Empowering Teachers through Technology

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Effective K-12 Delivery Models
27 Aug 2019

Technology is a critical support to intensive, in-person teacher professional development and scientifically-grounded instructional design.

Technology is not a solution that works by itself.

Technology can never replace the critical behavioral relationship between the teacher and child, including demonstration of emotional connection and positive motivation.

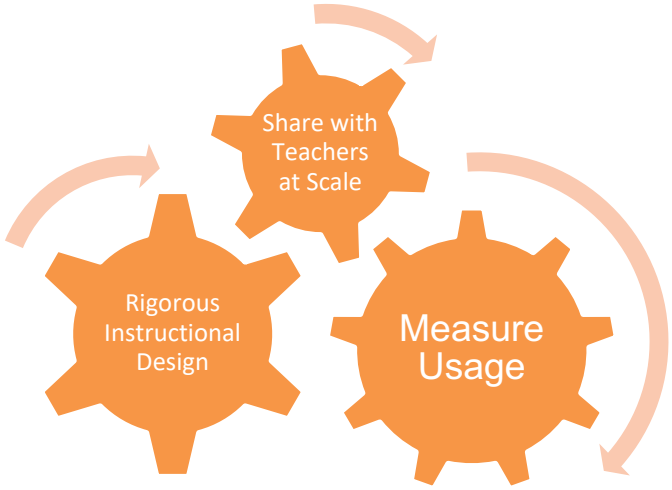
While some organizations see technology as a replacement of the teacher, we focus on **how to support and empower the teacher with technology, including using technology to create digitally transparent classrooms**.

We invest in intensive in-person training, with each teacher receiving a minimum of 2 weeks program induction training, and followed up with **daily and weekly observations by the school leader and at least 1 lesson observation per month by a professional development coach**.

In the past 10 years, we've trained 35,000+ teachers for 2000 days, with more than 25,000 contact hours.

Table 4. Average 2015 June Pupil Performance vs. 2014 November: Five-year-olds

	November 2014		June 2015
EGRA/EGMA Subtask	**Without Program**	**Bridge**	**Bridge**
Listening comprehension	8%	22%	39%
Letter sound knowledge	14 letters	16 letters	27 letters
Non-word reading	4.8 words	5.4 words	9.5 words
Familiar word reading	3.3 words	5.2 words	10.8 words
Passage fluency	2.8 words	4.4 words	10.6 words
Oral counting	58	56	61
One-to-one correspondence	57	60	63
Number identification	44%	50%	62%
Quantity discrimination	46%	54%	74%
Addition 1	15%	19%	21%



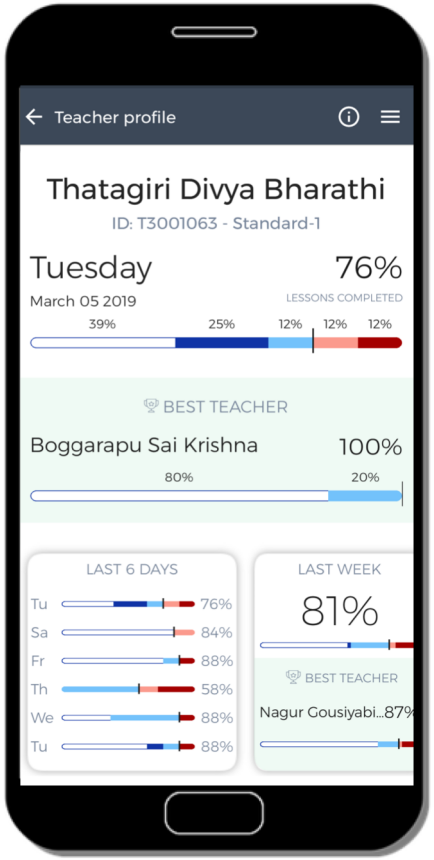
10. **This time, it is YOUR TURN.** Point to the class.
11. **Your turn.** *1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20.*
12. **Excellent work! You just counted from 1 to 20 all by yourselves.**

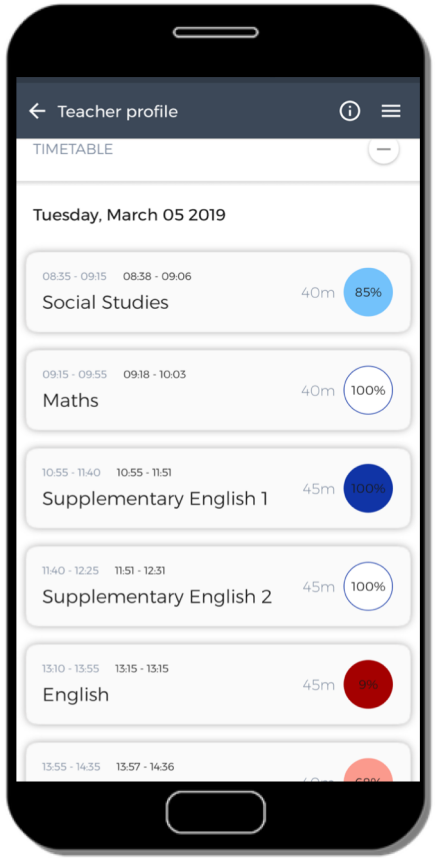
Counting circles – 12 minutes

13. Draw the following on the board.

14. **I will count these circles. When I count, I touch each one. I don't skip any.**
15. **My turn. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20.**
16. Pass out copies of the practice sheet. **Class, turn to the last page of your practice sheet.**

17. Touch the first circle on the board. **Class, point to the first circle on your Practice Sheet.**
18. Circulate to make sure every student has his/her finger on the first circle on the page. Do not move on until every student is doing so.
19. **We will count these circles.**
20. **Point to each circle on your page as you say the number.**
21. **When we count, we touch each one. We don't skip any.**
22. **Our turn.** Lead students in counting 20 circles. Count very slowly and touch each


Teacher profile
Thatagiri Divya Bharathi
ID: T3001063 - Standard-1
Tuesday
March 05 2019
76%
LESSONS COMPLETED
39%
25%
12%
12%
12%
BEST TEACHER
Boggarapu Sai Krishna
100%
80%
20%
LAST 6 DAYS
Tu 76%
Sa 84%
Fr 88%
Th 58%
We 88%
Tu 88%
LAST WEEK
81%
BEST TEACHER
Nagur Gousiyabi...87%


Teacher profile
TIMETABLE
Tuesday, March 05 2019
08:35 - 09:15 08:38 - 09:06
Social Studies
40m
85%
09:15 - 09:55 09:18 - 10:03
Maths
40m
100%
10:55 - 11:40 10:55 - 11:51
Supplementary English 1
45m
100%
11:40 - 12:25 11:51 - 12:31
Supplementary English 2
45m
100%
13:10 - 13:55 13:15 - 13:15
English
45m
9%
13:55 - 14:35 13:57 - 14:36

Digital transparency of teacher practice empowers school leaders to provide objective, quality feedback

When I arrived, the school leader was sitting in Grade 3, observing the teacher that was struggling to keep on time. The school leader, who was previously unengaged on academic matters, was observing a class. I never thought I would see the day.

- Sean O'Malley, Academic Director, Liberia

This school leader is usually a fairly apathetic person and I was shocked to see him own some of the learning. Martin said to the G6 teacher who taught his last lesson at noon, "You are not teaching the full day.

- Daniel Fully, School Supervisor, Liberia

Previously, it was difficult for school leaders to have a conversation with teachers as it was difficult to identify the main causes behind their lesson delivery (because didn't see it lesson by lesson). The app helped to bridge this gap by providing guidance to see data in different ways.

- Jitesh Kumar, School Supervisor, Andhra Pradesh

I find people responding more positively than when I used to talk to them without the app. This app is not partial! The school leader's feedback to teachers on their teaching is more accepted by teachers. It is clearer to them - a true reflection.

- Bode Hassan, School Supervisor Bode, Lagos

Learning Laboratory

Innovation by every classroom, innovation for every classroom

Stage 1 Collect Data

Pupil assessment
Academic literature
Tests marked by teachers
Teacher-entered pupil test data
District official feedback

Stage 2 Analyze Data and Generate Response

Teachers in the classroom
International researchers
District officials
Local researchers
Bridge master teachers

Stage 3 Create a Proposal

Generate a hypothesis
Evaluate the proposal
Design the intervention
Summarize data and academic literature

Stage 4 Finalize and Execute Intervention

Version A: Independent practice
Version B: Small group practice

Stage 5 Pupil Assessment and Data Entry

Pupil assessment
Teacher data entry
Version A
Pupil assessment
Teacher data entry
Version B

Stage 6 Evaluate the Outcomes

Version A
Independent practice.
Pupils did not perform well

Version B
Small group practice.
Pupils performed well

Stage 7 Apply Sucessful Intervention at Scale

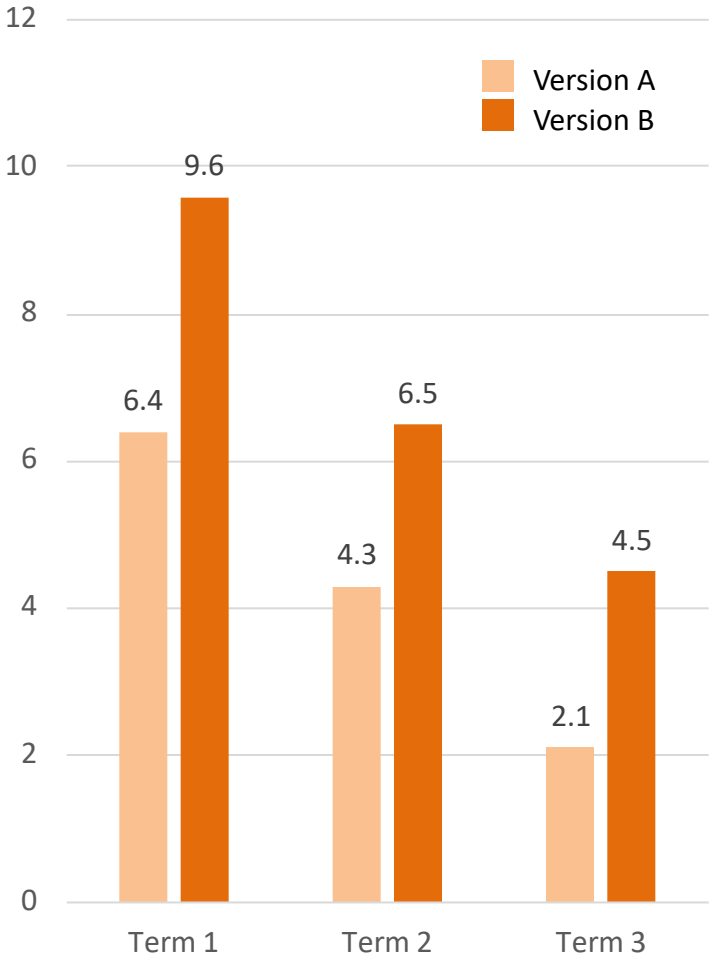
Design new teacher guides
Print supplementary learning materials
Implement new instructional approach
Create accompanying PowerPoint presentations

Evaluating Blocked vs Interleaved Problems

Blocked problem sets: Aligning all practice problems to a daily objective
Interleaved problem sets: Mixing in some problems aligned to prior objectives

Blocked (Version A)	**Interleaved** (Version B)
1) x – 5 = 13	1) x – 5 = 13
2) x – 8 = 12	2) **Round 697 to the nearest hundred.**
3) x – 10 = 19	3) **Write 8/10 as a percent.**
4) x – 12 = 35	4) x – 8 = 12
5) x – 17 = 49	5) **8.6 - 0.90**
6) m – 25 = 67	6) m – 25 = 67
7) q – 20 = 108	7) **Find the least common multiple of 6 and 9.**
8) p – 25 = 100	8) p – 25 = 100

Lagos Primary 5 Mathematics Gain Scores by Term



Setting up an A/B test

Step 1:
Select a site for testing (Lagos, Primary 5, Mathematics)

Step 2:
Randomise half of schools to Version A, half of schools to Version B

Step 3:
Design and administer pretest. Teachers receive test via digital teacher guide, enter scores electronically

Step 4:
Run the intervention for 2-3 terms

Step 5:
Design and administer post-test. Teachers receive test via digital teacher guide, enter scores electronically

Step 6:
Analyse data, scale up more effective approach

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