Kimany-Ngeyo Foundation

Teacher Professional Development in East Africa

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Kimanya-Ngeyo Foundation for Science and Education

- Founded in 2007, Kimanya works with diverse sets of individuals—students, teachers, farmers, young mothers, among others—to develop their capacity to generate, apply, and diffuse relevant knowledge for the development of local communities across Uganda.

- Utilizes FUNDAEC’s Preparation for Social Action (PSA) and Discourse on Social Action (DSA) educational programs.

- In 2015, Kimanya tailored its educational programs to provide a “general skills” training for primary school teachers.

- Kimanya’s teacher professional development program has now trained more than 800 teachers across hundreds of primary schools in two districts.
Educational Context: Uganda

• In Uganda, as with much of East Africa, the past decade and a half has been characterized by efforts to improve the quality of teaching and learning in schools (in response to enrolments gains after UPE)

• “[B]uilding on the gains in access to education, the international community’s focus has shifted to the challenge of improving education quality and learning.” (Vavrus, Thomas, & Bartlett 2011)

• The need to ensure that children receive quality teaching and actually learn was highlighted in 6 EFA goals and has been a running theme throughout 15 annual EFA Global Monitoring Reports (Hardman, 2017)
Why Focus on Teacher Professional Development?

- Teachers have a central role to play in improving educational outcomes and should be supported to engage with and lead reform efforts (Darling-Hammond et. al., 2009)

- 21st century skills—critical thinking, problem solving, creativity, metacognition, communication, digital and technological literacy, civic responsibility, and global awareness—require appropriately trained teachers (Kim, Raza, & Seidman, 2019)
Challenges in Teacher PD: East Africa

• Vavrus, Thomas, Bartlett, 2011:

(1) Teachers largely teach the way they were taught
(2) Teachers are typically evaluated on the extent to which their lesson plans, methods, and techniques demonstrate “technical rationality” model of transmitting knowledge “correctly” (vs. a reflective practitioner model)
(3) “Tutors may have excellent knowledge of the content of their courses, such as history or chemistry, but have limited understanding of how to teach content using methods appropriate to their subjects and contexts”
(4) Teachers’ practical concerns about curricular and pedagogical shifts are not given due consideration
Kimanya-Ngeyo and Teacher Development

• Since 2015, Kimanya has run a year-long, in-service, general skills training that exposes teachers to a capabilities-centered approach to learning as advanced within the materials of the PSA and DSA programs.

• Trainings are not subject specific, nor aimed at training for a specific skill, innovative method, etc.

• The broad objective of these trainings is to engage teachers in study and reflection on the purpose of education, and how to develop approaches to teaching and learning that are coherent with the aims that emerge from their reflections.
Kimanya-Ngeyo and Teacher Development, cont’d…

• Yearlong training involves three, 11-day sessions divided among holidays, each centering on study of—and accompanying practical activities stemming from—three FUNDAEC materials.

• Over the course of the year, teachers complete educational materials ranging in theme from language development, to the application of the methods of science, early child education, placing events in their historical context, environmental issues, small-scale food production, engaging in social action, and examining the aims and core concepts of FUNDAEC’s educational programs.
PSA: The Concept of a Capability

• According to FUNDAEC, a capability is conceived as…
  • A “developed capacity to think and act in a particular sphere of activity and according to an explicit purpose”
  • Not something a student has or does not have, but “something that one develops progressively as one acquires a set of interrelated skills, assimilates relevant information, advances in the understanding of the relevant concepts, and develops certain attitudes, habits and spiritual qualities.”
  • “Examples of highly desirable capabilities are those of making organized observations of phenomena, of seeking patterns in data gathered about a phenomenon, and of designing experiments to test a hypothesis. Participating effectively in community consultation is a crucial capability in the social realm, as is the capability of participating in collective enterprises.”
PSA: The Enhancement of Understanding

• Teachers come to appreciate diverse objects of understanding, and reflect on the appropriateness and applicability of differing tools for enhancing understanding such as analysis and placing things in larger contexts

• Teachers learn to recognize the difference between assimilation of knowledge and understanding of concepts

• Teachers gain *practical* understanding of effective strategies for fostering understanding of curricular content—something that can only be developed over time
PSA: Evidence from an Ongoing RCT

• Ashraf, Banerjee, Nourani, 2020: “Learning to Teach by Learning to Learn”
  • Randomly selected 15 out of 29 primary schools in a single division of Jinja City for treatment
  • Kimanya invited 100 upper primary teachers to participate in the training across the two years. 42 teachers attended a portion of the intense sections of the training in the first year and 46 attended a portion of the second training.
  • Instruments: survey data, classroom observations, school administrative data, researcher administered student assessment, “science shows” held in collaboration with District Education Office, and Uganda National Examination Bureau Data
Student & Classroom Impact: Traditional vs HOT

• Findings from the study can be grouped into two categories.

1. Traditional study methods:
   a. Primary Leaving Examination (PLE) results
   b. Classroom observations (Stallings)

2. Higher Order Thinking (HOT) methods:
   a. Researcher designed examination-style questions
   b. Science shows
Student & Classroom Impact: PLE Results

(A) Primary Leaving Exam (PLE) Pass Rate

(B) Distribution of Standardized PLE Score

(Ashraf, Banerjee, Nourani, 2020)
Effectiveness
Relative to Traditional Learning in Other Education Interventions

(Ashraf, Banerjee, Nourani, 2020)
## Student & Classroom Impact: HOT

### Hypotheses:

<table>
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<tr>
<th>Hypotheses:</th>
<th>Higher Order Learning</th>
<th>Creativity</th>
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<tbody>
<tr>
<td><strong>Outcome Variables</strong></td>
<td>Apply/Understand</td>
<td>Critical Thinking</td>
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<tr>
<td><strong>Treatment (ITT)</strong></td>
<td>0.73***</td>
<td>0.45**</td>
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<td></td>
<td>(0.14)</td>
<td>(0.16)</td>
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<tr>
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<td>[0.01]±±</td>
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<td>[0.05]</td>
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<td><strong>Pair FE</strong></td>
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<tr>
<td><strong>Enum FE</strong></td>
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### Source of Data

<table>
<thead>
<tr>
<th>Unit of Observation</th>
<th>Student Assessment</th>
<th>Student Assessment</th>
<th>Student Survey</th>
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<tbody>
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<td><strong>P6 Student</strong></td>
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<td><strong>Control School Mean</strong></td>
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<tr>
<td><strong>Estimator</strong></td>
<td>OLS</td>
<td>OLS</td>
<td>Tobit</td>
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(Ashraf, Banerjee, Nourani, 2020)
Evidence from Ongoing Studies: Key takeaways

- Evidence thus far suggests that Kimanya’s “general skills” training has robust impact on student learning
- Additional findings include: teachers are more prepared for their lessons; rapport with students improving; increased student attention, increased attendance; teachers less likely to skip classes, avoid teaching; teachers have improved on content; lessons are planned to involve students; increased collaboration between teachers in the school; parents are showing appreciation for changes; relationship between teachers and parents is improving
Cost Effectiveness

**Cost-Effectiveness**

LAYS — Learning Adjusted Years of Schooling (Angrist et. al, 2020)

(Ashraf, Banerjee, Nourani, 2020)
Next Steps

• Primary School RCT is currently in its third year, and has expanded from one to four regions in Jinja City/District

• Kimanya is launching a secondary teacher intervention in two regions this year with an accompanying study

• Kimanya is exploring multiple paths to scaling our program

• A robust and complimentary qualitative investigation will be implemented over the coming years
Cited Sources


• FUNDAEC (2008). A Discourse on Social Action: Education. Cali, Colombia: FUNDAEC.
THANK YOU
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