Registry of Efficacy and Effectiveness Studies

Study Title:
Study of Feedback for Teachers Based on Classroom Videos

Registry ID: #1649.1v3

Version History

Changes were published on November 25, 2019 9:05 AM ET.
Currently viewing this version.
Description of changes published:
Changed impacts on teachers' practices from an exploratory to a confirmatory analysis
Revised list of covariates to be included in impact estimation models to align with data availability.

Changes were published on August 28, 2019 8:58 PM ET.
Review this version.
Description of changes published:
Updated the regression model and description to include randomization block fixed effects.

The first version of this entry was published on February 6, 2019 2:56 PM ET.
Review this version.

Section I: General Study Information

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Institute of Education Sciences

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IRB name: New England IRB
IRB approval date: 2017-05-08
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Other registration name:
Other registration date:
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Study start date: 2016-09-27
Study end date: 2022-07-27

Intervention start date: 2017-08-01

Timing of entry: Prior to analysis of outcome data
Brief abstract:
The U.S. Department of Education’s Institute of Education Sciences (IES) contracted with Mathematica and its partners to conduct a random assignment study of individualized instructional feedback based on video observations of teachers’ classrooms. The study’s intervention provider--Teachstone--provides individualized coaching to treatment group teachers through its MyTeachingPartner program. We estimate the impact of the individualized feedback on student achievement (as measured by math and English language arts test scores) and teachers’ classroom practices (as measured by observation scores from the Classroom Assessment Scoring System [CLASS]).

Keywords: Video observations, instructional coaching, coaching cycles, teacher feedback

Comments: In the first year of the study (2017-2018), we recruited novice 4th- and 5th-grade teachers from districts that did not provide coaching supports that were similar to the study intervention. We randomly assigned teachers to receive ten cycles of coaching from Teachstone or to be part of a business-as-usual control group, which received their districts’ typical professional development and support. In the second year of the study (2018-2019), we recruited schools from districts that did not provide coaching supports that were similar to the study intervention. We asked them to select either their 4th or 5th grade to be part of the study, and then we randomly assigned schools to have teachers in the selected grade receive either eight coaching cycles, five coaching cycles, or to be part of a business-as-usual control group, which received their districts’ typical professional development and support. See Section II for more information on the control group.

Due to limited sample sizes in the study’s first year, the first year sample will only contribute to exploratory analyses. The design registry entry thus focuses on the sample from the second year of the study that will contribute to the confirmatory analyses.

Section II: Description of Study

Type of intervention:
Professional Development

Topic area of intervention:
Mathematics and Science Education, Reading and Writing

Number of intervention arms:
2

Target school level of intervention:
4, 5

Target school type:
Rural, Urban, Suburban

Location of implementation:
United States: West, Midwest, Northeast, South

Further description of location:

Brief description of intervention arm 1:
Teachers in schools that were randomly assigned to the first intervention arm received 8 cycles of coaching. Each cycle of coaching includes five steps:
1. The study team records a video of the teacher’s classroom.
2. The coach watches the video, selects three short video clips, and writes comments and reflection questions for each clip.
3. The teacher watches the clips and responds in writing to the coach’s questions.
4. The coach holds a one-on-one discussion with the teacher via phone or video call to discuss the video clips, provide feedback, and develop an action plan; each discussion session will last around 30-45 minutes.
5. The coach sends the teacher a written summary of the feedback and the action plan.

**Brief description of intervention arm 2:**
Teachers in schools that were randomly assigned to the second intervention arm received 5 cycles of coaching. The steps in the coaching cycles for intervention arm two are the same as those listed for intervention arm one.

**Brief description of comparison condition:**
Teachers in schools that were randomly assigned to the control group did not receive any additional coaching through the study. Districts and schools were instructed to provide their usual teacher supports, including coaching (if it was offered), to teachers in both treatment and control schools.

**Comparison condition:** Business-as-usual

**Comments:** When recruiting districts for the study, we excluded districts that were already planning to provide intensive coaching and feedback to teachers that was similar to the coaching and feedback provided by the study intervention (more than four 15-minute observations with feedback provided). We instructed district and school staff to continue to provide all the typical professional development and supports to all teachers in the study.

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**Section III: Research Questions**

**Confirmatory research questions:**

**Question 1**
What is the impact on 4th- and 5th-grade math achievement of providing teachers with 8 cycles of feedback based on video recordings of their classroom practices, compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?

**Question 2**
What is the impact on 4th- and 5th-grade math achievement of providing teachers with 5 cycles of feedback based on video recordings of their classroom practices, compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?

**Question 3**
What is the impact on 4th- and 5th-grade reading achievement of providing teachers with 8 cycles of feedback based on video recordings of their classroom practices, compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?

**Question 4**
What is the impact on 4th- and 5th-grade reading achievement of providing teachers with 5 cycles of feedback based on video recordings of their classroom practices, compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?

**Question 5**
What is the impact on teacher practice of providing 4th- and 5th-grade teachers with 8 cycles of feedback based on video recordings of their classroom practices, compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?
Question 6
What is the impact on teacher practice of providing 4th- and 5th-grade teachers with 5 cycles of feedback based on video recordings of their classroom practices, compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?

Exploratory research questions:

Question 1
What is the impact of providing novice teachers with 10 cycles of feedback based on video recordings of their classroom practices, compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?

Question 2
What is the impact of providing teachers with feedback based on video recordings of their classroom practices (5, 8, or 10 cycles), compared to a business-as-usual control condition, in which teachers received their districts’ typical professional development and support?

Question 3
How do the effects of intensive feedback vary with the amount of feedback provided (8 cycles vs. 5 cycles)?

Question 4
Do the effects of intensive feedback persist after the feedback is complete?

Question 5
Is intensive feedback for teachers more effective for some types of students and teachers than others?

Question 6
What implementation or contextual factors are associated with the impacts of the intervention?

Question 7
Is it worth the additional cost for districts to provide 8 cycles of feedback instead of 5 cycles? How does the cost effectiveness of these interventions compare with that of other programs or strategies to improve student achievement?

Comments:

Section IV-A: Study Design (Selection)

Study Design:
Randomized Trial (RT)

Comments:

Section IV-B starts on the next page.
Section IV-B: Study Design (Input)

Unit of random assignment of intervention:
School

Assignment within blocks or selected strata:
Yes

Define the natural blocks or purposefully selected strata:
District

Probability of assignment to treatment the same across blocks or strata:
No

Probability of assignment to treatment:
In most cases, schools had an equal probability of being assigned to each study group (8-cycle treatment, 5-cycle treatment, and control). We used a clustered random assignment approach, in which we clustered similar schools together in groups of three and randomly assigned one school in each cluster to each of the three study groups. In some cases, when we were randomly assigning a small number of schools in a district, there was a slightly higher probability of assignment to the control group, to ensure there were at least 2 control group schools per district. For example, in a district with four participating schools, each would have a 50 percent chance of assignment to the control group and a 25 percent chance of assignment to either of the two treatment groups.

Unit outcome data measured:
Student

Intermediate clusters between unit of random assignment and unit of measurement:
Yes

Description:
The intermediate cluster is the classroom or teacher.

Design Classification:
RT: Multisite (Blocked) Cluster Randomized Trial

Comments
Randomization was carried out differently in the two years of the study. The primary design (used in the second year) was school-level random assignment. Principals of participating schools selected either their 4th grade or their 5th grade to be part of the study, and then the study team randomized the school to one of the two treatment groups or the control group. In schools assigned to a treatment group, all teachers in the preselected grade were expected to participate in the study. In the first year of the study, the study team recruited individual teachers to participate, and random assignment was at the teacher level.

Section V starts on the next page.
Section V: Sample Characteristics

Approximate number of students per intermediate cluster: 25

Approximate number of intermediate clusters per school: 3.1

Approximate number of schools in the comparison condition within each district: 2.7

Approximate number of schools in the intervention arm 1 within each district: 2.5

Approximate number of schools in the intervention arm 2 within each district: 2.6

Number of districts: 14

Certain students that were targeted for the study: No

Certain students that were excluded from the study: No

Certain intermediate clusters that were targeted for the study: Yes - Teachers in grades 4 or 5 who taught math and/or English language arts were targeted for the study.

Certain intermediate clusters that were excluded from the study: Yes - Teachers who taught only self-contained special education classes or taught exclusively in a language other than English were excluded from the study. In one district, we also excluded teachers in their first year of teaching.

Certain schools that were targeted for the study: No

Certain schools that were excluded from the study: No

Certain districts that were targeted for the study: Yes - To meet the study’s sample size requirements, we focused recruitment efforts on relatively large districts with a sufficient number of elementary schools. We used the Common Core of Data to identify districts that had approximately 20 or more schools serving fourth and fifth grades. To help ensure geographic diversity, we classified these districts by Census region and prioritized the largest districts in each region for our initial recruitment outreach.

Certain districts that were excluded from the study: Yes - We excluded districts that were already planning to provide intensive coaching and feedback to teachers that was similar to the coaching and feedback provided by the study intervention.

Comments

Section VI-A starts on the next page.
Section VI-A: Outcomes (Selection)

Confirmatory question 1 - number of outcome measures: 1
Confirmatory question 2 - number of outcome measures: 1
Confirmatory question 3 - number of outcome measures: 1
Confirmatory question 4 - number of outcome measures: 1
Confirmatory question 5 - number of outcome measures: 3
Confirmatory question 6 - number of outcome measures: 3

Comments:

Confirmatory Question 1, Outcome Measure 1

Outcome domain: Student Achievement - Mathematics
Minimum detectable effect size: 0.13
Outcome measure: Math achievement
Scale of outcome measure: Continuous
Normed or state test: Yes
Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 2, Outcome Measure 1

Outcome domain: Student Achievement - Mathematics
Minimum detectable effect size: 0.13
Outcome measure: Math achievement
Scale of outcome measure: Continuous
Normed or state test: Yes
Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 3, Outcome Measure 1

Outcome domain: Student Achievement - Literacy
Minimum detectable effect size: 0.13
**Outcome measure:** Reading or English language arts achievement

**Scale of outcome measure:** Continuous

**Normed or state test:** Yes

**Same outcome measure in treatment and comparison groups:** Yes

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**Confirmatory Question 4, Outcome Measure 1**

**Outcome domain:** Student Achievement - Literacy

**Minimum detectable effect size:** 0.13

**Outcome measure:** Reading or English language arts achievement

**Scale of outcome measure:** Continuous

**Normed or state test:** Yes

**Same outcome measure in treatment and comparison groups:** Yes

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**Confirmatory Question 5, Outcome Measure 1**

**Outcome domain:** Classroom practices

**Minimum detectable effect size:** 0.60

**Outcome measure:** Total CLASS score

**Scale of outcome measure:** Continuous

**Normed or state test:** No

**Test-retest reliability:** N/A

**Internal consistency:** N/A

**Inter-rater reliability:** N/A

**Same outcome measure in treatment and comparison groups:** Yes

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**Confirmatory Question 5, Outcome Measure 2**

**Outcome domain:** Classroom practices

**Minimum detectable effect size:** 0.60

**Outcome measure:** CLASS score-classroom organization domain

**Scale of outcome measure:** Continuous
Normed or state test: No
Test-retest reliability: N/A
Internal consistency: N/A
Inter-rater reliability: N/A
Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 5, Outcome Measure 3

Outcome domain: Classroom practices
Minimum detectable effect size: 0.60
Outcome measure: CLASS score-instructional and emotional support domain
Scale of outcome measure: Continuous
Normed or state test: No
Test-retest reliability: N/A
Internal consistency: N/A
Inter-rater reliability: N/A
Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 6, Outcome Measure 1

Outcome domain: Classroom practices
Minimum detectable effect size: 0.60
Outcome measure: Total CLASS score
Scale of outcome measure: Continuous
Normed or state test: No
Test-retest reliability: N/A
Internal consistency: N/A
Inter-rater reliability: N/A
Same outcome measure in treatment and comparison groups: Yes
Confirmatory Question 6, Outcome Measure 2

Outcome domain: Classroom practices

Minimum detectable effect size: 0.60

Outcome measure: CLASS score-classroom organization domain

Scale of outcome measure: Continuous

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: N/A

Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 6, Outcome Measure 3

Outcome domain: Classroom practices

Minimum detectable effect size: 0.60

Outcome measure: CLASS score-instructional and emotional support domain

Scale of outcome measure: Continuous

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: N/A

Same outcome measure in treatment and comparison groups: Yes

Comments:

Section VII starts on the next page.
Section VII: Analysis Plan

Baseline data collected prior to start of intervention: Yes

Description of baseline data:
Students' baseline test scores, demographic information, English learner status, and special education status. Teachers' baseline experience, feelings of preparedness, and CLASS scores.

Covariates to include at the student level in the model:
Gender, Free/reduced lunch status, Race, Grade, English Language Learner Status, Special Education Status, Student Pretest

Covariates to include at the intermediate cluster level in the model:
We will include baseline measures of years of teaching experience, feelings of preparedness, and teachers' CLASS scores

Covariates to include at the school level in the model:
We will include school-level covariates, including school enrollment and teacher-student ratios, from the Common Core of Data and EDFacts.

Analytic model:
Uploaded in Section VIII.

Plan to handle cases with missing outcome data:
Delete cases with missing data for the outcome being analyzed

Planned multiple comparisons adjustment, confirmatory question 5 (Teacher Outcome):
No

Planned multiple comparisons adjustment, confirmatory question 6 (Teacher Outcome):
No

Comments:

Section VIII: Additional Materials
Right click to open files in a new window.

Links

No links have been added yet.

Files

File Name: Teacher Video impact regression models.pdf
Description:

Comments