CENTRE FOR EDUCATION POLICY
& EQUALISING OPPORTUNITIES

Instructional coaching: currently the best-evidenced form of PD we have

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Education Endowment Foundation

What are the Characteristics of Effective Teacher Professional Development? A Systematic Review and Meta-analysis

October 2021

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tifying the characteristics of effective teacher professional elopment: a critical review

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STRACT

veral influential reviews and two meta-reviews have converged the position that teacher professional development (PD) is re effective when it is sustained, collaborative, subject specific, ws on external expertise, has buy-in from teachers, and is ctice based. This consensus view has now been incorporated government policy and official guidance in several countries. s paper reassesses the evidence underpinning the consensus, uing that the reviews on which it is based have important thodological weaknesses, in that they employ inappropriate lusion criteria and depend on an invalid inference method. The nsensus view is therefore likely to be inaccurate. It is argued t researchers would make more progress identifying aracteristics of effective professional development by looking alignment between evidence from basic research on human l acquisition and features of rigorously evaluated PD erventions.

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Professional development; teacher education; reviews

duction

ational surveys suggest that teachers spend, on average, 10.5 days per year engaged urses, workshops, conferences, seminars, observation visits, or in-service training n, 2016). The motivation for this substantial investment in professional development s clear: Improved pupil attainment is associated with improvements in income, hap-s, and health (Chetty et al., 2014; Hanushek, 2011; Lochner, 2011). How this PD should esigned is, however, somewhat less clear. While research has identified some pro-

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Habit formation limits growth in teacher effectiveness: A review of converging ce from neuroscience and social e

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me rapidly more effective during the early years of their career but tend to improve owly thereafter. This article reviews and synthesises converging evidence from neuro-nology, economics and education suggesting that teachers' rate of growth slows practice becomes habitual. First, we review evidence suggesting that teaching is highly abit formation and that teachers display characteristic features of habitual behaviour. ew empirical findings that performance asymptotes, as seen in teachers' learning de with the reallocation of behaviour regulation to neural circuits governing habitual nally, original data is presented showing that teachers' behaviour becomes automatic he that teacher effectiveness begins to level off. Collectively, this evidence implies that evelopment should involve repeated practice in realistic settings in order to overwrite xisting habits.

fectiveness

bility to raise pupil test scores follows a clear pattern over their career:

1. Defining instructional coaching
2. Does instructional coaching work?
3. How does instructional coaching work?
4. Fine tuning instructional coaching

1. Defining instructional coaching
2. Does instructional coaching work?
3. How does instructional coaching work?
4. Fine tuning instructional coaching

What is instructional coaching?

An observation and feedback cycle in which instructional experts work with teachers to discuss their practice in a way that is:

(a) Individualized

(b) Recurring

(c) Sustained

(d) Classroom/practice-based

(e) Focused on specific skills

See: Joyce & Showers (1981) & Kraft et al (2018)

Example: MQI Coaching Cycle

Hill & Kraft (2020)

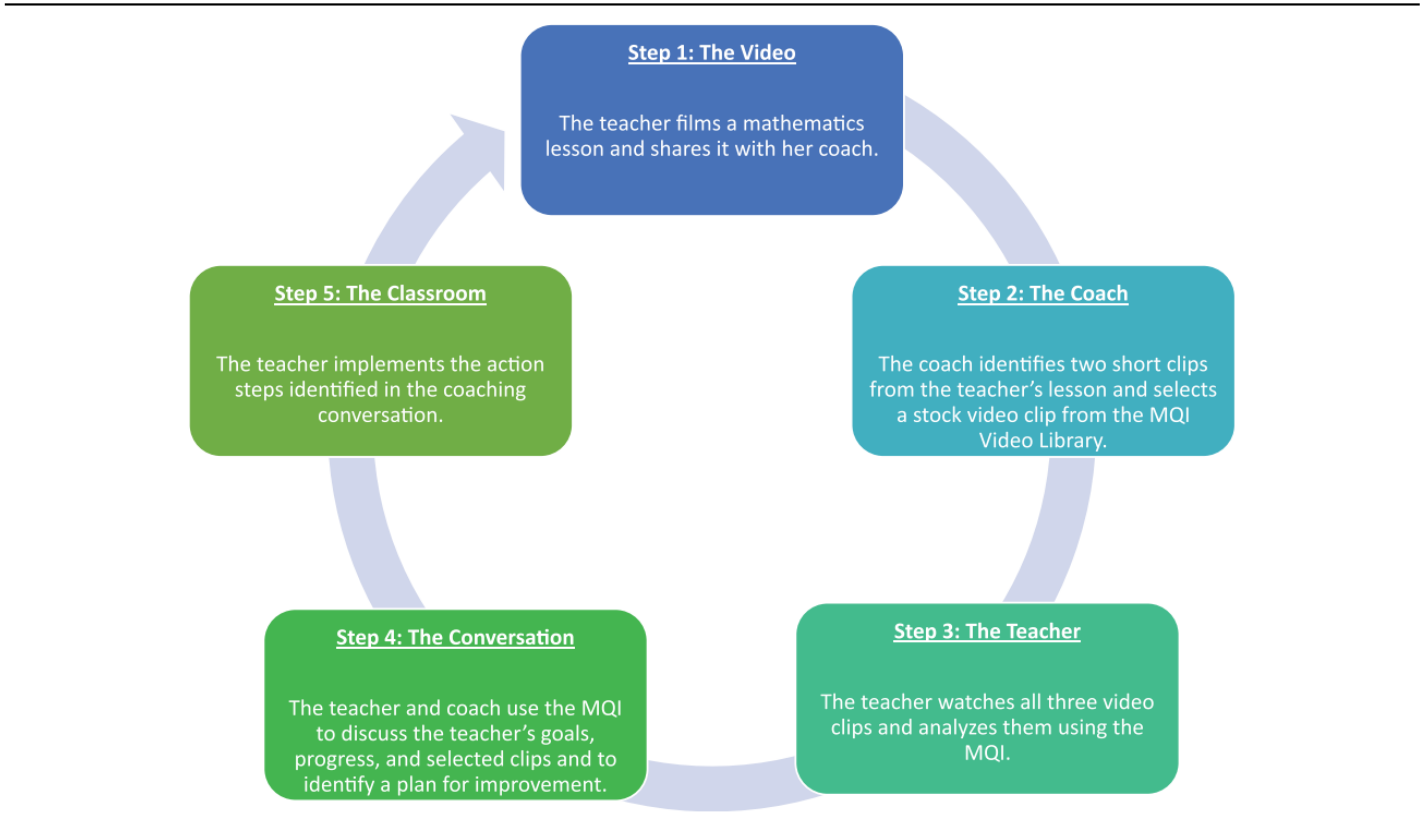


Figure 1. **Mathematical Quality of Instruction (MQI) Coaching cycle.**

What is instructional coaching?

Joyce & Showers (1981)

Instructional coaching is about overcoming the problem of transfer: theory into practice

Closer to the action: geographically / temporally / personally

Support with, & accountability for, getting through the implementation dip

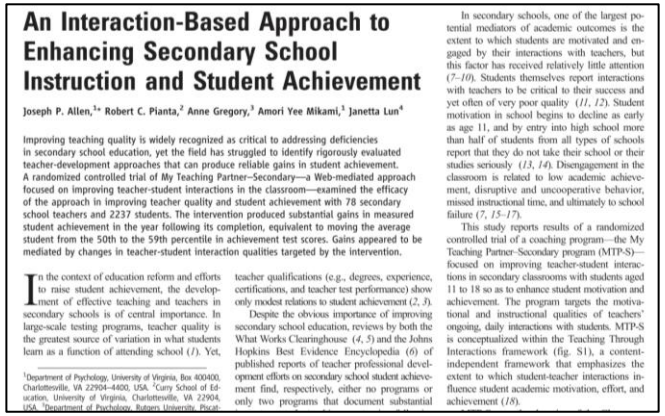
1. Defining instructional coaching

2. Does instructional coaching work?

3. How does instructional coaching work?

4. Fine tuning instructional coaching

1. Evidence from replicated RCTs



An Interaction-Based Approach to Enhancing Secondary School Instruction and Student Achievement

Joseph P. Allen,[1]* Robert C. Pianta,[2] Anne Gregory,[3] Amori Yee Mikami,[1] Janetta Lun[4]

Improving teaching quality is widely recognized as critical to addressing deficiencies in secondary school education, yet the field has struggled to identify rigorously evaluated teacher-development approaches that can produce reliable gains in student achievement. A randomized controlled trial of My Teaching Partner–Secondary—a Web-mediated approach focused on improving teacher-student interactions in the classroom—examined the efficacy of the approach in improving teacher quality and student achievement with 78 secondary school teachers and 2237 students. The intervention produced substantial gains in measured student achievement in the year following its completion, equivalent to moving the average student from the 50th to the 59th percentile in achievement test scores. Gains appeared to be mediated by changes in teacher-student interaction qualities targeted by the intervention.

In the context of education reform and efforts to raise student achievement, the development of effective teaching and teachers in secondary schools is of central importance. In large-scale testing programs, teacher quality is the greatest source of variation in what students learn as a function of attending school (*1*). Yet, teacher qualifications (e.g., degrees, experience, certifications, and teacher test performance) show only modest relations to student achievement (*2*, *3*).

Despite the obvious importance of improving secondary school education, reviews by both the What Works Clearinghouse (*4*, *5*) and the Johns Hopkins Best Evidence Encyclopedia (*6*) of published reports of teacher professional development efforts on secondary school student achievement find, respectively, either no programs or only two programs that document substantial

In secondary schools, one of the largest potential mediators of academic outcomes is the extent to which students are motivated and engaged by their interactions with teachers, but this factor has received relatively little attention (*7–10*). Students themselves report interactions with teachers to be critical to their success and yet often of very poor quality (*11*, *12*). Student motivation in school begins to decline as early as age 11, and by entry into high school more than half of students from all types of schools report that they do not take their school or their studies seriously (*13*, *14*). Disengagement in the classroom is related to low academic achievement, disruptive and uncooperative behavior, missed instructional time, and ultimately to school failure (*7*, *15–17*).

This study reports results of a randomized controlled trial of a coaching program—the My Teaching Partner–Secondary program (MTP-S)—focused on improving teacher-student interactions in secondary classrooms with students aged 11 to 18 so as to enhance student motivation and achievement. The program targets the motivational and instructional qualities of teachers' ongoing, daily interactions with students. MTP-S is conceptualized within the Teaching Through Interactions framework (fig. S1), a content-independent framework that emphasizes the extent to which student-teacher interactions influence student academic motivation, effort, and achievement (*18*).

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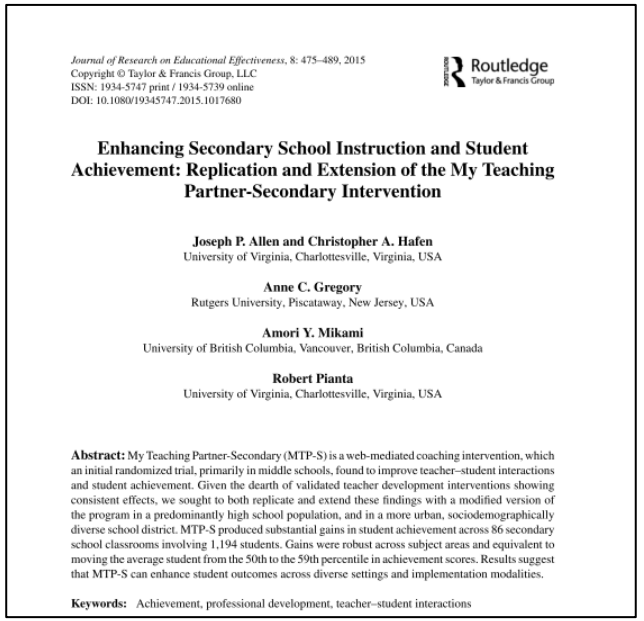
78 secondary teachers

+3 month progress



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Routledge
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Enhancing Secondary School Instruction and Student Achievement: Replication and Extension of the My Teaching Partner-Secondary Intervention

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Robert Pianta
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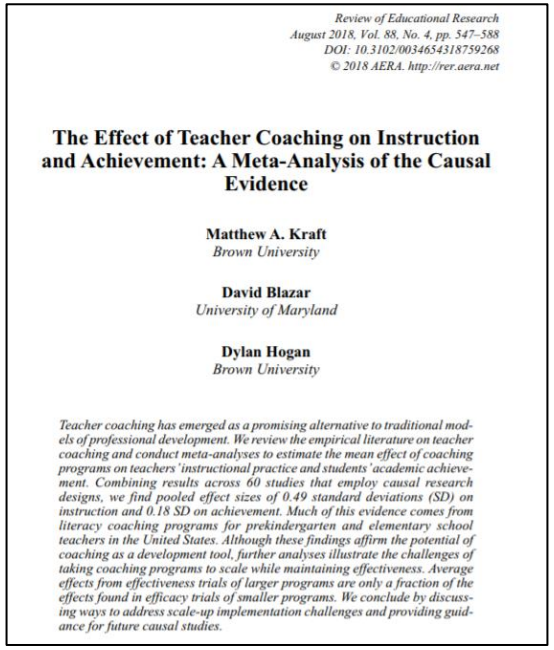
Abstract: My Teaching Partner-Secondary (MTP-S) is a web-mediated coaching intervention, which an initial randomized trial, primarily in middle schools, found to improve teacher–student interactions and student achievement. Given the dearth of validated teacher development interventions showing consistent effects, we sought to both replicate and extend these findings with a modified version of the program in a predominantly high school population, and in a more urban, sociodemographically diverse school district. MTP-S produced substantial gains in student achievement across 86 secondary school classrooms involving 1,194 students. Gains were robust across subject areas and equivalent to moving the average student from the 50th to the 59th percentile in achievement scores. Results suggest that MTP-S can enhance student outcomes across diverse settings and implementation modalities.

Keywords: Achievement, professional development, teacher–student interactions

86 secondary teachers

+6 months progress

2. Evidence from meta-analysis of causal studies



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The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence

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David Blazar
University of Maryland

Dylan Hogan
Brown University

Teacher coaching has emerged as a promising alternative to traditional models of professional development. We review the empirical literature on teacher coaching and conduct meta-analyses to estimate the mean effect of coaching programs on teachers' instructional practice and students' academic achievement. Combining results across 60 studies that employ causal research designs, we find pooled effect sizes of 0.49 standard deviations (SD) on instruction and 0.18 SD on achievement. Much of this evidence comes from literacy coaching programs for prekindergarten and elementary school teachers in the United States. Although these findings affirm the potential of coaching as a development tool, further analyses illustrate the challenges of taking coaching programs to scale while maintaining effectiveness. Average effects from effectiveness trials of larger programs are only a fraction of the effects found in efficacy trials of smaller programs. We conclude by discussing ways to address scale-up implementation challenges and providing guidance for future causal studies.

31 causal studies on attainment

+2-3 months

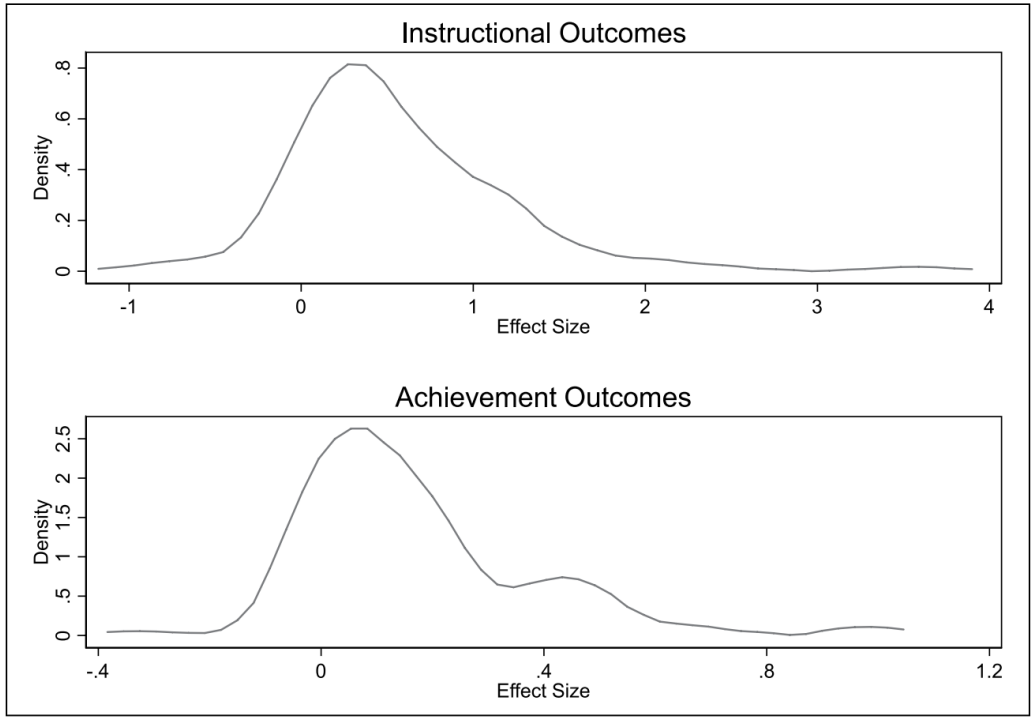


FIGURE 2. *Kernel density plots of effect sizes for instructional and achievement outcomes.*
Note. $k = 186$ for instructional outcomes and 113 for achievement outcomes.

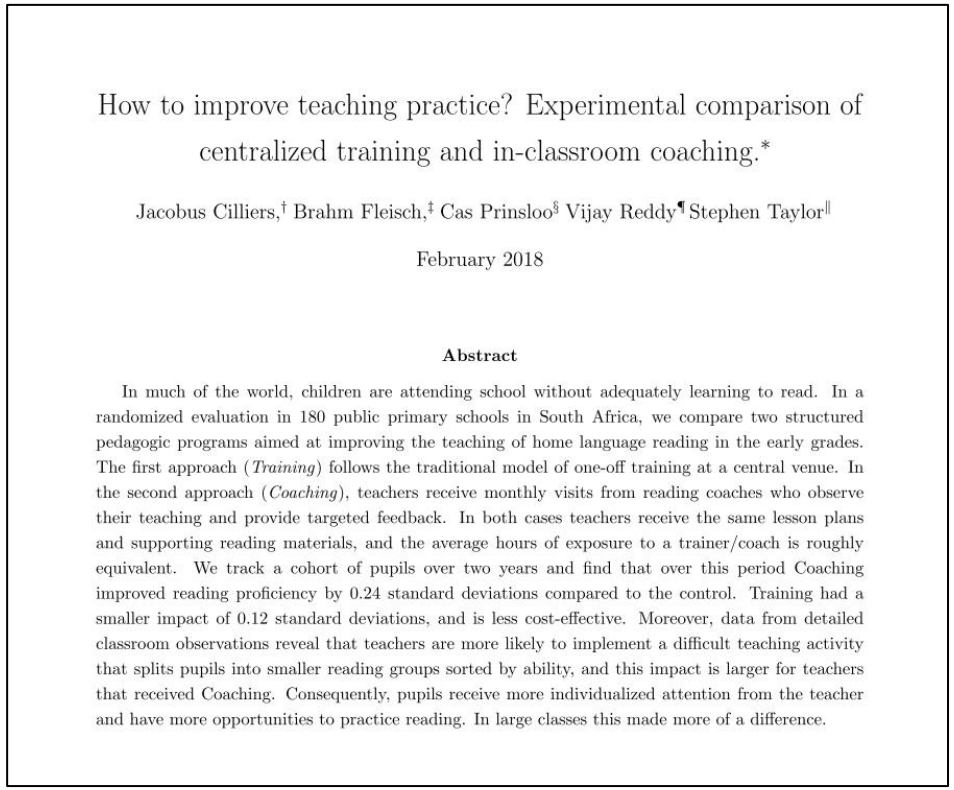
3. Evidence from A/B testing

Coaching Vs. Training

RCT 180 primary schools

Home-language reading

Better adoption of new techniques



How to improve teaching practice? Experimental comparison of centralized training and in-classroom coaching.*

Jacobus Cilliers,† Brahm Fleisch,‡ Cas Prinsloo§ Vijay Reddy¶ Stephen Taylor‖

February 2018

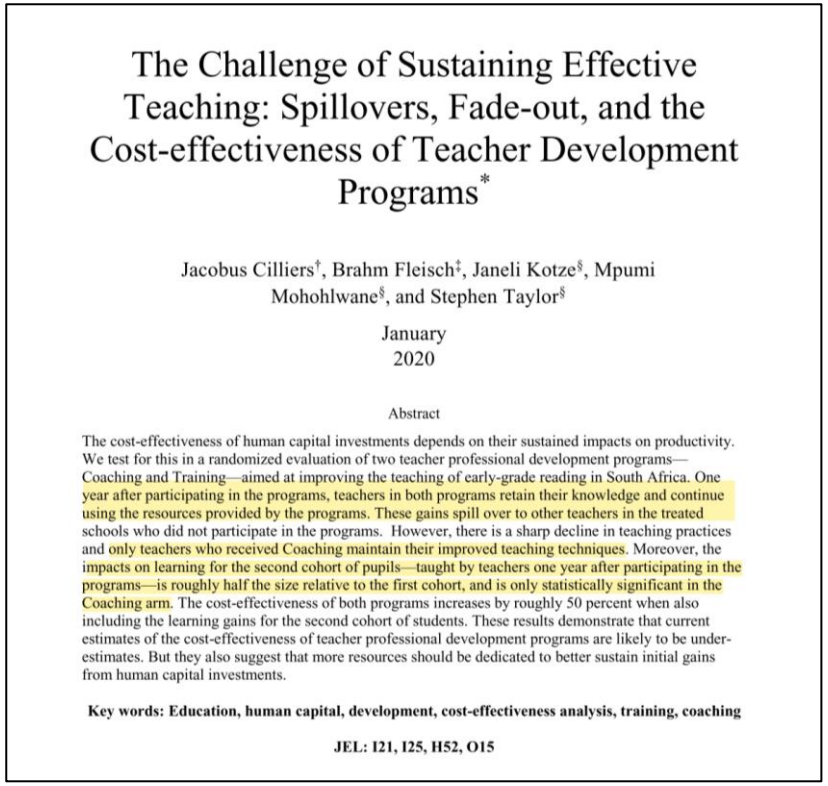
Abstract

In much of the world, children are attending school without adequately learning to read. In a randomized evaluation in 180 public primary schools in South Africa, we compare two structured pedagogic programs aimed at improving the teaching of home language reading in the early grades. The first approach (*Training*) follows the traditional model of one-off training at a central venue. In the second approach (*Coaching*), teachers receive monthly visits from reading coaches who observe their teaching and provide targeted feedback. In both cases teachers receive the same lesson plans and supporting reading materials, and the average hours of exposure to a trainer/coach is roughly equivalent. We track a cohort of pupils over two years and find that over this period Coaching improved reading proficiency by 0.24 standard deviations compared to the control. Training had a smaller impact of 0.12 standard deviations, and is less cost-effective. Moreover, data from detailed classroom observations reveal that teachers are more likely to implement a difficult teaching activity that splits pupils into smaller reading groups sorted by ability, and this impact is larger for teachers that received Coaching. Consequently, pupils receive more individualized attention from the teacher and have more opportunities to practice reading. In large classes this made more of a difference.

Training effect size: not significant
Coaching effect size: +2-3 months

3. Evidence from A/B testing

One year later…



The Challenge of Sustaining Effective Teaching: Spillovers, Fade-out, and the Cost-effectiveness of Teacher Development Programs*

Jacobus Cilliers†, Brahm Fleisch‡, Janeli Kotze§, Mpumi Mohohlwane§, and Stephen Taylor§

January
2020

Abstract

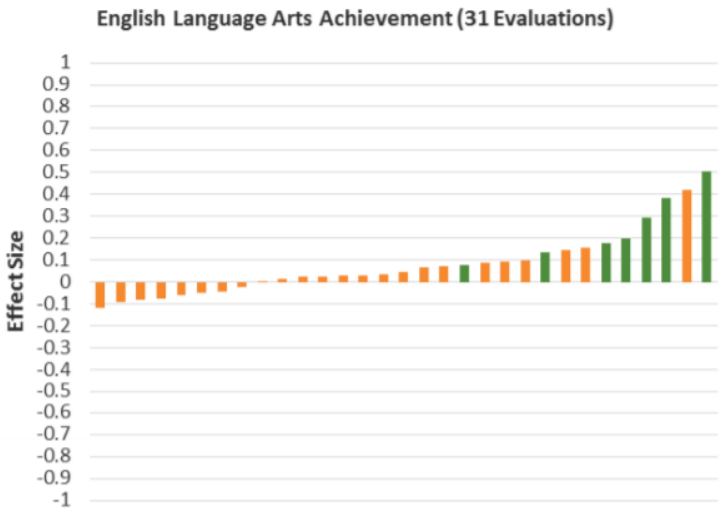
The cost-effectiveness of human capital investments depends on their sustained impacts on productivity. We test for this in a randomized evaluation of two teacher professional development programs—Coaching and Training—aimed at improving the teaching of early-grade reading in South Africa. One year after participating in the programs, teachers in both programs retain their knowledge and continue using the resources provided by the programs. These gains spill over to other teachers in the treated schools who did not participate in the programs. However, there is a sharp decline in teaching practices and only teachers who received Coaching maintain their improved teaching techniques. Moreover, the impacts on learning for the second cohort of pupils—taught by teachers one year after participating in the programs—is roughly half the size relative to the first cohort, and is only statistically significant in the Coaching arm. The cost-effectiveness of both programs increases by roughly 50 percent when also including the learning gains for the second cohort of students. These results demonstrate that current estimates of the cost-effectiveness of teacher professional development programs are likely to be under-estimates. But they also suggest that more resources should be dedicated to better sustain initial gains from human capital investments.

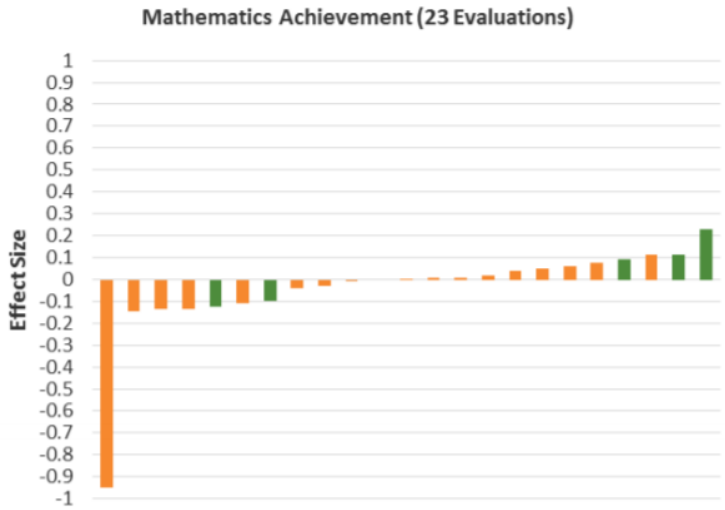
Key words: Education, human capital, development, cost-effectiveness analysis, training, coaching

JEL: I21, I25, H52, O15

Only the coaching group maintained used of the group teaching practices

4. Evidence from systematic research programmes





7/31 had a positive impact

3/23 had a positive impact

Boulay et al. (2018)

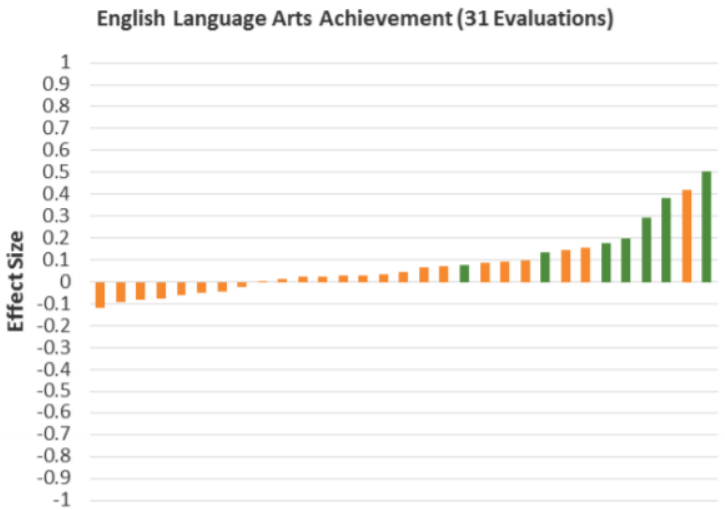
Investing in Innovation (i3) fund

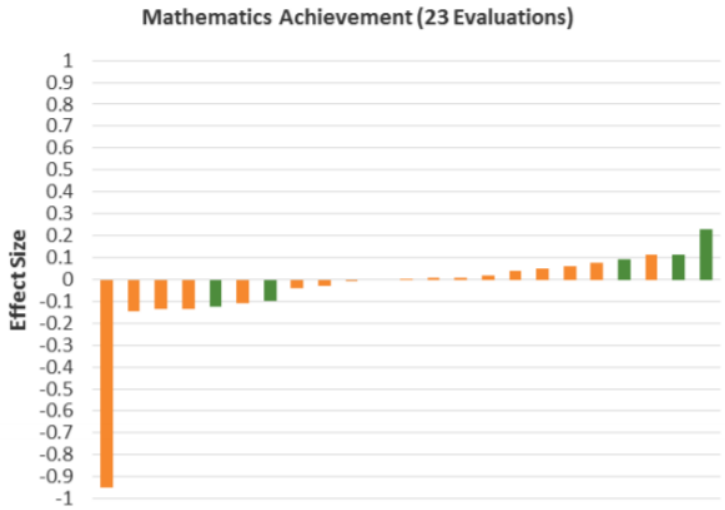
$1.4 Bn invested 2009-2017

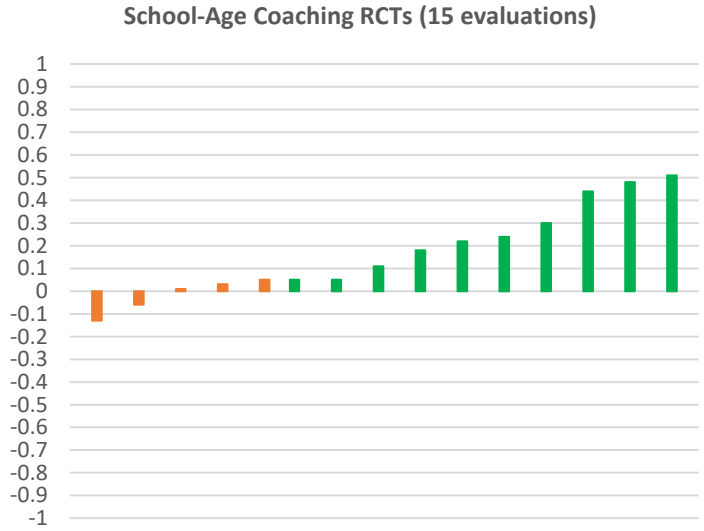
Results of all RCTs shown on left

85% of interventions incorporate CPD

4. Evidence from systematic research programmes







7/31 had a positive impact

3/23 had a positive impact

10/15 had a positive impact

Boulay et al. (2018)

Author's own analysis

Summary

Instructional coaching is effective, in particular and on average

Coaching makes the same content more impactful

Coaching is more impactful than a lot of other stuff

Caveats

Evidence better for reading and STEM

Effects are smaller in “scaled up” interventions (Kraft et al 2018)

‘Quality’ of coaches matters (Blazar & Kraft 2019; Blazar 2021)

1. Defining instructional coaching

2. Does instructional coaching work?

3. How does instructional coaching work?

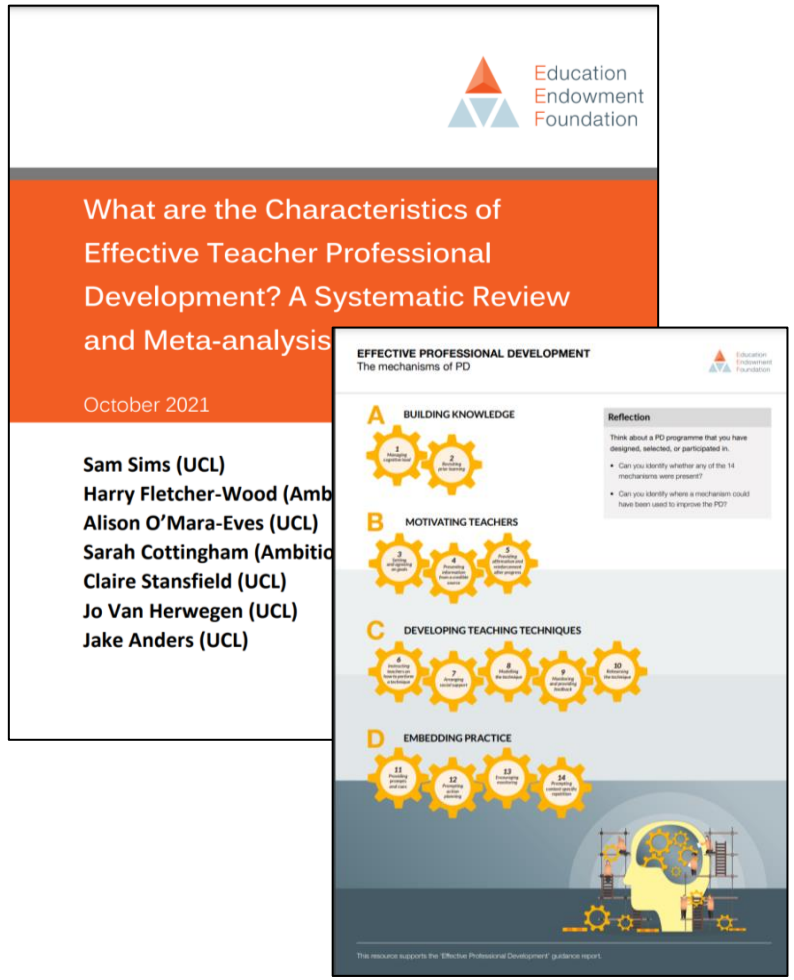
4. Fine tuning instructional coaching

How does instructional coaching work?

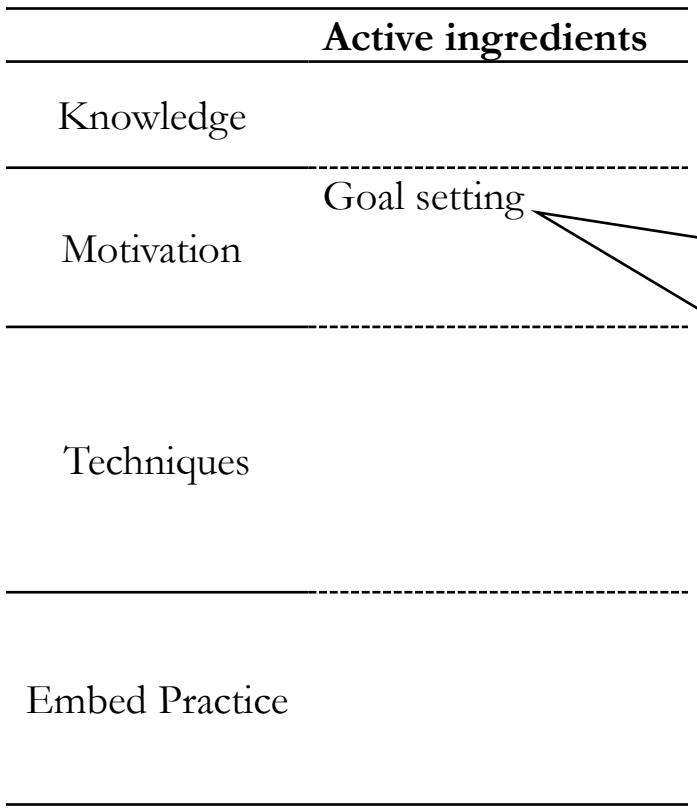
Unpacking this report provides insight:

- Into *how* coaching works

- Into how *best to design* coaching



Active ingredients of effective PD



Set a specific goal around changing practice

'Teachers left each session with a gap task to try out and evaluate with their own classes prior to the next CPD session'

Setting goals substantially increases the likelihood of changed practice across, health, education and sporting domains (Epton, 2017).

Active ingredients of effective PD

Active ingredients	
Knowledge	
Motivation	
Techniques	Modelling
Embed Practice	

Provide a visible example of the practice

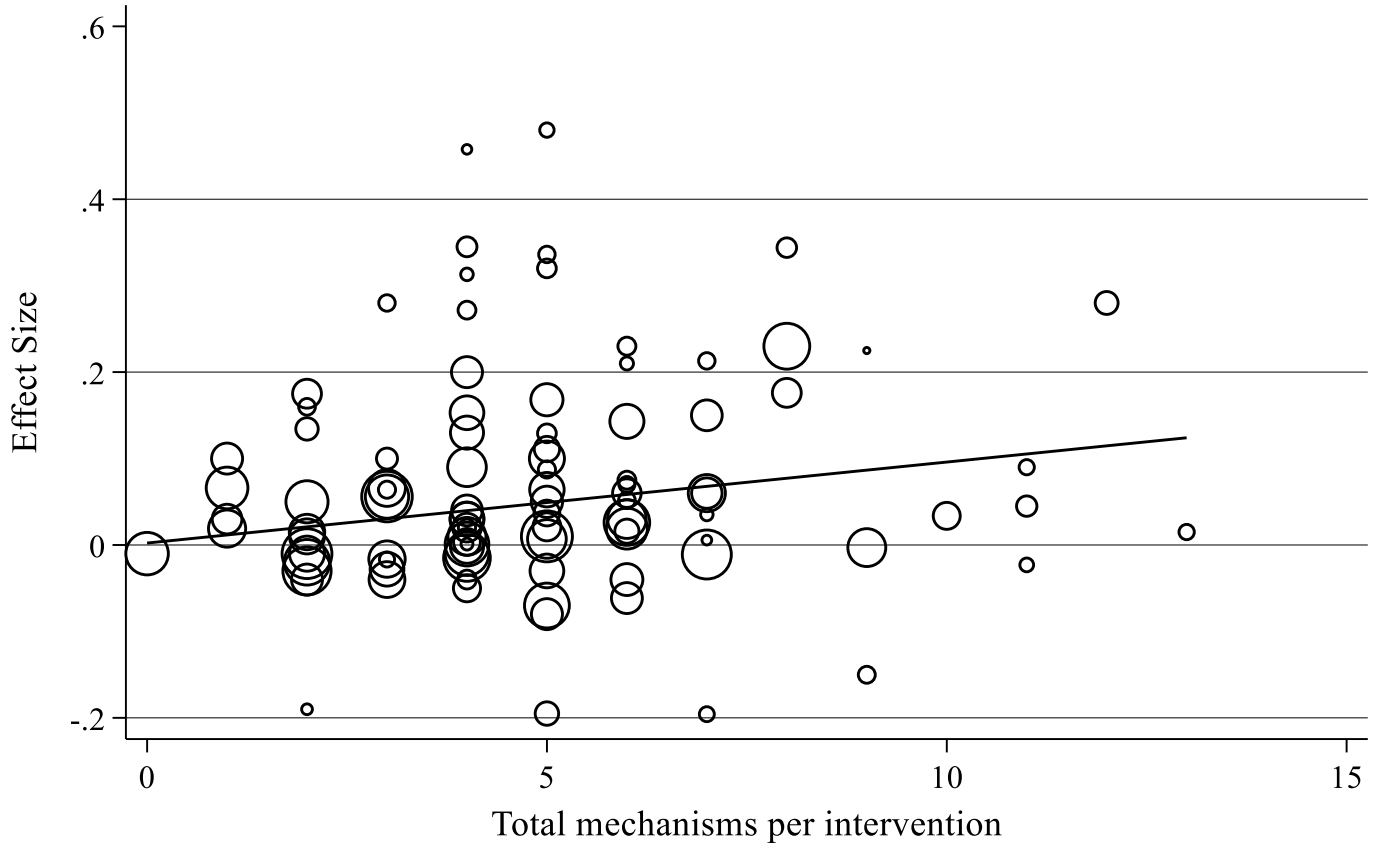
‘Delivery of the curriculum modules is modeled [sic] by master teachers’

Modelling (as opposed to practice alone) improves skills in medicine surgery and academic domains (Cordovani & Cordovani, 2016; Harris et al., 2018; Renkl, 2014).

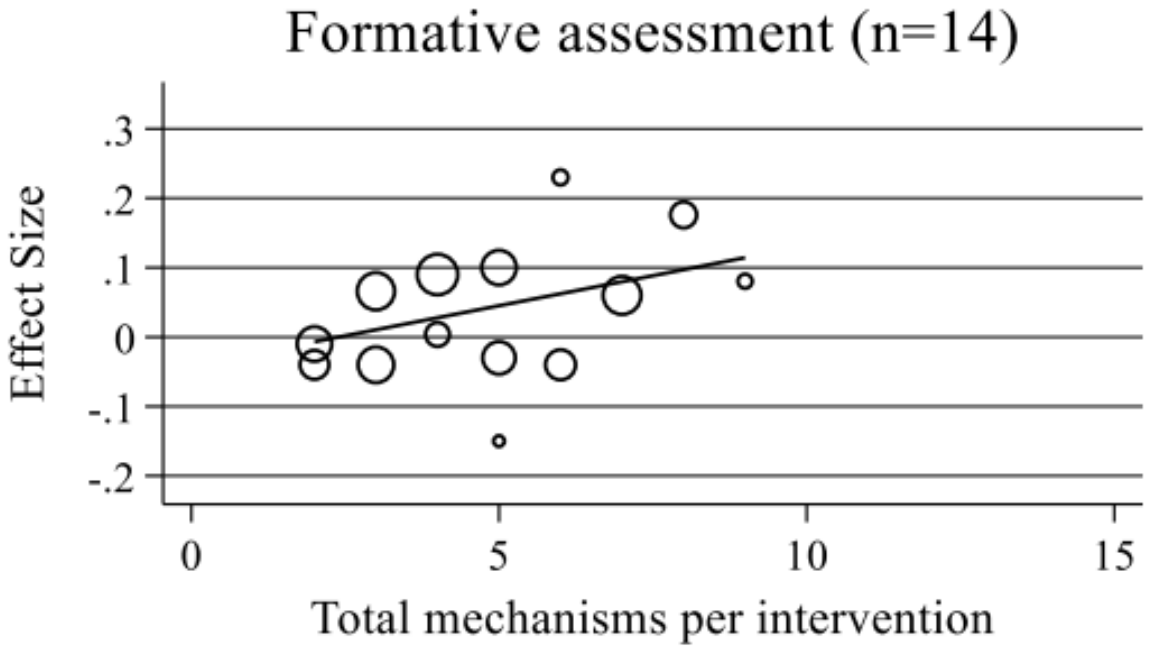
Active ingredients of effective PD

	Active ingredients
Knowledge	Manage cognitive load
	Revisit prior learning
Motivation	Goal setting
	Credible source
	Praise / reinforce
Techniques	Instruction
	Practical social support
	Modelling
	Feedback
	Rehearsal
Embed Practice	Prompts/cues
	Action planning
	Self-monitoring
	Context-specific repetition

Active ingredients of effective PD



Impact and design



Taking stock

So these ‘active ingredients’ of effective PD really seem to matter

This can help us understand how instructional coaching works

How does instructional coaching work?

Active ingredients	Instructional Coaching
Manage cognitive load	
Revisit prior learning	
Goal setting	✓
Credible source	
Praise / reinforce	✓
Instruction	✓
Practical social support	
Modelling	✓
Feedback	✓
Rehearsal	✓
Prompts/cues	
Action planning	
Self-monitoring	
Context-specific repetition	✓

Aims of the Exercises

Learn more about the specific ‘active ingredients’ of effective PD

See how coaching can incorporate these active ingredients

See how PD can be designed to incorporate these active ingredients

Exercise: label each of the instructional coaching active ingredients that occur in the transcript of the coaching session

	Active ingredients	Definition
I	Manage cognitive load	
	Revisit prior learning	
G	Goal setting	Set or agree on a specific goal defined in terms of the behaviour to be achieved.
	Credible source	
	Praise / reinforce	Provide verbal recognition and praise for progress made
T	Instruction	Advise or agree on how to perform the behaviour/practice/skill.
	Practical social support	
	Modelling	Provide an observable sample of the behaviour/practice, for the person to aspire to or imitate.
	Feedback	Monitor and provide feedback on the performance of the behaviour/practice
	Rehearsal	Prompt practice or rehearsal of the behaviour/practice in a context when not necessary
P	Prompts/cues	
	Action planning	
	Self-monitoring	
	Context-specific repetition	Prompt rehearsal of the behaviour/practice in the same context repeatedly so that the context elicits the behaviour

Taking stock

This helps with implementation

Allows for adaptation without ‘lethal mutation’ (Brown & Campione, 1996)

1. Defining instructional coaching

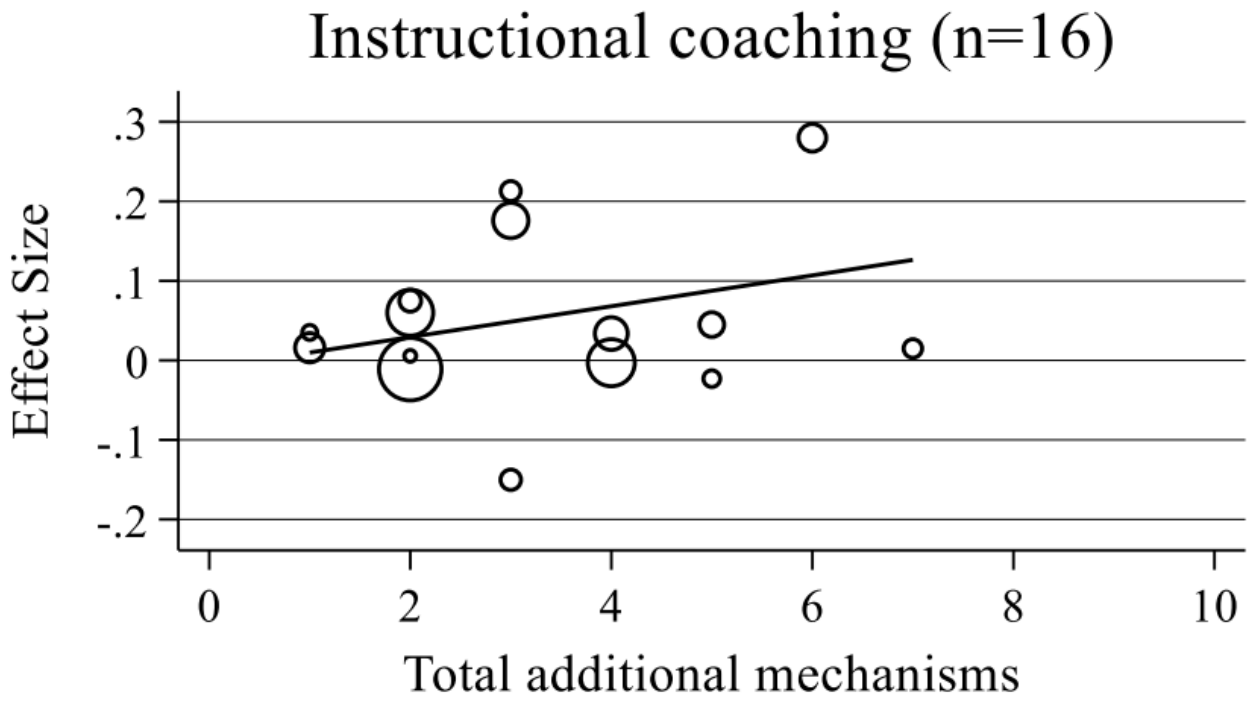
2. Does instructional coaching work?

3. How does instructional coaching work?

4. Building on instructional coaching

	Manage Cog Load	Revisit Material	Goal Setting	Credible Source	Praise/ Reinforce	Instruction	Practical Social Support	Model	Feedback	Rehearse	Action Planning	Self-monitor	Context-specific repetition
Bambrick-Santoyo	■	■	■		■	■		■	■	■	■		■
My Teaching Partner	■	■	■		■	■		■	■			■	
Goodson (2010)	■	■	■		■	■	■	■	■	■			
Correnti (2020)	■	■	■	■		■	■	■	■	■	■	■	■

Mechanism rich coaching



Ten pointers on the following

Creating psychological safety

Overcoming awkwardness

Keeping it focused

1: Creating psychological safety

Get senior or well-respected teachers to be coached first

2: Creating psychological safety

Coaches should also be coached

3: Creating psychological safety

Clearly separate performance management and instructional coaching

4: Creating psychological safety

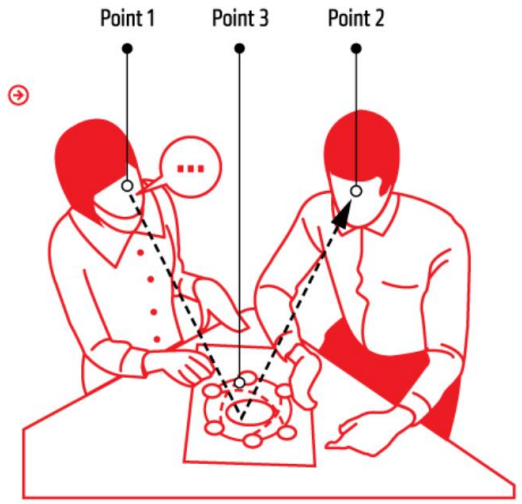
Frame coaching as an opt-in entitlement

5: Overcoming awkwardness

Develop common language to reduce ambiguity and misunderstanding

6. Overcoming awkwardness

Use ‘three point communication’



Credit: @OliCav

7. Overcoming awkwardness

Model, and don't apologise for,
deliberate practice / rehearsal

8. Overcoming awkwardness

Practice open-ended directed questioning

“Ok, so that’s going to help you check other pupils’ understanding, but how are you going to check Ryan’s understanding?”

9. Keep it focused

Use rubrics to stop conversational drift

10. Keep it focused

Use prompts if it helps

Overview

Wisdom from practising instructional coaches and teacher educators:

- Steve Farndon (2021) Chartered College LINK
- Josh Goodrich (2021) YouTube LINK
- Josh Goodrich (2021) Blog series LINK
- Emily Henderson (2019) Chartered College LINK
- Kelly Gomez Johnson (2016) LINK
- Tom Sherrington / Oli Cav

Thanks!

Questions…

@DrSamSims