Relationships Between Coach Support and Teacher Instructional Practices

Preliminary Findings from the Nigeria Reading and Access Research Activity (RARA)

Karon Harden
kharden@rti.org
Project Background and Research Questions
Background on RARA

The Nigeria Reading and Access Research Activity (RARA) was a USAID-funded research project implemented by RTI International in northern Nigeria from 2014 to 2015.

**Component 3**

An early grade literacy intervention in the Hausa language for 2nd grade classes in 60 schools in two states

**Each teacher received:**
- Materials (e.g., teacher’s guide, student textbooks)
- Training, ongoing PD, and pedagogical support by coaches

**Each coach received:**
- Training and ongoing support by RARA staff
Research Questions

1. What is the relationship between coach background and coach quality?

2. What is the relationship between coach background and the teacher instructional practices?

3. What is the relationship between the quantity of coach visits and the teacher instructional practices?

4. What is the relationship between the coach quality and the teacher instructional practices?
Data Sources and Relationship Analyses

Participants
46 Primary Grade 2 Hausa teachers (36 M, 10 F) in 46 schools in two states
18 coaches (17 M, 1 F)

Coach Background
Interview recording coaches’ highest academic credential and years of prior experience as a teacher, head teacher, and coach

Coach Quality
Mean scores from 45 observations by RARA staff of coach-teacher visits in February 2015

Quantity of Coach Visits
Record of the number of coach visits received by each teacher from December 2014 to July 2015

RQ1
RQ2
RQ3
RQ4

Teacher Instructional Practices
Scores from the classroom observations of teachers at baseline (November 2014) and endline (June/August 2015) recording their implementation of key instructional practices; examined in terms of gains (endline minus baseline)
Factor analysis of the teacher instructional practices variables revealed 2 distinct and largely unrelated underlying constructs, which together accounted for 80.53% of the variability in the teachers’ practices. We labeled these factors “Phonics” and “Text.”

**Factor 1: “Phonics”—related instruction, i.e. focus on letter-sound relationships, decoding, and encoding**

- **Phonics**: 46.57% variability
- **Text**: 33.97% variability

**Factor 2: “Text”—related instruction, i.e. a focus on listening to, reading, and comprehending connected text**
Data: Teacher Gains in Instructional Practice

Percentage of teachers observed implementing:

1. Teacher presenting letter sounds: 100.0% (Baseline), 100.0% (Endline)
2. Pupils practice letter sounds: 23.9% (Baseline), 23.9% (Endline)
3. Manipulating syllables: 65.2% (Baseline), 45.7% (Endline)
4. Writing letters & words: 78.3% (Baseline), 87.0% (Endline)
5. Teacher reading a passage out: 15.2% (Baseline), 19.6% (Endline)
6. Students reading a passage: 87.0% (Baseline), 91.1% (Endline)
7. Teacher asking comprehension: 19.6% (Baseline), 34.8% (Endline)
8. Students' eyes on text: 2.2% (Baseline), 80.4% (Endline)
9. Teacher checking progress: 19.6% (Baseline)
Similarly, factor analysis of the coach observation variables also revealed 2 distinct underlying constructs, which together accounted for 91.8% of the variability in the coaches’ performance. We labeled these factors “Rapport” and “Reflection.”

Factor 1: “Rapport”—i.e., positive aspects of the interaction between coach and teacher

Factor 2: “Reflection”—i.e., thinking critically together about current performance and planning for improvement
Findings and Discussion
Results: RQ1. What is the relationship between coach background and coach quality?

<table>
<thead>
<tr>
<th>Positive Associations</th>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach’s highest academic credential</td>
<td>Coach’s highest academic credential</td>
<td>Coach quality in rapport</td>
<td>( p &lt; 0.01 )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coach quality in reflection</td>
<td>( p &lt; 0.01 )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coach quality in general</td>
<td>( p = 0.001 )</td>
</tr>
<tr>
<td>Coach’s years of experience as a teacher</td>
<td>Coach’s years of experience as a teacher</td>
<td>Coach quality in rapport</td>
<td>( p &lt; 0.10 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negative Associations</th>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach’s years of experience as a head teacher</td>
<td>Coach’s years of experience as a head teacher</td>
<td>Coach quality in rapport</td>
<td>( p &lt; 0.10 )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coach quality in reflection</td>
<td>( p = 0.001 )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coach quality in general</td>
<td>( p &lt; 0.01 )</td>
</tr>
<tr>
<td>Coach’s years of experience as a coach</td>
<td>Coach’s years of experience as a coach</td>
<td>Coach quality in rapport</td>
<td>( p &lt; 0.10 )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coach quality in reflection</td>
<td>( p &lt; 0.10 )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coach quality in general</td>
<td>( p &lt; 0.05 )</td>
</tr>
</tbody>
</table>
Results: RQ2. What is the relationship between coach background and teacher instructional practices?

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach’s years of experience as a teacher</td>
<td>Teacher gains in phonics</td>
<td>$p &lt; 0.10$</td>
</tr>
<tr>
<td></td>
<td>Teacher gains in general</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Coach’s years of experience as a coach</td>
<td>Teacher gains in general</td>
<td>$p &lt; 0.05$</td>
</tr>
</tbody>
</table>
Discussion: Associations with Coach Background

What kind of background makes the best coach?

In our sample, the coaches with higher credentials scored better on our measures of coach quality, but their level of credentials had no discernible effect on their teachers’ practices.

Our coaches’ prior experience as a head teacher or as a coach was negatively associated with coach quality, …

but their prior experience as a coach and as a teacher (but not as a head teacher) was positively associated with improvements in their teachers’ practices.

These results suggest that the best candidates for new coaches in this context are those with the highest credentials and most prior experience as a teacher – and maybe as a coach – but not as a head teacher.
Results: RQ3&4. What is the relationship between the quantity or quality of coach visits and teacher instructional practices?

### Positive Associations

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of coach visits</td>
<td>Teacher gains in phonics</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>received</td>
<td>Teacher gains in general</td>
<td>$p &lt; 0.001$</td>
</tr>
</tbody>
</table>

### Negative Associations

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach’s quality in rapport</td>
<td>Teacher gains in phonics</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td></td>
<td>Teacher gains in general</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Coach’s quality in reflection</td>
<td>Teacher gains in phonics</td>
<td>$p &lt; 0.10$</td>
</tr>
<tr>
<td></td>
<td>Teacher gains in general</td>
<td>$p &lt; 0.10$</td>
</tr>
</tbody>
</table>

Note: No associations were found with the gains in Text-related instructional practices.
Discussion: Associations with Coach Visits

Which is more important, quantity of coach visits or quality?

In our sample, the quantity of visits helped. The quality didn’t.

Implications for programming:

- Does the quality of the coach visit really not matter?(!)
  - Do our data limitations obscure the true impact of coach quality?
  - Do our measures of quality not capture the kind of quality that matters?
  - Does coach quality matter more in a later stage of teacher development?

- Is this good news? Is ensuring quantity of visits easier than ensuring quality? But also more expensive?
  - What is the optimum frequency of coach visits & coach:teacher ratio?
  - Can higher coach quality get the same results with fewer visits?

- If accountability is the main driver of results, can this be achieved more efficiently in some other way than by coach visits?
Limitations and Considerations for Future Research
Limitations

1. The data were not originally collected for the purpose of this study, so some aspects were less than ideal for answering our research questions.

2. The sample size was small. The intervention time was short.

3. Coach quality is hard to quantify. We may not have captured all the important aspects. It is also a moving target; it fluctuates over time.

4. Our teacher observation instrument recorded gains in the teachers’ instructional practices but not necessarily the “quality” of instruction.

Coach quality and/or other factors may have a greater influence than our data allow us to see.
Considerations for Future Research

Measures of Quality:
Additional refinement of instruments used to measure “teacher quality” and “coach quality” in similar contexts.

Exploratory factor analysis is one way to study the variables contributing to these constructs.

Coaching Contributions:
How can we systematically embed into M&E similar studies to shed more light on which characteristics of coaching make a difference and how to optimize it?
For More Information

**Karon Harden**
Research Education Analyst
[kharden@rti.org](mailto:kharden@rti.org)
SharEd.rti.org