

## RESEARCH BRIEF

# Can Education be Standardized? Evidence from Kenya

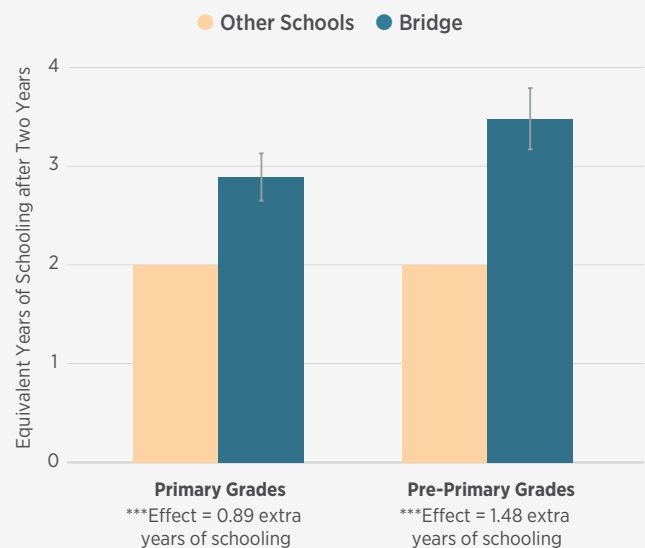
Based on the Working Paper, “Can Education be Standardized? Evidence from Kenya,” by Guthrie Gray-Lobe, Anthony Keats, Michael Kremer, Isaac Mbiti, and Owen Ozier



## KEY TAKEAWAYS

- Kenyan pupils who won a lottery for two-year scholarships to attend schools employing a highly-structured and standardized approach to pedagogy and school management learned more than students who applied for, but did not win, scholarships.
- After being enrolled at these schools for two years, primary-school pupils gained approximately the equivalent of **0.89 extra years of schooling** (0.81 standard deviations), while in pre-primary grades, pupils gained the equivalent of **1.48 additional years of schooling** (1.35 standard deviations).
- The test score effects in this study are among the largest in the international education literature.
- Winning a scholarship had the largest impact on lower-achieving pupils. There were no significant differences by gender or socio-economic status.
- This evidence comes from a randomized evaluation among 25,000 pupils who entered a lottery for one of 10,000 two-year scholarships to Bridge International Academies. The evaluation compares those who were randomly assigned to win a scholarship with those who did not.

## KEY FIGURE · Academic Achievement Outcomes for Pupils in Bridge and Other Schools



Note: 95% confidence intervals are represented by the error bars. \*\*\*, \*\*, and \* indicate statistical significance at 1%, 5%, and 10%.

## Standardizing Education

Standardization is common in many production processes as a way to provide consistent product quality at large scale by using a few highly-skilled workers to provide detailed instructions to many frontline workers who actually manufacture products or deliver services. In education, several studies suggest that one element of standardization, structured pedagogy, typically implemented with detailed lesson guides, improves learning outcomes in early grades.<sup>1,2,3</sup>

Bridge International Academies, which operated more than 400 private schools in Kenya serving more than 100,000 students at the time of the study, standardizes education particularly deeply and broadly. Bridge standardizes lessons across all grades — ranging from “Baby class” (serving three-year-olds) to eighth grade — through centrally-developed and highly-detailed lesson guides that are delivered to teachers using tablet computers. The guides also provide teachers with detailed instructions on classroom management and pupil engagement. Figure 1 shows a typical Bridge lesson guide.

**FIGURE 1** · Sample Bridge Lesson Guide

### Sound Combinations — 5 Minutes

1. **Copy as I write.**

2. **Write on board:**

aim  
rain  
stain  
paint  
sprain

3. **Eyes on me.** Scan

4. **The letters A - I go together and usually make the sound AY, as in AIM.**

5. **Say AY.** [Signal] *AY*

6. **You will read the words that have letters A-I.**

7. **Say the sound for the underlined part, then read the word.**

8. **Touch word 1. What sound?** [Signal] *AY*

9. **What word?** [Signal] *Aim*

10. **Next word. What sound?** [Signal] *Ay*

11. **What word?** [Signal] *Rain*

12. Repeat last 2 lines for each word.

13. **Copy as I write.**

14. **Add to board:**

aimless  
grain  
faint  
plains  
raining

15. **Touch word 1. What word?** [Signal] *Aimless*

16. **Touch word 2. What word?** [Signal] *Grain*

17. Repeat last line for each word.

### Build Ups — 5 Minutes

18. Clean board and write:

lain

19. **Eyes on me.** Scan.

20. **What word?** [Signal] *Lain*

21. Change word:

plain

22. **What word now?** [Signal] *Plain*

23. Change word:

plains

24. **What word now?** [Signal] *Plains*

<sup>1</sup> Piper, B., S. S. Zuilkowski, and A. Mugenda (2014): “Improving reading outcomes in Kenya: First-year effects of the PRIMR Initiative,” *International Journal of Educational Development*.

<sup>2</sup> Piper, B., S. S. Zuilkowski, M. Dubeck, E. Jepkemei, and S. J. King (2018a): “Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers’ guides,” *World Development*, 106, 324–336.

<sup>3</sup> Stockard, J., T. W. Wood, C. Coughlin, and C. R. Khoury (2018): “The Effectiveness of Direct Instruction Curricula: A Meta-Analysis of a Half Century of Research,” *Review of Educational Research*, 88, 479–507.

Bridge also employs standardized monitoring and management procedures. School heads are trained to observe teachers twice daily, recording information on adherence to the detailed teaching plans and interaction with pupils. School heads are given their own detailed scripts for teacher observation, including guidance for preparing for the observation, what teacher behaviors to watch for while observing, and how to provide feedback. School heads are instructed to additionally conduct a 15 minute follow up on the same day to check whether teachers incorporated the feedback and enter their scores through a digital system. The presence of the scripts thus transforms and simplifies the task of classroom observation and provision of feedback to teachers. Bridge also standardizes a range of other processes from school construction to financial management.

## Scholarship Program and Evaluation

In 2016, two-year scholarships were provided to pre-primary and primary-school-aged pupils to attend Bridge schools. The scholarship program was oversubscribed and more than 10,000 scholarships were awarded by lottery. The scholarship increased the probability of going to Bridge schools by one-third, making it possible to estimate the impact of enrolling in Bridge by comparing learning outcomes among pupils who were and were not awarded scholarships. Estimated impacts for pupils who used the scholarship to enroll in Bridge are highlighted in this brief.

To measure outcomes, the study used information collected through phone calls with caregivers and home-based interviews with children. This included information on school enrollment, grade level, national-curriculum-aligned assessment scores, and performance on cognitive and non-cognitive tasks.

## Key Results

After being enrolled at Bridge for two years, primary pupils' test scores were comparable to those among pupils who had been in other schools for 2.89 years, corresponding to a gain of 0.89 equivalent years of schooling, a 0.81 standard deviation within-grade improvement in test scores. Pre-primary pupils gained 3.48 equivalent years of schooling,

an additional 1.48 years (1.35 standard deviations) compared to scholarship non-recipients (Figure 2). 95% confidence intervals are 0.65-1.13 additional years of schooling at the primary level and 1.17-1.79 additional years of schooling at the pre-primary level.

**The test score effects in this study are among the largest in the international education literature, particularly for a program that was already operating at scale. The effects on test scores exceed the 99th percentile of treatment effects of large-scale education interventions.<sup>4</sup>**

For pre-primary grade pupils, enrolling at Bridge increased the probability of being able to read a simple sentence by 30 percentage points relative to a non-recipient mean of 22%, and increased the probability of being able to do a simple addition problem by 19 percentage points relative to a non-recipient mean of 50%.

Enrolling at Bridge improved test scores of lower achieving pupils the most. There were no significant differences in the impact of Bridge enrollment by gender or socio-economic status, however enrolling at Bridge did not affect measured creativity relative to scholarship non-recipients. Scores increased even after removing assessment items that rely primarily on rote memorization.

Enrolling at Bridge increased the probability of timely grade progression after two years by 20 percentage points in primary grades (a 27% increase compared to scholarship non-recipients) and by 19 percentage points in the pre-primary grades (a 26% increase compared to scholarship non-recipients).

Learning gains do not appear to be driven by the impact of the scholarship freeing up resources for additional expenditure. This is evident among families that stated an intention to enroll in Bridge regardless of the scholarship, or which had children previously enrolled at Bridge. For such families

<sup>4</sup> Evans, D. K., & Yuan, F. (2022). How Big Are Effect Sizes in International Education Studies? Educational Evaluation and Policy Analysis.

**FIGURE 2 · Impact on Pupils Who Received the Scholarship and Attended Bridge (Primary Grades and Pre-Primary Grades)**

Outcome	Grade	Average for Pupils Who Did Not Receive the Scholarship	Impact on Pupils Who Received the Scholarship and Attended Bridge
<b>Subject Knowledge Index</b>	Primary	2 Years	↑ 0.89 additional equivalent years of schooling (0.81 standard deviations)
	Pre-Primary	2 Years	↑ 1.48 additional equivalent years of schooling (1.35 standard deviations)
<b>Letters Recognized Per Minute</b>	Pre-Primary	16	↑ 12 more letters
<b>Able to Count Eight Stars</b>	Pre-Primary	83%	↑ 13 percentage points more likely
<b>Timely Grade Progression</b>	Primary	74%	↑ 20 percentage points more likely
	Pre-Primary	73%	↑ 18 percentage points more likely

the scholarship had a very small effect on school choice, and was more likely to act primarily as a price reduction on attending Bridge, yet learning gains were much smaller among pupils from these households. Scholarship receipt does not increase other educational expenditures like private tutoring.

While the study focused on learning outcomes, some limited evidence is available on other areas where concerns have been raised about Bridge, such as teacher qualifications, human resource practices, child safety, and the impact of school fees on access to education.

At the time of the study, Bridge hired teachers with less formal education and experience. Only 23% of Bridge’s primary grade teachers possessed more than secondary school education at the time of the study (this fraction has risen since then). Teachers also worked longer hours due to longer school days and more Saturday school. Total teacher compensation

in Bridge schools was roughly \$116 per month, between one-fifth and one-third of the monthly compensation for civil-service teachers in public schools and roughly comparable to that of teachers in other private schools serving this population.

Primary school pupils who used the scholarships to enroll at Bridge were eight percentage points more likely to report that their playing fields have hazards, compared to 34% of scholarship non-recipients. Pupils report high levels of corporal punishment across our data, with 83% of scholarship non-recipients reporting that their teachers engaged in corporal punishment and a marginally statistically significant six percentage points estimated reduction from enrolling in Bridge.<sup>5</sup> Among scholarship non-recipients, primary school students at Bridge were more likely to report missing school due to the inability to pay fees than at public schools, although the prevalence of missing school was similar in Bridge and other private schools.

<sup>5</sup> The difference is only statistically significant at the 10 percent level.

## Developments Subsequent to the Study

Since the study, the Kenyan government introduced a new Competency Based Curriculum (CBC) in primary schools, emphasizing a broad set of skills, learner-centered instruction, and parental engagement. The government additionally launched a structured pedagogy program in 2015 to help improve early grade learning in foundational subjects.

Bridge has also dramatically changed its business strategy. Bridge's parent company, NewGlobe, shut down most of its private schools in Kenya and now overwhelmingly works as a service provider to governments operating public schools. In this new model, NewGlobe works with teachers hired and managed by governments under standard civil-service contracts who receive standard civil-service compensation, and the government, rather than parents, pay for NewGlobe's services.

## Conclusion

This study shows that attending schools delivering highly standardized education has the potential to produce dramatic learning gains at scale, suggesting that policymakers may wish to explore incorporation of standardization, including standardized lesson plans and teacher feedback and monitoring, in their own systems.

Since the effects of standardization in education could vary between public schools and Bridge private schools, with their very different human resource policies, efforts to introduce more structure into public education systems should be accompanied by careful monitoring and evaluation.

## ABOUT THE SCHOLARS



### **Guthrie Gray-Lobe**

*Postdoctoral Scholar and Lead Researcher, Development Innovation Lab at the University of Chicago*



### **Anthony Keats**

*Associate Professor, Economics Department, Wesleyan University*



### **Michael Kremer**

*University Professor, UChicago's Kenneth C. Griffin Department of Economics and Harris Public Policy; Director, Development Innovation Lab at the University of Chicago*



### **Isaac Mbiti**

*Associate Professor of Public Policy and Economics, Frank Batten School of Leadership and Public Policy, University of Virginia*



### **Owen Ozier**

*Associate Professor, Department of Economics, Williams College*

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