Experimental Impacts of the ‘Quality Preschool for Ghana’ Intervention: Implications for System-level Reform

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Outline

Part I: Background
- Early childhood education
- The Ghanaian context
- Quality Preschool for Ghana (QP4G)
- Research design and Theory of change

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- Children’s school readiness
- Differences in public and private schools and child characteristics

Part III: Conclusions & Next Steps
Early childhood education (ECE)

• Early behavioral and social skills have lifelong consequences for children.

• Potential return on ECE investment is large.

• Emotional climate of ECE classrooms: important for early adjustment and learning.
The policy context in Ghana

• The 2012 GES report that the 2004 KG curriculum is sound, but that teacher behavior has not adapted to reflect new pedagogy.

• Top priority: Train 27,000 untrained teachers in KG-specific pedagogy.

• Another priority: engaging parents in schools and raising their awareness of KG-specific pedagogy.

• Private schools must comply with the national curriculum and standards.
Quality Preschool for Ghana (QP4G)

• In partnership with Ghana Education Service, National Nursery Teacher Training Center, University of Pennsylvania, NYU and Innovations for Poverty Action:

• Develop and test a *nationally scalable* model for teachers and parents with the goal of improving KG quality and children’s school readiness.
The In-Service Teacher Training Program

• 5 days in September, followed by refresher trainings in January (2 days) and May (1 day) implemented by NNTTC trainers.
• Classroom visits paired with monitoring / feedback from district coordinators.

5 areas:
(1) How children learn—developing a child-friendly environment
(2) Classroom management
(3) Integrating play into language and literacy instruction
(4) Integrating play into early numeracy instruction
(5) Assessment and planning
The Parental Awareness Program

• 3 sessions (1/term) held at school PTA meeting, open to all parents with KG children. Parental awareness training about KG learning.

• Video screening followed by discussion, led by district coordinators, focused on (1) play-based learning, (2) parents’ role in child learning, and (3) encouraging parent-teacher and parent-school communication.
QP4G: Research design

6 disadvantaged districts in the Greater Accra Region

240 KG schools (108 public and 132 private)

Randomization

79 (35 public, 44 private)
Control group

82 (36 public, 46 private)
T1
Teacher training and coaching program

79 (37 public, 42 private)
T2
Teacher training and coaching program
Parental awareness about KG learning

Summer of 2015
QP4G Theory of Change

Intervention

Teacher training + Monitoring/support

Classroom-level mediators

Classroom Quality

Teacher professional well-being

Child outcomes

School readiness

2015-16 academic year

September 2015 (baseline), June 2016 (follow up 1), June 2017 (follow up 2)
Part II: Impacts of QP4G
Measures

1. Classroom quality – implementation and quality
2. Teacher professional well-being
3. Teacher attrition
4. Child school readiness

Impacts are assessed:
• End of implementation year
• One year later
Implementation: Are teachers integrating practices from the training in their classroom?

Checklist with 15 teaching practices that were in the training. For example:

Teacher praises children for positive behavior
Teacher threatens children with or uses a cane on children at least once
Teacher explicitly reminds children of the class rules
Teacher asks students at least two open-ended questions during the class

Teacher uses one or multiple songs to facilitate learning
The lesson consists of a game that facilitated the lesson objectives
Teacher incorporates found items as Learning Materials (e.g., bottle caps, milk cartons)
Teachers integrate training practices in their classrooms

Teachers were videotaped teaching for 30-45 minutes.

On average, teachers in both treatment conditions implemented **1.5 additional “developmentally appropriate” activities** during the observed period of teaching practice.

<table>
<thead>
<tr>
<th>Number of activities observed</th>
<th>Control</th>
<th>TT</th>
<th>TTPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>3.2</td>
<td>4.6***</td>
<td>4.8***</td>
</tr>
</tbody>
</table>

TT= Teacher training; TTPA = Teacher training + Parental awareness training
Classroom quality: Does QP4G improve the quality of teacher-child interactions?

Developed based exploratory and confirmatory factor analysis, we assess impacts on three dimensions of classroom quality.

**Facilitating deeper learning**
- Scaffolding (concept development)
- Quality of feedback
- Objectives explicit

**Emotional support & behavior management**
- Positive climate
- Negative climate
- Teacher sensitivity/tone
- Behavior management
- Consistent Routine

**Supporting student expression**
- Student ideas considered
- Reasoning/problem solve
- Connections to life
- Language modeling

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QP4G improves the quality of some teacher-child interactions

![Graph showing effect sizes for different dimensions of classroom quality.](chart.png)
Teacher professional well-being: Does QP4G improve teacher well-being?

Developed based on both new and previously validated survey measures, and analyzed using factor analysis:

- **Motivation** (5 items, $\alpha = 0.64$) - Adapted from Bennell & Akyeampong (2007)
  - I'm highly motivated to:
    - help children learn to read and write
    - help children develop well socially

- **Burnout** (11 items, $\alpha = 0.85$) - Maschlach Burnout Inventory (Maschlach et al., 1996)
  - How often have felt mentally drained from your work.
  - How often do you feel fatigued when you wake up in the morning.

- **Job dissatisfaction** (4 items, $\alpha = 0.72$) - Adapted from Bennell & Akyeampong (2007)
  - I want to transfer to another school
  - I want to leave the teaching profession

Developed based on both new and previously validated survey measures, and analyzed using factor analysis:

- **Effect Size ($d_{w0}$)**
  - Motivation: $0.35$
  - Burnout: $-0.40^*$
  - Job Satisfaction: $0.22$

- **Effect Size ($d_{w0}$)**
  - Motivation: $0.12$
  - Burnout: $-0.55^{***}$
  - Job Satisfaction: $-0.13$

- **Effect Size ($d_{w0}$)**
  - Motivation: $0.22$
  - Burnout: $-0.13$
  - Job Satisfaction: $0.00$

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Teacher attrition: Does QP4G reduce the likelihood that teachers’ leave the school mid-year?

**YES**

Notably, this occurred entirely in the private sector.

The probability of a teacher leaving the school in the private sector was reduced by 82%.
QP4G improves children’s school readiness, primarily social-emotional development
Differences by public and private sectors

- In the 9 outcomes assessed, we find two significant differences in public and private sector schools:
  - Impacts on reduced teacher burnout are larger in private schools.
  - Impacts on reduced teacher attrition occur in private schools only.

- **No major differences** in how QP4G impacted classroom quality and children’s outcomes in public or private schools.
- But significant differences in improving teacher well-being.
One year later: Teachers are still using some of the training practices, but other impacts have faded out or become negative.
One year later: Impacts on social-emotional outcomes sustained

School readiness  Early numeracy  Early literacy  Social-emotional  Executive function

-0.060  -0.04  -0.004  0.01  -0.060
Conclusions

• QP4G is one of the first impact evaluations in sub-Saharan Africa to show an in-service teacher training can improve KG quality and school readiness.

• The important role of refresher trainings and coaching visits is consistent with research in high-income country contexts.

• Findings are consistent with related research, which find medium to large effects on classroom process quality and a small effects on child outcomes.

• It would be important to assess if these effects persist to support children’s transition to primary school.

• QP4G took place in the peri-urban communities. It is critical to consider if and how different contexts would require adaptations to ensure program success.
Next steps

• Follow children for one more year as they transition into primary school (ongoing this academic year).

• Understand the counteracting effects of the parent-awareness intervention.

• Complete a cost analysis of the program and assess its implications for policy. Current resource cost estimates are $841.66, $402.10, and $16.08 per school, teacher, and child respectively.

• Consider needs of and adaptations for rural areas in Ghana, where teaching quality and learning is generally lower than peri-urban and urban areas.
Implications for Policy

1. **Recommendations for in-service teacher trainings in general:**
   Brief, affordable in-service, teacher training can be successful if teachers are given ongoing support and messages are reinforced throughout the year.

2. **Teachers continue to use some training activities one year later, but some aspects of classroom quality decrease.**
   - This highlights the importance of the monitoring and coaching visits in supporting improved classroom quality, in addition to the need for ongoing annual professional development.

3. **Parental engagement counter-acted the impact of the teacher training**
   - Parent engagement is valuable. However, a more intensive approach may be needed.
   - Careful attention should be paid to how parents interpret messages and who would best deliver them. Positive impacts should not be assumed.
Thank you

• Ghana Education Service
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