Teacher Coaching at National Scale: Insights into Using Technology and Data for Decision-Making in Kenya

Carmen Strigel, Lucy Wambari, Tim Slade
Tangerine:Tutor for Teacher Pedagogical Support

- Improving early grade reading and mathematics
- 2013 randomized controlled trial with 3 intervention, 1 control group:
  - Student eReaders;
  - Teacher tablet with software to support pronunciation and continuous assessment (Tangerine:Class)
  - Coach (CSO) tablet with software to monitor teacher instruction and provide pedagogical support (Tangerine:Tutor)
- 2014 scale-up of coach intervention (“Tangerine:Tutor”) to 50 zones;
- 2015 national scale with all 1,200+ coaches covering 24,000+ schools
- Subsequent refinement of Tangerine:Tutor ecosystem of coach professionalization, data-based pedagogic support, monitoring, and accountability under Kenya Tusome project
- Positive adoption at all levels – teacher, principal, coach, county directors, national MOE
- 2016 Google.org funds Tangerine:Tutor to enhance its open source ecosystem and replication
- May 2018 new version deployed in Kenya nationwide
Kenya Coach School Visit Protocol

**Focused** on instructional approaches

**30 minute lesson** observations

3 pupil **fluency** assessments

**10- to -15 minute** debrief

**Data** uploaded from tablets
Over 18,000 visits per month

“The use of tablets is [a] very powerful way of supporting teachers. If I miss something during observation, the tablet generates very useful feedback.”

– Saumu Mumbo, CSO, Bamburi Zone
Lesson demographics

- Class
  select only one
  - 3

- Does This Class Have Streams?
  select only one
  - Yes
  - No

Summary

Note to Observer- Select 2 to 3 areas to provide feedback on ONLY. Select at least one feedback item that is green or yellow (strong area) and one feedback item that is red (weak area).

Think back to the individual learners you observed during the lesson. Discuss with the teacher the behavior of different learners, what they did when it was time to read or write, and what you noticed about their engagement and understanding. Allow the teacher time to reflect on your observations.

Learner Recall
70%-100%

“You followed most or all of the steps where we ask learners to recall something we have just taught them on their own- fantastic! Where did you learn this skill?”

* Did you discuss this with the teacher
## Kenya Dashboard – [under redesign]

### TUSOME Tangerine Dashboard

- **County**: [Dropdown]
- **Sub County**: [Dropdown]
- **Zone**: [Dropdown]
- **Month, Year**: [Dropdown]

#### TABLE FLUENCY RATE

<table>
<thead>
<tr>
<th>Subject</th>
<th>Class</th>
<th>Correct Words Per Minute</th>
<th>Visits</th>
<th>Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1</td>
<td>10.2</td>
<td>25,206</td>
<td>75,618</td>
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<tr>
<td>English</td>
<td>2</td>
<td>25.6</td>
<td>19,467</td>
<td>58,401</td>
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<tr>
<td>English</td>
<td>3</td>
<td>88.8</td>
<td>7,322</td>
<td>21,966</td>
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<tr>
<td>Kiswahili</td>
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<tr>
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<td>17.4</td>
<td>19,723</td>
<td>59,169</td>
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<tr>
<td>Kiswahili</td>
<td>3</td>
<td>50.7</td>
<td>5,155</td>
<td>15,465</td>
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</tbody>
</table>

#### TABLE FLUENCY RATE APBET

<table>
<thead>
<tr>
<th>Subject</th>
<th>Class</th>
<th>Correct Words Per Minute</th>
<th>Visits</th>
<th>Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1</td>
<td>11.4</td>
<td>14,778</td>
<td>38,534</td>
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<tr>
<td>English</td>
<td>2</td>
<td>41.5</td>
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<td>20,334</td>
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<tr>
<td>English</td>
<td>3</td>
<td>100.3</td>
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<td>7,878</td>
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<tr>
<td>Kiswahili</td>
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<td>8.4</td>
<td>11,997</td>
<td>35,991</td>
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<tr>
<td>Kiswahili</td>
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<td>23.6</td>
<td>6,450</td>
<td>19,350</td>
</tr>
<tr>
<td>Kiswahili</td>
<td>3</td>
<td>53.9</td>
<td>2,150</td>
<td>6,450</td>
</tr>
</tbody>
</table>

*Export: Raw, Formatted*

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### Map

- **Location**: Kenya, Uganda
- **Cities**: Kampala, Buria
- Evaluation of Tangerine:Tutor and data visualization enhancements funded under Google.org grant
- Participants from across Kenya
  - 828 teachers
  - 152 curriculum support offices (coaches)
  - 242 directors (above coach level, including coach supervisors and MOE superiors)
- Participants interviews by RTI staff
- Data collection September/October 2018
## Teachers’ Report (n=851)

<table>
<thead>
<tr>
<th>Activity</th>
<th>% of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach used tablet during observation</td>
<td>97%</td>
</tr>
<tr>
<td>Coach used complementary pen/paper</td>
<td>88%</td>
</tr>
<tr>
<td>Coach conducted student assessment with tablet</td>
<td>88%</td>
</tr>
<tr>
<td>Coach discussed student scores during feedback</td>
<td>92%</td>
</tr>
<tr>
<td>Coach drew on tablet during feedback discussion</td>
<td>82%</td>
</tr>
<tr>
<td>Coach directly pointed to a resource or prompt on the tablet during the feedback discussion</td>
<td>56%</td>
</tr>
<tr>
<td>Coach pointed to tips in the Tangerine:Tutor feedback</td>
<td>24%</td>
</tr>
</tbody>
</table>

Teacher comments on specific coach feedback items:

- “*The CSO shared with me the lesson duration, number of words read by learners selected by random selection.*”
- “*I was new to the program. I had forgotten to do prediction and he [CSO] guided me during feedback session.*”
- “*She [CSO] demonstrated the I do/we do/you do; she guided me on retelling - to use questions to help the learners remember the story.*”
Coaches’ Report (n=157) | % of Coaches
--- | ---
Refer to Tangerine during feedback discussions | 97%
Use Tangerine for planning school visits | 60%
Check Tangerine outside of classroom observations at least weekly (of those that plan; n=96) | 75%
Checked the Tangerine dashboard at least twice last term | 33%
Director communicates with CSO about Tangerine dashboard | 50%
Professional relationship with their teachers improved | >95%
Professional relationship with TSC directors improved | 65%

CSO comments on directors’ communication about dashboard:
- “I improved on my classroom observation visits and uploaded at the right time.”
- “Through the TSC-Sub county director, the director warned that the CSOs who do not visit school will be required to explain why.”
- “[The director] promised to visit the concerned CSO especially those doing bad to ascertain the reason behind poor achievement among pupils.”
Director’s comments about decision-making on CSO performance before Tangerine:Tutor; and other data needs for dashboard:

- “We used to go to the field with them and looked and [looked at] their workplan what they achieved and what was pending to make decision.”
- “It was hard to make decisions, but I just observed what has been done or not done; but mostly it was [a] reaction against [the CSO’s] planning.”
- “I don't have any revision as the content is very comprehensive. However I will appreciate a deliberate effort to send the link to me more frequently and consistently to enable me make use of it.”
- “Data on enrolment specific to gender, schools, and zone. The same information with regards to […] books/materials distribution.”

Directors’ Report (n=257) | % of Directors
--- | ---
Had trouble making day-to-day management decision for lack of data | 28%
Check the Tangerine dashboard at least once a month (of those that receive an email link; n=51) | 49%
Prefer receiving dashboard access via multiple means email, WhatsApp, SMS, and/or dedicated app | 83%
Next Steps

- Finalize study data analysis and reporting
- Discuss and update web-based dashboard to include new data points as requested and if approved by the ministry
- Discuss and update
- Diversity dashboard access distribution channels to WhatsApp directly to directors
- Enhance targeted of dashboard access communication to ministry and Teacher Service Commission
- Revise CSO training materials to include explicit discussion and skill building on Tangerine:Tutor planning features; enhance features as necessary
- Explore levelled feedback depending on CSO exposure to program (more scripted for novices, less scripted for experienced CSOs)
Thank You!

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