack of textbooks and large class sizes. More than 80 percent of public schools in Kenya's urban slums have classrooms with more than 45 students per teacher; some schools exceed 100 students per teacher (Ngware, et al. 2013).

The development effect of the failure of the public education system to deliver quality learning opportunities has been compounded by the fact that it is almost entirely children from large households living in poverty who attend Kenya's public schools (Ngware, et al. 2013).[2] While private schools have emerged in the past decade to meet the gap in the government's ability to deliver education, even these schools can vary dramatically in quality as well as cost, with one not necessarily correlating with the other. Despite the cost of attending private schools, many families in Kenya, as in other countries throughout the developing world, have begun to demonstrate their willingness to pay a relatively high proportion of their income to send their children to what they believe to be a higher quality school.[3] World Bank data suggest that in low-income countries, the percentage of primary school students

enrolled in private schools is actually higher than in middle- and high-income countries.[4] And while logic suggests that poor families would be the first to be excluded, in Kenya the steady decline in enrollment in public primary schools over the past decade illustrates that, even with free primary education since 2003, many poor families are also choosing to send their children to private schools.[5] For instance, the African Population and Health Research Center estimates that more than 60 percent of children in Nairobi's urban slums attend non-government schools—36 percent in formal private schools and 27 percent in low-cost private schools; the remaining 37 percent attend government schools (Ngware, et al. 2013).

Within this space, co-founders Shannon May and Jay Kimmelman created Bridge International Academies in Kenya in 2008 (referred to in the shorthand as 'Bridge') to answer one question: how can we deliver learning outcomes for children at a low cost? By investing in a "learning lab" that uses technology and human capacity to monitor outcomes that are then fed back into the system, Bridge has over time developed a unique whole-school approach to tackling some of the biggest issues in education, such as teacher training and support, lesson delivery, and monitoring. In effect, Bridge has reengineered the entire lifecycle of education delivery; in the case of its private schools, it controls the entire supply chain from school construction to curriculum design to teacher training to lesson delivery. As a result, Bridge's highly standardized "academy in a box" includes the training, processes, materials, curriculum, and tools needed by communities to open and run a privately owned, low-cost, quality school.

While Bridge started by developing and delivering its education model as a chain of low-cost private schools in Kenya, Uganda, Nigeria, and soon also India, in 2016 the company has been able to take its model and move to using it in free, public primary schools in a pilot project in Liberia. Collectively, its low-cost private schools and Bridge-run public schools make Bridge the largest education company focused on low-income communities in the world. Recognizing this, the focus of this case study is on Bridge's low-cost private schools—what Bridge has been most successful at scaling up to date.

Leveraging scale to improve quality and access

Bridge International Academies opened its first private school in Mukuru slum in Nairobi in 2009. It grew rapidly from 8 academies in 2010 to 359 in 2014 in Kenya alone. By 2016, Bridge had expanded its low-cost private school model to other countries, running more than 450 academies across Kenya, Nigeria, and Uganda, reaching more than 100,000 students. Two-thirds of the academies are located in areas of high population density, with 33 percent of its academies in urban slums, 30 percent in peri-urban communities, and the remaining 37 percent in hard-to-reach rural areas.

By approaching the delivery of schooling as a market that functions best at scale, and by basing the success of its business model on whether it reaches 250,000 to 500,000 students (the approximate number Bridge needs to enroll in order to break even), Bridge has been able to leverage volume to drive down costs, amortizing investments in quality over a large number of academies. According to Bridge, its low-cost private schools cost approximately $6.60 per student per month, well below the per child funding levels of Kenyan public schools, which for 2015 were conservatively estimated to be on average $20.11 per child per month (for a nine month school year), or about $181 per year (UNESCO 2014; see also Bold, et al. 2013a).

While Bridge may have gotten the cost of delivery below or within government budgets—a reason why the Government of Liberia was initially interested in partnering with Bridge—critics of Bridge have noted that its tuition fee (roughly $6.60 per student per month) is cost-prohibitive for the poorest of the poor.[6] For a family of five living at the poverty line ($1.90 per person per day), sending three children to a Bridge academy would account for roughly seven percent of the family's monthly income. Factor in fees for exams, uniforms, school supplies, and meals—"hidden" fees that students attending public schools would also have to pay—and the average cost is closer to $16-$20 per month per child, or roughly 17 to 21 percent of the family's monthly income.[7]

Unlike some non-profit, low-cost private schools, Bridge has unapologetically sought a profit for its investors, which include venture capitalists, the International Finance Corp (the concessionary lending arm of the World Bank), bilateral agencies such as the UK Department for International Development, foundations such as Omidyar, individuals such as Bill Gates and Mark Zuckerberg, and others. According to Bridge, it was set up as a for-profit organization to enable it to consistently refine its model based on the feedback of its core stakeholders—the families it serves—and to ensure long-term sustainability of the company as a whole (Buchannan 2014). On the one hand, if parents thought the academies were doing well, they would continue to pay the fee, tell others to come, and help make the academies sustainable; on the other, if parents thought Bridge academies were not performing, they would withdraw their children, leading to the company losing revenue, and perhaps forcing the academies to close. In the end, the fee structure has helped create accountability by Bridge to parents, an idea that drew support from global investors who believed in the potential to create a model with more direct lines of accountability as a mechanism for change in education.

The Bridge model for low-cost private schools—also called an "academy in a box"—takes advantage of economies of scale, reduces the number of administrative staff at each academy to one (the Academy Manager), and leverages technology to lower the cost of operating an academy. Standardization extends across all aspects of Bridge academies, from standardized instruction by teachers per country to standardized daily operations by academy managers. With regard to its chain of private schools, Bridge's highly structured model grounded in local context enables the company to achieve greater economies of scale and greater control over all aspects of quality as it expands.

While Bridge owns all of its private schools, each academy is run by an Academy Manager who lives in the community being served. Each Academy Manager is equipped with a smartphone that he or she uses to record attendance, track payments, and communicate with a central support team. The central support team then manages all the administrative needs of the school, including payroll and expenses, staffing, supplies and repairs, IT, and a 24-7 customer care line for parents to call with questions or issues.[8] Academy Managers are thus freed to work with parents and teachers, ensuring children are in class and learning. Academy Managers report to and are held accountable by Bridge headquarters, which in turn provides critical support and training services to ensure Academy Managers are equipped to run their academies successfully (Rangan and Lee 2010).

One of Bridge's stated goals is to show that it is possible to deliver a high-quality education for all children. To address the shortage of trained and certified teachers, particularly in the underserved communities it serves, Bridge looks for local talent with the minimum qualifications necessary to apply to a government teacher training college, but who might not have necessarily had the opportunity to attend a teacher training college. Successful Bridge applicants attend a 235-hour intensive training course at the Bridge International Training Institute (BITI). Those who complete and pass the course receive a certificate, and are entered into a pool of certified teachers from which Bridge Academy Managers can hire. Bridge provides teachers who are hired with ongoing in-service training, professional development, and opportunities for additional training and certification from BITI. Bridge teachers also receive daily support from Academy Managers and professional development coaches who make regular classroom visits, provide updated training, review student and class level assessment data, and work with teachers to discuss any issues in a particular class (Rangan and Lee 2010).

While in principle it may seem problematic that Bridge hires uncertified teachers, research on teacher development in other developing country contexts suggest Bridge's teacher recruitment strategy holds some merit, since the alternative in many cases is to not have a school nearby at all, or to have a school with no teachers (see for example Nilsson 2003). Studies in South Asia have shown that, under certain circumstances, secondary school graduates without government teaching credentials can outperform government certified teachers in terms of student achievement scores if they receive short and intensive training, ongoing support and monitoring, and are held accountable for results (see for example Kim, Alderman, and Orazem 1998; Khandkher 1996; Rugh 2000; World Bank 1997). The key, however, is that there are plans in place to improve recruiting and in-service training over the long-term. Furthermore, Bridge argues that, by hiring from the local community, its teachers are positive adult role models to their pupils, able to empathize with the children's circumstances, as well as be adults with whom children identify with and confide in. Indeed, there is research from other schools in India demonstrating that this strategy helps to close the cultural gap between teachers and students, which in turn improves learning, especially for girls (Banerjee, et al. 2007).

Central to the BITI method is to train teachers to move away from the front of the classroom to spend the majority of the lesson moving around the classroom checking for understanding. In countries where rote teaching is the norm, even in expensive private schools, Bridge's focus on pupil-centered learning is a core differentiator. As is its zero tolerance policy on corporal punishment, which, according to Bridge, both teachers and parents attest helps to promote inquiry in the classroom and develops confidence in children.

To assist with this type of teaching, each Bridge teacher is equipped with a tablet onto which teachers' guides, or "lesson scripts," are uploaded using the Academy Manager's smartphone via wireless hotspot. These guides set out all the content for each lesson as well as instructions for how to best deliver that content. To complement its lessons, Bridge also develops its own books, instructional games, symbols, and other child development tools to reinforce learning. All the teacher and learner resource materials are developed by subject matter experts who Bridge hires from Nigeria, Kenya, India, Kenya, Liberia and the United States. Content is based on the national curriculum of the country of operation but the method of delivery is based on the latest best practices.

The twice daily syncing of the teacher tablet allows Bridge's central support team to both monitor academic progress (i.e., time it takes to teach a lesson and record pupil test scores) and teacher attendance, streamlining school administration while collecting data on efficiency and quality and holding teachers accountable. If teachers are late or absent, the central support team is automatically notified and a substitute teacher is contacted and sent to the academy.

While the tablets themselves offer Bridge academies a point of difference in the communities in which they serve, the teachers' guides have received some of the most attention—and criticism. According to a Bridge teacher, the lesson scripts have been an important component to the Bridge model by helping new and inexperienced teachers in Bridge academies feel more confident-in and reassured-by the guidance received throughout their teaching (Teacher at Bridge International Academy in Gicagi, interview by Jenny Perlman Robinson, April 22, 2015). Moreover, the time that teachers would have spent developing their daily lesson plans is freed up to focus on students who might need additional support. According to Bridge and other proponents of scripted instruction, the underlying idea is that lesson scripts help to ensure a minimum quality of instruction across all its academies, reducing the high variation in quality by providing "scaffolding" for weaker teachers—an argument that has also been used to support scripted instruction in other contexts facing short supply of qualified teachers, including in the United States in the 1960s as well as in 2002 with the passage of the No Child Left Behind Act (Bereiter and Engelmann 1966; Ede 2006). This approach has been particularly popular in areas where teachers are insufficiently trained and thus lack the capacities, experiences, and classroom know-how that a more expert teacher would have. As the argument goes, by lifting the bottom to the average—whether this is public schools or private schools—the

quality of education in a country could be improved overall (see for example Andrabi, et al. 2007). Indeed, scripted lessons have also been an integral component to education programs targeting hard to reach communities and out-of-school children, including interactive radio instruction programs supported by the United States Agency for International Development in countries throughout Latin America, Asia, and Africa dating as far back as the 1970s and most recently in 2014 during Ebola-related school closures in Liberia (World Bank 2005; Friend 2006).

Bridge's use of lesson scripts have received a fair share of criticism; among them that scripts—and the close monitoring of time on task and pace of progress made possible by the tablets—would make it difficult to (and discourage teachers from) going off script. For instance, teachers are trained to read their lessons directly from their tablets (and to pause and elicit responses at certain times); thus, teachers across all Bridge academies, in a given country, are theoretically speaking the same words and conducting the same activities at the same time (Ede 2006; Buchannan 2014). However, by relying on tablet feedback to Academy Managers and Bridge's headquarters—a mechanism intended to increase accountability—under-performing teachers may become hard to distinguish from more high-performing teachers who go off script due to a number of different reasons, including the need to improvise instruction to meet student needs or to take advantage of serendipitous teachable moments. As more and more Bridge teachers improve and grow, gaining experience, confidence, and familiarity with the content, such scaffolding may stifle rather empower. Critics of Bridge, and of scripted instruction more generally, are quick to point to how Bridge's standardized approach promotes a robotic practice of teaching, rather than seeing classroom instruction (and the role of the teacher) as a continuum of externally planned lessons on the one end and teacher-developed lessons on the other (Commeyras 2007). Perhaps the more important question then, is whether Bridge's leadership has considered how to build in flexibility into its standardized approach to support academies—and their teachers—that are ready to move above and beyond delivering a minimum standard of quality.

Where it operates private schools, Bridge often pays its teachers an average salary of $114 to $125 per month—less than the typical government salary of approximately $145 to $175 per month, although, according to Bridge, still a good salary for secondary school graduates (Shannon May, interview by Jenny Perlman Robinson, April 22, 2015). According to the teachers themselves, the benefits of being paid regularly and on-time outweigh the slight pay decrease. Indeed, regular payment of teachers is more of the exception than the norm in the case of Kenya's public education system—where government teachers can be paid with up to a three-month delay (Bold, et al. 2013b)—or in many developing countries around the world. And for the country's para-teachers, who are hired to supplement teacher shortages in public schools, an efficient payment system like Bridge's comes as a welcome respite, as para-teachers can be paid irregularly or sometimes not at all, since their salaries are paid at the discretion of the Parent-Teachers-Associations, which themselves depend on the fees levied from parents (Shannon May, interview by Jenny Perlman Robinson, April 22, 2015). According to Bridge, it also provides health and pension benefits in line with national laws, which for many of its teachers is the first time they have received such benefits.

One of the key challenges of scaling has been negotiating fluctuating regulatory environments. Bridge expanded its low-cost private schools in Kenya amidst new regulations being drafted by the government for non-state schools. In Kenya, because the process of drafting government regulations for non-state schools took place over seven years, there was significant ambiguity about the government's intent for the "alternative" or "complementary" education sector. Eventually, in 2015, the Ministry of Education asked that non-formal schools, of which Bridge is one, to freeze expansion until the new regulations for non-state schools were released (Herbling 2015). Additionally, the Ministry issued guidelines that revoked alternative schools' registration as testing centers in a move to ensure that only ministry-registered schools could enroll students to sit for the mandatory national primary exit examinations. This led Bridge families to become concerned that their children would be unable to sit for national exams and transition to secondary school. Without this guarantee, Bridge academies would have no other option but to close.

Despite this potentially unfavorable policy environment, Bridge and other alternative schools worked closely with Kenya's Ministry of Education to find a positive solution. The Cabinet Secretary ensured that, while waiting for the new regulations to be finalized, children who had been attending alternative schools could sit for the exam at other registered public schools. As a result, Bridge's first class of 2,900 graduates sat for their national exams in 2015. And, in March 2016, the government released its new regulations, allowing Bridge to begin the process of registering its 405 academies in Kenya as "alternative" schools (personal communication, Shannon May and Jenny Perlman Robinson, February 23, 2016).

Bridge expanded its private schools into Eastern Uganda in 2015 due to its proximity to Kenya and given the ease with which Bridge assets and materials (i.e., personnel and curriculum) could be shared during the initial expansion. However, because Eastern Uganda has some of the lowest performing schools in the country, Bridge's standardized model was quickly met with the challenge of needing to adapt its teaching and learning materials and structure of the school day to account for the lower proficiency levels of English. To do so, Bridge developed a cross-age, homogenous learning-level English program for 2 hours of every school day to enable children to rapidly acquire the language comprehension needed to engage with grade-level material. This program developed for Uganda is now available for use in other countries as needed to accommodate children who have been out of school or who find themselves in such poor schooling conditions that they need rapid language acquisition to be able to succeed at their age level. By June 2016, Bridge had worked with 63 communities to establish new academies.

Bridge's expansion into Nigeria in 2015 was not part of its original plan, but rather emerged after the company's leaders deemed the environment ripe for

its model. Specifically, a UK Department for International Development (DFID)-commissioned study had found that 70 percent of students in Lagos were attending low-cost private schools (Gibson, et al. 2011). Working in partnership with the Lagos State Ministry of Education—which had demonstrated a willingness to acknowledge low-cost private schools as an education solution in the state—DFID released a public Terms of Reference seeking proposals to improve learning outcomes in Lagos's private market for education. Bridge responded to this opportunity; after which the Director General of Lagos's Ministry of Education traveled to Kenya to visit Bridge's academies there. In September 2015, Bridge opened two nursery and primary academies in Lagos. Both schools had full enrollment and waiting lists in their first week of the academic year. Four additional schools opened across Lagos State in early 2016, with another 20-30 expected to open for enrollments in September 2016.

As Bridge has grown, it has learnt lessons about adaptation and working in partnership with governments. In 2015 Bridge entered into a Memorandum of Understanding with the Government of Andhra Pradesh in India to rebuild and expand decrepit, closed schools and transform them into model low-cost private schools, increasing diversity of supply, and aiming to demonstrate that a quality education at the minimum level is possible even on a limited budget. The first four nursery and primary academies will open in summer 2016, again changing elements of its model to suit local needs. For example, children in these academies will participate in yoga for their physical exercise.

The underlying theory of change articulated for Bridge's low-cost private school model is that, if Bridge creates competition within the space of education provision, its network of academies (supported by a central headquarters) could potentially radically alter the learning outcomes for children in the short-term while creating a strong demonstration effect that could drive long-term public sector reform in the countries where it operates. Indeed, this model has begun to show signs of influencing the public education sector. Specifically, in late 2015, Bridge was asked by the Government of Liberia to host an inspection of its schools. After several months of engagement and witnessing the successful impact of Bridge academies at scale across Kenya and Uganda, the Liberian government sought out Bridge as a private sector partner under its Partnership Schools for Liberia program, which aims to deliver quality education throughout the country. Beginning in the 2016-17 academic year, Bridge will pilot its model in 50 Liberian public primary schools; that is, students at these schools will not be paying Bridge any tuition fees. Under this model, Bridge will work with government school teachers, who will be taken through Bridge training and equipped with Bridge teacher tablets and learning materials. The government will continue to pay for teacher and administrative salaries at the same level and fund school upkeep while external donors will fund the set-up costs of the pilot.

The public private partnership model could allow Bridge to expand in both scope and scale. Specifically, the public-private partnership in Liberia has pushed Bridge beyond its initial for-profit model where it ran a network of low-cost private schools as an alternative to low quality public schools, to working *with* the government to provide innovative solutions to the public provision of education.

Impact and evidence of success

Because Bridge collects and mines an enormous amount of data in real time through its teacher tablets and Academy Managers' smartphones (via SMS texting), Bridge has been able to monitor and track the immediate impact of its model on the effectiveness of individual schools. For example, Bridge students receive, on average, 8 hours and 25 minutes of instruction per day (out of a 9.5 hour school day from 7:30am to 5:00pm each weekday; students are also in school for a half day on Saturdays), compared to the World Bank's estimate for public schools in Kenya of, on average, 2 hours and 19 minutes of instruction per day (World Bank 2013). The teacher absenteeism rate at Bridge academies is also significantly lower (less than 2 percent)[9] when compared with teachers in public schools (approximately 16 percent—although, as mentioned earlier, there is a 47 percent absenteeism rate for teachers in Kenya who are present in school but absent from class) (World Bank 2013).

When it comes to evidence on student learning, rigorous monitoring and evaluation is planned and in process. At present, results from a quasi-experimental study and one randomized impact evaluation, both commissioned by Bridge and administered by Decisions Management Consulting (an independent monitoring and evaluation company), constitute the evidence base behind the "Bridge effect" (Bridge 2013; 2016). Using the EGRA and EGMA—two open source assessment tools used to measure literacy and numeracy by groups across the globe[10]—Bridge has demonstrated positive learning outcomes among its students compared to peers attending neighboring government schools. For instance, over the course of one year, Bridge students in a randomly selected, nationally representative sample of 49 Bridge academies gained an additional 0.31 standard deviation on core reading skills, and an additional 0.09 standard deviation on math, compared to their peers in 38 neighboring public schools.[11] This translates into approximately 64 additional days of learning for reading and approximately 26 additional days of learning for math (Bridge 2016).

In 2015, Bridge's first class of 2,900 primary school graduates in Kenya took their national primary school exit examinations, the KCPE. Since the Kenyan Ministry of Education stopped ranking schools based on results, it is difficult to ascertain how Bridge academies compare with other low-cost private schools and government schools. According to Bridge, however, its first academy in Mukuru slum, along with 18 other Bridge academies, achieved a 100 percent pass rate; 76 Bridge academies achieved a 70 percent or better pass rate. In terms of raw scores, 776 Bridge students placed in the top 22 percent in the country; 25 academies achieved an average score of 300 points

or better (out of a possible 500). Overall the Bridge mean score was 264 compared to a national mean score of 242 points.[12]

As Bridge has grown, the company has also expanded its efforts in monitoring and evaluation. For example, Bridge has invested more than $100,000 annually since 2013 to follow and assess over 8,000 randomly sampled students covering over 170 academies across 17 counties in Kenya. Bridge is also investing in a randomized controlled trial expected to commence in 2016 and to be conducted by Michael Kremer and colleagues. The study aims to compare the impact of attending a Bridge academy compared to an alternative school in the same community. Finally, both the Partnership Schools for Liberia program and the DFID program in Nigeria require third party monitoring and evaluation, which will provide independent analyses of Bridge's impact on its students' learning outcomes.

Timeline of key events

2009
First Bridge Academies open in Kenya.
Omidyar Network becomes Bridge's first major investor.

2011
Custom smartphone software is piloted to help academy managers in their daily management activities, and rolled out across all academies the following year.

2013
A tablet application is developed for teachers to use in class to improve lesson delivery, assessment, and the collection of administrative data.

2014
Bridge adds a lunch program, as well as school uniform sales in Kenya.
Bridge founders, Jay Kimmelman and Shannon May, are named Schwab Foundation Social Entrepreneurs of the Year.

2015
Bridge expands to Uganda (January) and Nigeria (September).
Bridge is awarded a WISE Award for innovation in education, the Economist Social and Economic Innovation Award, and the OPIC Development Impact Award.

2016
Bridge will open its first academies in India.
Bridge will pilot 50 schools in Liberia under the Partnership Schools for Liberia program.

Key drivers behind scaling impact

Bridge's co-founders did not appreciate how contentious their approach would be. They thought their initial analysis and model for low-cost private schooling was logical and that others would agree. Instead, they were faced with critics at every point—either questioning the commercial viability of their model or criticizing the underlying philosophy of making a profit off of what many think should be considered a free, public good.[13] The path has been much harder than they expected.

Despite this criticism, Bridge has expanded rapidly, opening a new academy every 2.5 days in 2014. As a global education company, what aspects of Bridge's private school model and their approach have enabled the company to scale in such a manner? In particular, what strategies enabled it to effectively provide access to low-cost quality education for children who were receiving a poor quality education merely because they were living in poverty?

While Bridge's single-minded adherence to standardization has allowed the company to keep costs low, to open new academies quickly, and to maintain a minimum level of quality across all of its academies—other strategies have also contributed to Bridge's rapid success and expansion. These include designing for scale from the onset; being ruthless about driving down costs that will not compromise the quality of education being delivered; leveraging technology to digitize its back-office logistics, increase accountability, and improve schools; and investing in opportunities aligned with its mission.

Designing for scale from the start

According to Bridge co-founder Shannon May, it is far too difficult to retrofit a model after the fact. Therefore, Bridge decided to build its first academy as though it was its 100th academy.[14] If Bridge had begun with the luxury, gold plated model, it would have been very difficult to determine which pieces to remove—either because, psychologically, people come to expect them or, pragmatically, it becomes difficult to determine which elements are superfluous. As such, Bridge invested large sums of capital into research and development before its first student was ever even admitted. The company found that it was "imperative to continue this rigorous development process until the highest levels of academic performance and operational effectiveness are achieved so that the 1st, 100th, and 1,000th pupils receive the same level of education as the 100,000th and the 1,000,000th."[15] This has meant that every step of the way, from when the idea was first conceived in 2008 to its recent partnership with the government of Liberia in 2016, Bridge has been thoughtful and deliberate about what its intervention would look like and how the company would function at scale.

For example, a manager at the first academy asked co-founder Jay Kimmelman if he would take with him a hard copy form that the manager needed to submit to the central office, as Jay was headed that way. While it would have been easy for Jay to take the form with him—and at that point faster—Jay insisted that the manager enter the data into Bridge's central system through SMS texting, which is how Bridge had envisioned its operational processes for when it had hundreds of academies across the country. This dogged focus on scope, scale, and speed from day one has been mission central to Bridge's success. For its growing network of private schools, this means continuing to amortize its quality components over hundreds of academies.

Significantly, Bridge also builds in an exit plan into its strategy, either through a public offering or entering a charter-like situation with a government.

Being ruthless about driving down costs

To serve the "bottom of the pyramid" with a quality product at a price point that is feasible for poor communities, even if it is not affordable for the poorest of the poor, Bridge had to fixate on driving down costs at every point of its supply chain. While initially Bridge looked for partners to outsource aspects of its business—including real estate agents and construction companies—it quickly came to the conclusion that, in order to have the quality it was looking for at the lowest cost, it was more cost-effective to execute every step in-house. Retaining total control has been an important feature in how Bridge operates so efficiently and hence at the lowest cost possible.

Today, Bridge can be seen as a conglomerate; it has its own in-house real estate agents, construction business, furniture makers, curriculum developers, software designers, customer service center, procurement process, and uniform designers. Given that Bridge controls its entire supply chain, when any revision or improvement is made to one aspect of the model, it can quickly and effectively roll it out across all of its 450 and expanding academies. As an example, if a more ergonomically-correct student desk is developed, Bridge can quickly make changes to all new construction in all of its academies. If data show that a change in a particular teaching method leads to better outcomes, Bridge can make immediate changes to every single academy through the teaching and learning materials transferred to teacher tablets. It is not dependent on an outside provider's timeline, willingness, or capacity to make these changes. Likewise, any variation to its model translates directly into increased costs for the company itself. As a result, Bridge analyzes very carefully a range of qualitative and quantitative data before making any changes to its model.

Achieving functional scale early on—where every aspect of the supply chain was under Bridge's roof—helped Bridge to keep its price points low. Viewing students and their families as customers also helped to position Bridge as a company providing high quality products, be it education,

food, or uniforms. Volume, then, could be used to drive down costs even further. In line with this perspective, Bridge began to implement an accounting system in which it translates costs into student months. Before anyone can consider an additional expense to the existing model, it must be translated into what this expense will mean in terms of accessibility. This is an effort to align all decisions around what it means for the customers that Bridge serves. Additionally, any new cost is not considered until a certain number of customers—families—are consulted through a parent phone bank or through other methods. Similarly, Bridge staff explain to parents that any improvement they want to make comes with compromises, that there are not limitless funds available.

According to Bridge, its most recent partnership with the Government of Liberia is further indication that the company has begun to get its cost model right. That is, the company has designed the intervention at a price point that is comparable to the average per capita spending on primary education across sub-Saharan Africa. However, given the Government of Liberia's need to tap into external donor support to get the model off the ground, it is more likely that the financial feasibility of the model—at least for government budgets—lies in the model's recurrent costs, something that is driven down by leveraging technology to streamline schools and improve school quality.

Leveraging technology to improve schools

A key component to the successful scale up of Bridge's model has been its use of technology to make more efficient and transparent not only the day to day school administration, but also classroom instruction, especially for new and inexperienced teachers. For instance, one element that Bridge has been unwilling to bend on has been its decision to make all of its academies "cash free." Bridge had learned from its operational research that many school administrators spent up to 50 percent of their time serving as a "cash register," collecting tuition payments, paying teachers, and paying vendors (Rangan and Lee 2010). By centralizing these functions and leveraging mobile banking technology to automate payments to teachers and tuition from parents, not only can Bridge free up time for its academy managers to manage the daily functions and performance of their academies; it also has allowed Bridge more oversight of its finances, has reduced the opportunity for corruption, and has created cost savings for the company as a whole (Rangan and Lee 2010). Additionally, automating payments directly to each academy's account adds to families' knowledge of where their money is going.

Most importantly, Bridge has used technology to help unburden teachers from a range of administrative tasks, including attendance tracking, that took away valuable time away from teaching. For example, tablets allow centralized data collection and analysis, which facilitates central monitoring of many aspects of teaching and learning that would traditionally be the responsibility of teachers to collect and monitor. This has the added benefit of providing real-time data collection and processing, allowing Bridge to identify and respond to challenges more rapidly and thus to continuously strengthen its programs. And, as mentioned above, because Bridge controls the entire supply chain, it can very quickly, efficiently, and effectively roll out any changes across its more than 450 academies nearly instantaneously.

Tablets have also enabled Bridge to solve the immediate challenge of rapidly increasing access to school: the short supply of qualified and experienced teachers. As one of the model's core components, teacher tablets and the daily lesson scripts have been essential to ensuring a minimum standard of quality regardless of the available pool of teachers or lack thereof. By centrally developing all the teaching and learning materials, this model provides new teachers with step-by-step instructions for teaching content that they themselves may not be experts in, and enables teachers to focus more time on their students' progress rather than on creating content and lesson plans themselves. To illustrate, one Bridge teacher in Nairobi expressed that the lesson scripts and instructions for teaching gave her confidence and allowed her to focus on students who needed additional support (Teacher at Bridge International Academy in Gicagi, Nairobi, interview by Jenny Perlman Robinson, April 22, 2015). The question now is whether Bridge's model will be flexible enough to allow teachers to gradually grow out of this scaffolding and to leverage technology in other ways to improve their teaching.

Increasing accountability to drive performance

Bridge has also leveraged technology and data to strengthen accountability—an element that is often absent in public schools where information to make informed decisions is lacking and poor performing teachers cannot be dismissed easily. As mentioned earlier, in Kenya, public school teachers are absent from school around 16 percent of the time (World Bank 2013). For teachers who do show up to school, time spent on learning is often extremely limited with teachers absent from class—and doing other tasks, presumably administrative—up to 47 percent of the time, leaving students with less than 2.5 hours of instruction a day (World Bank 2013).

In sharp contrast, teacher absenteeism at Bridge academies, according to internal data, is less than two percent (Bridge 2013). And, if a teacher does not show up or shows up late, Bridge headquarters is immediately made aware via the teacher's tablet and sends a substitute teacher. Lesson pacing tracking on teacher tablets is also used to inform headquarters if a teacher is spending too little or too much time on each task. Additional training and support can be sent to assist underperforming teachers, although dismissal may also be a consequence. In effect, through Bridge's use of technology, the "black box" of learning—what happens in a classroom—is no longer as opaque; Bridge is much more aware of what is happening within its classrooms at all times. And, because

it has standardized its procedures and methods, it can identify what is responsible for driving outcomes.

Bridge's monitoring extends beyond its tablets to unannounced in-person class visits, roving videos where classrooms are filmed and reviewed on an ongoing basis to learn how to improve lesson guides, qualitative assessments, monthly academy manager forums, and a 24-hour anonymous customer care hotline. According to Bridge, a positive spillover effect has been a change in mindsets around accountability and greater expectations for better information and communication. When Bridge first opened its doors in 2009, it established a 24-hour customer care hotline where parents, teachers, and others within the community could call in for information or anonymously report any problems. More than providing Bridge with mere optics, this hotline receives more than 2,000 calls a day. All of this information, both quantitative and qualitative, is fed back to Bridge headquarters and used to inform improvements to its model.

Using data to improve the model

Indeed, what is perhaps most interesting about the Bridge model is the data it has gathered on teaching and learning. While many education organizations claim to be data driven, few demonstrate how data can be used to inform education delivery to the extent that Bridge does. By integrating teacher and learner material development, monitoring and evaluation, and school management, Bridge has created a "learning lab" on a massive scale. Bridge argues that its ability to deliver learning gains for children, and to increase these gains over time for a given child in a given grade level, is due to the fact that Bridge itself is a "learning organism." By assessing children's learning of specific lessons, units, or terms, Bridge can modify the teachers' guides in real time to deliver new lessons to cover areas without mastery, and publish new books for the next year. Bridge also runs internal "A vs. B" testing to determine how lesson pacing, format, or specific examples may lead to more or less comprehension.

By having an internal learning lab of over 450 schools, Bridge has been able to continually refine its teacher and learner resources, as well as its timetable and other structures that affect learning. When the team identifies a new method or resource that they believe will aid learning, they are able to test it within a small group of schools before replicating across the model. For example, in 2015, Bridge tested a mathematics peer-mentoring program where grade 5 students tutor grade 1 students in math for 35 minutes every day. The individualized learning led to a 10 percent rise in math scores for the grade 1 students, while the older children learned leadership and social responsibility skills and improved their self-confidence. By using this learning about learning in different models, Bridge believes it could have a significant effect on global education.

Securing support for the vision

Initial financial investment in Bridge was crucial, but even more critical was securing flexible funding from the company's initial investors—including Bill Gates, Pierre Omidyar, and Mark Zuckerberg—to support the idea behind Bridge and to scale its vision. According to Shannon May, co-founder of Bridge, many prospective investors wanted the company to already have built one school at least before investing in the company—that is, investors wanted Bridge to prove that its model worked before going to scale. But what made Bridge unique was that its leadership wanted to build a chain of thousands of schools serving millions of students from the outset; Bridge wanted to start at scale (Buchannan 2014). The company had to win over investors who were willing to take such risks. This meant it was not whether Bridge had settled on a proven model, but rather whether Bridge's leadership could persuade investors that the company had the ability to innovate, to replicate its model, and to scale its intervention. Building support in the company was thus an essential asset for partnerships. As one investor in Bridge shared, "we bet on the jockeys, not the horse" (Bridge investor, interview by Jenny Perlman Robinson, April 22, 2015).

Interestingly, Bridge's approach to forging key relationships with venture capitalists and other important multilateral donors appears to stand in contrast with its approach to engaging global civil society actors, which includes some of Bridge's harshest and loudest critics. Bridge appears to have focused more on engaging closely with parents, community members, and local government, rather than spending time cultivating relationships or dialoguing with civil society actors, especially those critical of its approach, about their work in raising a standard minimum level of quality and creating opportunities to learn where there were not otherwise. While this approach has helped to increase local user demand, it has done little by way of making things easier for the company at the global level.

Identifying opportunities aligned with the mission

As mentioned earlier, when Bridge began its first phase of international expansion in 2015, it had not originally planned to open schools in Nigeria. However, it responded to a DfID request for bids to improve learning outcomes in the private market for education, a market serving more than 1 million children in Lagos, alone. Bridge now works in Lagos as part of a government-sanctioned program, which itself was a result of a multiyear relationship between DfID and the Lagos State Ministry of Education.

In 2015, President Ellen Johnson-Sirleaf created the Partnership Schools for Liberia program, where education service providers are contracted to operate public schools on behalf of the government, financed jointly by external

donors and by the government, at no charge to children's families. After several months of engagement with the Liberian government, including a visit to Bridge schools in Kenya, Bridge agreed to pilot 50 schools and become a public school operator in the country. However, it has yet to be seen to what extent Bridge will need to deviate from its original model to adhere to government demands, and if in turn this will affect the quality or innovation of the schools it is operating. Additionally, given that the Partnership Schools for Liberia program offers school at no cost to students' families, the pilot in Liberia may uncover some insights about the impact of Bridge's model on the poorest children—those who would have been unable to access school had a fee been required to be paid by parents.

Lessons learned

- Bridge's *standardized model* provides a highly structured, technology-driven approach to providing access to low-cost private schooling for hundreds of thousands of children living in poverty in Sub-Saharan Africa and soon South Asia. The model enables Bridge to keep costs low, to open new academies quickly, and to maintain a minimum standard level of quality across all of its academies.

- From the beginning, Bridge has been thoughtful about what its intervention would look like and *how the company would function at scale*. The company built and ran its first academy as though it were its 100th academy, investing heavily in research and development from the outset to ensure that the quality of education students received is the same no matter how large the company grows.

- Also critical early on was the *support of the company's initial investors* in Bridge's underlying vision to provide opportunities for children living in poverty to learn. Unlike what most investors are comfortable with, Bridge's vision to start at scale meant the company had to win over investors who were willing to take such risks.

- Bridge treats education as a market—with its students and their families as its customers—which has allowed the company to amortize investment in quality over a large number of academies; that is, to *use volume to drive down costs*. This approach has also enabled the company to invest heavily in research and development to create systems that produce learning outcomes.

- Bridge achieved functional scale early on after learning that it is more cost-effective to *execute every step of the education lifecycle in-house* (i.e., academy construction, teacher training, material procurement, management of payment systems, curriculum development). Bridge has found that it can both maintain quality and keep costs down by bringing every aspect of the supply chain under its own roof. This also has enabled Bridge to roll out any changes in its intervention across its network of more than 450 academies nearly instantaneously.

- Bridge *leverages technology* to improve its operational efficiencies. It has made all of its academies "cash free" by automating payments (including tuition payments from families and salary payments to teachers and academy managers), which not only has increased efficiencies, but also has reduced opportunity for corruption.

- Bridge's use of technology enables it to *collect vast amounts of data in real time* that can be used to continuously drive improvements. In addition, teachers receive continuous training and support from professional development coaches on how best to utilize data and results from student assessments in their teaching.

- It uses *"lesson scripts"* designed by education experts and delivered to teachers via tablets to help its cadre of new and often inexperienced teachers to deliver a minimum standard of quality education. Teacher tablets also unburden teachers from a range of administrative tasks, allowing them more time to focus on students who needed more attention. The challenge for Bridge will be whether it can build in flexibility into its model to allow its teachers to begin to shed the "scaffolding" provided by the scripts as they become more experienced.

- Bridge has *improved accountability to parents* through several different accountability mechanisms, including a 24-hour customer hotline, ongoing surveys, charging a tuition fee, and other measures involving parent-teacher associations. *Teacher accountability* has increased through comprehensive training and resources, a solid support system performance-based bonuses, and tracking of attendance and task timeliness through teacher tablets. Unannounced in-person class visits by academy managers and academy operations officers, as well as continuing training by professional development coaches also has helped to ensure and to maintain a minimum quality of teaching.

References

Andrabi, Tahir, Jishnu Das, Asim Ijaz Khwaja, Tara Vishwanath, and Tristan Zajonc. 2007. *Pakistan: Learning and Educational Achievements in Punjab Schools (LEAPS).* Lahore: Learning and Educational Achievements in Punjab Schools. Accessed on June 29, 2016 from http://www.leapsproject.org/assets/publications/LEAPS_Report_FINAL.pdf.

Banerjee, Abhijit V., Shawn Cole, Esther Duflo, and Leigh Linden. 2007. "Remedying Education: Evidence from Two Randomized Experiments in India." *Quarterly Journal of Economics* 122, no. 3: 1235-64.

Bereiter, Carl and Siegfried Engelmann. 1966. *Teaching Disadvantaged Children in Preschool.* Englewood Cliffs, NJ: Prentice-Hall.

Bold, Tessa, Mwangi Kimenyi, Germano Mwabu, and Justin Sandefur. 2013a. *The High Return to Private Schooling in a Low-Income Country.* Africa Growth Initiative Working Paper 5. Washington, DC: The Brookings Institution.

Bold, Tessa, Mwangi Kimenyi, Germano Mwabu, Alice Ng'ang'a., and Justin Sandefur. 2013b. *Scaling Up What Works: Experimental Evidence on External Validity in Kenyan Education.* Working Paper 321. Washington, DC: Center for Global Development.

Bridge International Academies. 2013. "The Bridge Effect: Comparison of Bridge Pupils to Peers at Nearby Schools." White paper. EGRA-EGMA Evaluation Programme.

Bridge International Academies. 2016. "The Bridge Effect: A Comparison of Early Grade Learning Gains in English and Maths. 2013-14 Impact Evaluation Results." Working paper. Accessed June 22, 2016 from http://www.bridgeinternationalacademies.com/wp-content/uploads/2016/06/The-Bridge-Effect_Working-Paper-Draft-V4_Website.pdf.

Buchannan, Leigh. 2014. "The Mission: Teach 10 Million Kids—and End Poverty." *Inc.* Accessed April 7, 2016 from http://www.inc.com/audacious-companies/leigh-buchanan/bridge-international-academies.html.

Commeyras, Michelle. 2007. "Scripted Reading Instruction? What's a Teacher Educator to Do?" *Phi Delta Kappan.*

Ede, Anita. 2006. "Scripted Curriculum: Is It a Prescription for Success?" *Childhood Education* 83, no. 1: 29-32.

Friend, Jamesine. 1989. "Interactive Radio Instruction: Developing Instructional Methods." *British Journal of Educational Technology* 20, no. 2: 106-114.

Gibson, Alan, Sarah Barlow, Roger Cunningham, and Joanna Harma. 2011. *Support to Low Fee Private Sector Education: Scoping Mission Report.* Durham, United Kingdom: Springfield Centre and Mountjoy Research Centre.

Glennerster, Rachel, Michael Kremer, Isaac Mbiti, and Kudzai Takavarasha. 2011. "Access and Quality in the Kenyan Education System: A Review of the Progress, Challenges and Potential Solutions." The Abdul Latif Poverty Action Lab (J-PAL) and Innovations for Poverty Action (IPA).

Herbling, David. 2015. "Ministry Stops Expansion of Low-Cost Schools," *Business Africa Daily*. Accessed April 7, 2016 from http://www.businessdailyafrica.com/Kenya-stops-expansion-of-Bill-Gates-backed-chain-of-schools/-/539546/2883462/-/8ltOtq/-/index.html.

Khandkher, Shahidur. 1996. *Education Achievements and School Efficiency in Rural Bangladesh*. World Bank Discussion Paper 319. Washington, DC: World Bank.

Kim, Jooseop, Harold Alderman, and Peter Orazem. 1998. *Can Cultural Barriers Be Overcome in Girls' Schooling? The Community Support Program in Rural Balochistan.* Working Paper on Impact Evaluation of Education Reforms 10. Washington, DC: World Bank.

Ngware, Moses, Benta Abuya, Kassahun Admassu, Maurice Mutisya, Peter Musyoka, and Moses Oketch. 2013. *Quality and Access to Education in Urban Informal Settlements in Kenya.* Nairobi, Kenya: African Population and Health Research Center.

Nilsson, Paula. 2003. "Education For All: Teacher Demand and Supply in Africa." Education International Working Paper 12. Brussels: Education International.

Rangan, V. Kasturi, and Katharine Lee. 2010. "Bridge International Academies: A School in a Box." Harvard Business School Case Study.

Rugh, Andrea. 2000. *Starting Now: Strategies for Helping Girls Complete Primary.* SAGE Project. Washington, DC: Academy for Educational Development.

Tooley, James, Pauline Dixon, and James Stanfield. 2008. "Impact of Free Primary Education in Kenya: A Case Study of Private Schools in Kibera." *Educational Management Administration and Leadership,* 36 no. 4: 449-469.

UNESCO. 2014. *Teaching and Learning: Achieving Quality for All.* EFA Global Monitoring Report 2013/4. Paris: UNESCO.

Uwezo. 2013. *Are Our Children Learning? Literacy and Numeracy Across East Africa.* Nairobi, Kenya: Uwezo East Africa. Accessed April 25, 2016 from http://www.uwezo.net/wp-content/uploads/2012/08/2013-Annual-Report-Final-Web-version.pdf.

World Bank. 1997. *Pakistan: New Approaches to Education—The Northern Areas Community School Program.* Washington, DC: World Bank.

World Bank. 2005. *Improving Educational Quality through Interactive Radio Instruction: A Toolkit for Policymakers and Planners.* Africa Region Human Development Working Paper Series. Washington, DC: World Bank.

World Bank. 2013. "Service Delivery Indicators: Education and Health." Washington, DC: The World Bank. Accessed April 25, 2016 from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/07/25/000442464_20130725101359/Rendered/PDF/794420REVISED00untryReportOwAuthors.pdf.

World Bank and UNICEF. 2009. *Abolishing School Fees in Africa: Lessons from Ethiopia, Ghana, Kenya, Malawi, and Mozambique.* Washington, DC: The World Bank.

Endnotes

1. http://www.kenya-today.com/news/2014-kcpe-results-candidates-top-students, accessed April 25, 2016.
2. According to the World Bank, as of 2005, 45.9 percent of the population in Kenya live on less than $1.25 a day—the official UN poverty line (http://povertydata.worldbank.org/poverty/country/KEN, accessed April 19, 2016).
3. Some researchers estimate that households living in poverty are willing to spend between 4.7 percent and 8.1 percent of their monthly income on education, (Tooley, Dixon, and Stanfield 2008)
4. http://data.worldbank.org/indicator/SE.PRM.PRIV.ZS, accessed April 19, 2016.
5. https://nonprofitquarterly.org/2015/10/06/fees-and-inequality-in-the-kenyan-school-system/, accessed April 22, 2016; http://www.standardmedia.co.ke/article/2000156351/irony-of-empty-classrooms-in-nairobi-schools, accessed April 22, 2016.
6. See for example, http://globalinitiative-escr.org/wp-content/uploads/2015/05/May-2015-Joint-letter-reaction-letter-to-WB-statement-on-Bridge-13.05.2015.pdf, accessed August 24, 2015.
7. http://globalinitiative-escr.org/wp-content/uploads/2015/05/May-2015-Joint-letter-reaction-letter-to-WB-statement-on-Bridge-13.05.2015.pdf, accessed August 24, 2015.
8. Headquarters includes five departments: School operations (which includes the central support team that directly supports academy managers); Finance, operations, and administration; Land acquisition and construction; Instruction (curriculum and teacher training); and Research and marketing.
9. According to Bridge, the teacher absenteeism rate is actually lower—0.8 percent—because of its substitute teacher pool that is tapped into to account for any teacher absences (personal communication between Lucy Bradlow and Christina Kwauk, June 17, 2016).
10. EGRA has been applied in 11 countries and in 19 languages, as well as adopted by other implementing partners in more than 30 other countries and in more than 60 other languages (https://www.eddataglobal.org/reading/, accessed July 1, 2016). EGMA has been applied in four countries and in six languages; it has been adopted by other implementing partners in seven other countries and in five other languages (https://www.eddataglobal.org/math/, accessed July 1, 2016).
11. Because government schools were not entirely randomly selected—an unknown number was selected by DMC in the event that randomly selected government schools were unwilling or unable to participate and the list of schools was exhausted—it is difficult to determine the validity of this comparison.
12. http://www.bridgeinternationalacademies.com/, accessed May 2, 2016.
13. See for example https://medium.com/learning-re-imagined/education-in-africa-1f495dc6d0af#.lu75h8xyq, accessed June 21, 2016; http://www.brookings.edu/blogs/future-development/posts/2016/06/29-foreign-aid-private-schooling-education-das, accessed June 29, 2016.
14. www.bridgeinternationalacademies.com/approach/model/, accessed May 6, 2016.
15. www.bridgeinternationalacademies.com/approach/model/, accessed May 6, 2016.

BROOKINGS

1775 Massachusetts Ave., NW
Washington, D.C. 20036
202 797 6000

www.brookings.edu/universal-education