MATHEMATICA
Policy Research

Impact Study of Feedback for Teachers Based on Classroom Videos

Part A: Supporting Statement for Paperwork Reduction Act Submission

May 2, 2017

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TABLES

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PART A. SUPPORTING STATEMENT FOR PAPERWORK REDUCTION ACT SUBMISSION

This package requests clearance for data collection activities to support a rigorous evaluation of video-based classroom observations and feedback for novice and early career teachers. This evaluation is being conducted by the Institute of Education Sciences (IES), National Center for Education Evaluation, U.S. Department of Education (ED). It is being implemented by Mathematica Policy Research, Inc. (Mathematica) and its partners: Clowder Consulting, LLC; Decision Information Resources, Inc. (DIR); Educopia; IRIS Connect; Pemberton Research; WestEd; and Teachstone.

The goal of this evaluation is to examine the impact of video-based observations and feedback on the classroom practices and student achievement of novice teachers (in their first year of teaching) and early career teachers (in their second through fourth years of teaching). This study provides an important test of whether intensive, individualized support for teachers improves their instructional practices and ultimately student achievement. By focusing on novice teachers, the study can inform both teacher induction policies and potentially teacher preparation programs. Examining the impact of this intervention on novice and early career teachers can also inform the effectiveness of providing individualized feedback as a model for teacher professional development programs.

The evaluation will include implementation and impact analyses. The implementation analysis will use information on teachers' participation, the amount and type of feedback received, and teaching practices covered to document program implementation.[1] We will also use responses to the teacher survey to describe teachers' professional support and development experiences. The impact analysis will draw on data from teacher surveys, assessments of teachers' pedagogical knowledge and their attitudes towards teaching, video observations of their classroom practices,[2] and district administrative records.

This package provides a detailed discussion of the procedures for these data collection activities and copies of the forms and instruments developed by the study team.

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[1] We are not requesting OMB approval for the collection of this information because they will be collected by the study team and will not impose any burden on teachers or district staff.

[2] Ibid

Justification

A1.   Circumstances necessitating the collection of information

a.   Policy context and statement of need

The specific legislation authorizing this data collection includes Title II sections 2001-2002 and Title VIII section 8042 of the Elementary and Secondary Education Act of 1965 (ESEA), which permits ESEA program funds to be used to evaluate activities that are authorized under this act. The Every Student Succeeds Act (ESSA), which reauthorized ESEA, emphasizes the importance of teacher quality in improving student achievement. In particular, Title II, Part A of ESEA—the Improving Teacher Quality State Grants program—provides funds to states to prepare, train, and recruit high-quality teachers. One allowable use of Title II, Part A funds is carrying out activities that "provide support to teachers or principals, including support for teachers and principals new to their profession."

There is little evidence to guide districts and policymakers on the most promising approaches to supporting new teachers. Research has consistently found that novice teachers are less effective than experienced teachers at raising student achievement (Boyd et al. 2006; Hanushek et al. 2005; Kane et al. 2008). However, rigorous, large-scale evaluations suggest that content-focused professional development for teachers at various experience levels does not meaningfully influence teacher effectiveness (Garet et al. 2008, 2011, 2016). In addition, there are inconsistent findings regarding the efficacy of programs that provide comprehensive induction to new teachers (Cohen and Fuller 2006; Glazerman et al. 2010; Rockoff 2008).

Providing individualized feedback to teachers may be an effective strategy for supporting novice and early career teachers. Recent small-scale studies found that providing individualized feedback to teachers based on classroom observations improved student achievement (Taylor and Tyler 2012; Steinberg and Sartain 2015; Allen et al. 2011, 2015; Campbell and Malkus 2011). In addition, surveys show that educators prefer this type of support over more traditional forms of professional development (Bill & Melinda Gates Foundation 2014; Parise et al. 2015). Providing individualized feedback based on video recordings rather than live classroom observations may be particularly promising, given the labor- and resource-intensive nature of the feedback process. Using video recordings allows observers to conduct observations and provide feedback at times and locations that are convenient to them, and allows teachers to reflect on their practices in new ways (Greenberg et al. 2015; Roth et al. 2011; Sherin and van Es 2009a; Sherin et al. 2009b).

Despite this promise, policymakers and educators lack evidence on the effectiveness of video-based instructional feedback. This study will address that gap by providing rigorous evidence on the effectiveness of feedback and coaching based on videos of classroom instruction for novice and early career teachers.

b.   Treatment

This study will measure the impact of an intervention that provides intensive feedback to teachers based on video recorded observations of their instruction. The study team will video record the classroom instruction of teachers assigned to receive the intervention multiple times during the year, and send the videos to the intervention provider. Coaches from the intervention

provider will review the videos using an observation instrument to measure these teachers' performance on a targeted set of teaching practices. Coaches will use a consistent, systematic approach to develop written feedback for teachers that includes individualized actionable steps that focus on improving the teachers' performance on one or more of the targeted teaching practices. Based on videos of their teaching in their classroom, teachers will participate in one-on-one sessions with their coach to review the teacher's performance and provide feedback. Teachers will also have access to the videos of their classroom instruction.

We will evaluate two versions of the intervention – the full intervention and a less intensive version of the intervention. The full and less intensive versions of the interventions will differ in the number of feedback and coaching sessions that the teachers will receive from the coach. Teachers assigned to the less intensive version of the intervention will participate in 5 feedback cycles that include one-on-one sessions with a coach to review the teacher's performance and provide feedback. Teachers assigned to the full version of the intervention will participate in an additional 5 feedback cycles and one-on-one sessions with a coach to review the teacher's performance and provide feedback – for a total of 10 sessions over the course of the school year.

This study is evaluating two versions of the intervention in order to provide districts and preparation programs with information on how to efficiently allocate their resources, if they choose to implement this type of intervention. For example, if the study finds positive impacts for the full intervention, but not the less intensive intervention, it suggests that the extra cost of hiring or using coaches to provide more feedback and coaching sessions with teachers is needed to achieve an impact. On the other hand, if the less intensive intervention is as effective as the full intervention in improving teacher practices and student achievement, districts and preparation programs could implement the less intensive intervention, which requires fewer resources, and achieve the same impact as the full intervention.

c.   Study design and research questions

This study will use a random assignment design to estimate the impact of video-based observations and individualized feedback on teachers' classroom practices and student achievement. The study will recruit 200 novice teachers from 12 districts for the first year of the study.[3] These teachers will be randomly assigned to one of two groups – the full intervention and a control group which receives none of the intervention supports. In the following year, we will randomly assign approximately 300 early career teachers into one of three groups – to the full intervention, the less intensive version of the intervention (see descriptions in the previous section) or the control group. The early career teacher sample will exclude novice teachers who participated in the study in the prior year. This study design will allow us to (1) estimate the impact of the full intervention (compared to the control group) for novice teachers, (2) estimate the impact of two versions of the intervention (compared to the control group), and (3) examine the relative effectiveness of the two versions of the intervention for early career teachers. The study will also support and monitor program implementation to ensure high quality implementation. It will include implementation analyses which will provide context for

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[3] Appendices F and G contain copies of letters that will be used to inform and recruit districts and teachers.

interpreting impact results and shedding light on the mechanisms through which the interventions may affect teacher and student outcomes.

The primary research questions for this study are:

1. What is the impact on teaching practices and student achievement of providing **novice** teachers with 10 feedback and coaching sessions based on video recordings of their classrooms (the full intervention)?

2. What is the impact on teaching practices and student achievement of providing teachers **early in their career** (years 2–4) with 10 feedback and coaching sessions based on video recordings of their classrooms (the full intervention)?

3. What is the impact on teaching practices and student achievement of providing early career teachers with 5 feedback and coaching sessions based on video recordings of their classrooms (the less intensive intervention)?

The evaluation will also address the following secondary research questions:

4. Were the feedback and coaching interventions implemented with fidelity? How did the experiences of teachers in the treatment and control groups compare?

5. What challenges did teachers encounter?

6. What is the impact of the interventions on key intermediate outcomes, including teachers' knowledge of teaching practices and their skill at implementing the practices?

7. What is the impact of ten versus five feedback and coaching intervention sessions for early career teachers?

8. How do impacts vary for teachers with different preparation experiences and background characteristics?

9. What baseline teacher practices appear most important for effective teaching? Is teachers' knowledge of teaching practices predictive of their future effectiveness? What teacher beliefs and attitudes are most important for effective teaching?

10. Could screening teachers for certification or hiring based on instructional practices, knowledge, attitudes, or beliefs help improve teacher effectiveness?

11. Do intervention effects on teachers' knowledge of practices or their skill in implementing them appear to explain impacts on student achievement?

12. How cost effective are the interventions?

d.   Data collection

This study includes multiple data collection efforts. Data for the impact analyses will be collected from districts, schools, and teachers. The study team will also collect data that will be used to describe implementation fidelity. Since we are video recording classrooms, we will also collect permission from classroom students' parents to include their child in video recordings. All of these data are described below and summarized in Table A.1.

Table A.1. Data collection

Instrument	Data need	Respondent	Mode	Schedule
Teacher knowledge and attitudes/beliefs assessments	1) Teachers' pedagogical knowledge and ability to apply that knowledge (Praxis) (2) Teachers' attitudes and beliefs related to teaching in high-poverty schools (Haberman)	Novice teachers only	(1) Two hour computer-based Praxis Principles of Learning and Teaching (PLT): Grades K–6 (2) 30-minute computer-based Haberman Star Teacher Pre-Screener	(1) Baseline (summer 2017) and follow-up (spring 2018) (2) Baseline only (summer 2017)
Teacher participation forms	Teachers' preparation and teaching experience, edTPA score, beliefs of their preparedness to manage classroom behavior and teach math and English/language arts	Teachers	15-minute paper enrollment and eligibility form	Summer 2017 and summer 2018
Teacher survey	Receipt of professional development and feedback (amount, quality, usefulness), teacher supports, experience with program (characteristics, usefulness, challenges) and, background and demographic information	Teachers	30-minute web-based survey	Spring 2018 and spring 2019
District administrative records	Student test scores and characteristics (such as gender, age, and English language learner status), teacher-student links	District	Electronic records of scores on standardized math and reading tests, data on student characteristics	Fall 2018 and fall 2019
Student enumeration form	List of students in study teachers' classes used to prepare parent permission packets	School	Paper or electronic list of students enrolled in study teachers' classrooms	Fall 2017 and fall 2018 (updated with new arrivals during 2017-2018 and 2018-2019 school years by field staff)
Parent permission forms	Active and passive permission forms (depending on district requirements) for parent or guardian to document consent for student to be included in classroom instruction video recordings	Parent or guardian	Paper permission form indicating consent or non-consent for students to be included in video recordings	Fall 2017 and fall 2018 (distributed to new arrivals during 2017-2018 and 2018-2019 school years by teachers and field staff)
Videos of teachers' classroom instruction	Classroom Environment and Instruction domains; scores on items in those domains most relevant for teaching practices targeted by the intervention	Study team records treatment and control group classrooms and codes recordings using two rubrics	Computer-based observation rubrics used to score classroom videos	Score three baseline videos from fall and three follow-up videos from spring (for 2017–2018 and 2018–2019 school years)
Coaching logs	Teaching practices covered, coaching activities, feedback session length, goals, and action plans	Coaches	Electronic form completed by coaches after each feedback session	Throughout the 2017-2018 and 2018-2019 school years
Feedback session observations	Teaching practices covered; extent to which coach used videos, provided actionable feedback, set goals, and developed action plans	Study team	Closed-ended electronic protocol completed for a randomly selected set of feedback sessions	Throughout the 2017-2018 and 2018-2019 school years

Assessment of teachers' knowledge of teacher practices. All novice teachers in the study (treatment and control groups) will take the Praxis Principles of Learning and Teaching (PLT): Grades K-6 assessment at baseline during the training session in summer 2017 and at follow-up in spring 2018. We will ask teachers who have already taken the Praxis PLT as part of their teacher licensure, to give us permission to obtain their scores from the Educational Testing System (ETS). Teachers whose scores may be obtained from ETS will not be asked to retake the assessment in the summer of 2017. This two-hour computer-based exam measures teachers' knowledge of teaching practices and their ability to apply that knowledge. The test is a valid, reliable, policy-relevant measure used for teacher licensure in 17 states, with a reasonable administration burden. (Teacher assessments are not included in the appendices because they are copyrighted.) We will use the Praxis PLT to describe teachers' knowledge of teaching practices at baseline and to measure the impact of the feedback and coaching interventions on their knowledge of practices. The Praxis PLT scores will also be used in an analysis that measures whether changes in teachers' knowledge of practices explains any impacts on observed teacher practices and student achievement. Data obtained from the Praxis PLT will be used to address research question 6, 9-10, and 11.

Assessment of teachers' attitudes and beliefs. All novice teachers in the study will also take the Haberman Star Teacher Pre-Screener during the training session in summer 2017. This is a 30-minute computer-based questionnaire that assesses the attitudes and beliefs needed to effectively teach low-income students in urban areas. The Haberman screener is used to screen teachers for hiring in more than 200 districts. We will use the Haberman Star Teacher Pre-Screener to describe teacher attitudes and beliefs and to measure whether these attitudes and beliefs are related to variation in the impact of the interventions. Data obtained from the Haberman Star Teacher Pre-Screener will be used to address research questions 9-10.

Teacher participation forms. All teachers participating in the study will complete and sign a teacher participation form prior to random assignment. By signing this form, the teacher agrees to participate in the study, cooperate with data collection activities, and to participate in intervention activities if assigned to the feedback and coaching group (Appendix A). There is one form for novice teachers and one form for early career teachers. Both forms gather key information on teaching assignment for the upcoming year, teacher preparation (route to teaching), years of teaching, feedback received on their teaching, and level of confidence to teach math and English/language arts and to manage student behavior. This form also asks teachers who have taken the edTPA performance assessment to provide their score, and (for novice teachers who have already taken the Praxis PLT assessment) to give the study team permission to obtain their Praxis PLT score from ETS. Teacher baseline characteristics can be used to determine eligibility and to create similar pairs or groups of teachers to implement the random assignment plan.

Teacher survey. The teacher survey will provide information about the amount, quality and usefulness of the professional development received by teachers (Appendix B). The survey will also provide insights on other teacher supports, teacher preparation, and background characteristics. The survey will be conducted in spring 2018 and spring 2019. The survey will take approximately 30 minutes to complete. The teacher survey will be used to describe teachers' background characteristics, teacher preparation experiences, and their experiences with feedback and coaching during the school year. These data will allow us to examine whether the impact of the interventions differed depending on teachers' preparation experiences (for example, the amount of time they received feedback on their teaching as a teacher candidate) and their background characteristics. We can also assess how much feedback and coaching teachers received and any implementation challenges they faced. In addition, we will use the survey to assess the interventions' impacts on intermediate outcomes such as: teachers' feelings of preparedness for teaching and the extent to which teachers receive support for teaching. Data obtained from the teacher survey will be used to answer research questions 4-6 and 8-10.

District administrative records. We will collect student test scores, attendance, demographic information such as gender, age, and English Language Learner status (Appendix C). We will also collect data to confirm student-teacher links as well as what subject(s) and grade(s) the teachers are teaching. This data will be collected in fall 2018 and fall 2019. We will use state test score data in reading and math to estimate the impact of the feedback and coaching interventions on student achievement, the key outcome of interest. We will estimate impacts on the achievement of the students taught by study teachers at the end of each intervention year (2017-2018 and 2018-2019) as well as one year after the intervention is complete for the novice teacher sample. Information on students' demographic and socioeconomic characteristics (e.g., gender, age, free and reduced-price lunch status) will be used to describe the students in the study and to develop more precise impact estimates. We will use data linking teachers to students to identify which students were assigned to each treatment and control teacher. These data will also be used to measure impacts for subgroups to measure the relationship between teacher effectiveness and teachers' knowledge of practices and their skill in implementing practices. Data obtained from district administrative records will be used to address research questions 1-3 and 7-11.

Student enumeration form. A list of students in study teachers' classrooms will be obtained at the start of each academic year in fall 2017 and fall 2018 to develop parent permission packets (Appendix D). The list will be updated during the course of the school year and permission packets will be distributed by field staff to new arrivers during the 2017-2018 and 2018-2019 school years.

Parent permission forms. We will distribute paper permission forms for parents or guardians. In districts that require active consent, we will collect permission forms from parents or guardians to document permission for students to be included in classroom instruction video recordings (Appendix E). In districts that permit passive consent, we will collect forms from parents who indicate that they do not give permission for their child to be included in classroom instruction video recordings. The permission forms will be collected in fall 2017 and fall 2018 and permission forms will be distributed to new arrivals by teachers and field staff during the 2017-2018 and 2018-2019 school years.

Classroom observations scores. We will video record treatment and control teachers' classrooms three times at the beginning of the school year (to obtain a baseline measure of teacher classroom practices) and three times at the end of the school year (for a year-end outcome measure of teacher classroom practices), for both years of the study (the 2017-2018 and 2018-2019 school years). To assess the quality of teachers' instructional practices, we will score each video using two formal observation rubrics: (1) the observation rubric used by the coaching provider, and (2) a valid classroom observation measure. The video recording and scoring of the videos will be done by study staff. There is no respondent burden associated with this data collection activity.

Baseline and year-end classroom observation scores will be used to measure the impact of the interventions. Baseline measures will provide a measure of teachers' practices before participating in the program, and controlling for baseline practices in our analytic models will increase the precision of the impact estimates. In addition to controlling for teachers' baseline observation scores in the impact models, we will use these scores for two additional analyses. First, we will examine whether the quality of teachers' baseline teaching practices is correlated with variation in program impacts. Results from these analyses will be useful for understanding whether the impact of the interventions may depend on the teacher's initial level of effectiveness. Second, we will explore whether changes in teacher practices mediate impacts on student test scores. These results will provide important evidence about the potential mechanisms through which the interventions may influence student achievement. Data obtained from classroom observations will be used to address research questions 6, 8-11.

Coaching logs. We will use information from web-based coaching logs to document key aspects of the feedback sessions that coaches hold with teachers. For example, the logs will include information discussed during the feedback session on (1) practices that the teacher needs to improve, (2) video clips from the teacher's classroom (provided to the teacher in advance of the feedback session), and (3) steps outlined in the action plan. We will assess if the sessions were implemented as intended based on the teaching practices covered, the types of coaching activities implemented, and the length of the feedback session. In addition, these data will be used to examine whether implementation features are associated with impacts on teacher and student outcomes. Data from coaching logs will be used to address research question 4. The study coaches will complete the study team developed logs. There is no respondent burden associated with this data collection activity.

Feedback session observations. We will collect data from a randomly selected set of feedback sessions between coaches and teachers. We will collect information on teaching practices covered, the extent to which coaches used videos, the type of feedback that was provided, the goals that were set, and the action plan developed. The data will be collected by the study team using a closed-ended electronic protocol. We will use the observations of feedback sessions to describe implementation of the feedback sessions and assess implementation fidelity. For example, we will describe whether coaches provided feedback focused on the targeted practices, how long the feedback session lasted, and the format of the feedback session. Data from feedback session observations will be used to address research question 4. The study team will observe the feedback sessions and collect the data. There is no respondent burden associated with this data collection activity.

A2.   Purpose and use of data

Data for this evaluation will be collected and analyzed by Mathematica and its partners. This work will be completed under contract number ED-IES-16-C-0021. The data will be used to address the study's research questions, as shown in Table A.2.

Table A.2. Research questions and data sources

Research questions (RQs)	Data sources
Experimental impact analyses	
Primary outcomes	
What is the impact on teaching practices and student achievement of providing **novice** teachers with 10 feedback and coaching sessions based on video recordings of their classrooms (the full intervention)? (RQ 1)	District administrative records
What is the impact on teaching practices and student achievement of providing teachers **early in their career** (years 2–4) with 10 feedback and coaching sessions based on video recordings of their classrooms (the full intervention) ?(RQ 2)	District administrative records
What is the impact on teaching practices and student achievement of providing early career teachers with 5 feedback and coaching sessions based on video recordings of their classrooms (the less intensive intervention)? (RQ 3)	District administrative records
Intermediate outcomes	
What is the impact on intermediate outcomes, including teachers' knowledge of teaching practices, their skill at implementing the practices, and their feelings of preparedness for teaching? (RQ 6)	Classroom observations Praxis PLT Teacher survey
Implementation analyses	
Were the interventions implemented with fidelity? (RQ 4)	Extant coaching provider records
What challenges did teachers encounter? (RQ 5)	Teacher survey
Other analyses	
Subgroup analysis	
What is the impact on student achievement of 10 versus 5 sessions of the intervention (RQ 7)?	District administrative records
How do impacts vary for teachers with different preparation experiences and background characteristics? (RQ 8)	District administrative records Teacher survey Classroom observations Teacher participation form
Other quantitative analysis	
What baseline teacher practices are most important for effective teaching and are teachers' knowledge of teaching practices and attitudes and beliefs predictive of their future effectiveness (RQ 9)?	District administrative records Classroom observations Teacher survey
Could screening teachers based on these characteristics increase average teacher effectiveness?(RQ 10)	Praxis PLT and Haberman Teacher participation form
Do intervention effects on specific teacher practices or competencies appear to explain impacts on student achievement? (RQ 11)	District administrative records Classroom observations Praxis PLT
How cost effective are the interventions? (RQ 12)	Study team records

The evaluation will be completed in six years. Table A.3 shows the schedule of data collection activities and the overall evaluation timeline.

Table A.3. Schedule of major study activities

Activity	Summer 2017	Fall 2017	Spring 2018	Summer 2018	Fall 2018	Spring 2019	Summer 2019	Summer 2020	Summer 2021	Spring 2022
Collect teacher participation forms	X			X						
Collect teacher summer orientation attendance	X			X						
Conduct teacher assessments	X		X							
Obtain student lists		X			X					
Obtain parent permission		X			X					
Collect classroom video recordings		X	X		X	X				
Conduct teacher survey			X			X				
Collect administrative records data from districts				X			X			
Prepare first report								X		
Prepare second report									X	
Prepare third report										X

A3.   Use of technology to reduce burden

The data collection plan is designed to obtain information in an efficient way that minimizes respondent burden. When feasible, we will gather information from existing data sources, using the most efficient methods available. Table A.4 provides information on the source, mode, length, and timing for each data collection activity.

We will ask teachers to complete a web-based survey. The web-based surveys will enable respondents to complete the data collection instrument at a location and time of their choice, and its built-in editing checks and programmed skips will reduce the level of response errors. We will also offer teachers the choice to respond to the survey by phone or in-person if they prefer.

We will ask districts to provide electronic copies of student records. While we will specify the required data elements, we will accept any format in which the data are provided, to reduce burden for the district. To help ensure study participants' confidentiality, we will store data at the Institute of Education Sciences (IES) Data Center, a secure data storage facility.

Table A.4. Source, mode, length and timing

Data source	Mode, length, and timing	Respondent group
Teacher assessments	Administered in summer 2017: (1) Two hour computer-based Praxis PLT teacher assessment, and (2) 30-minute computer-based Haberman Star teacher pre-screener.	Treatment and control Novice Teachers
Teacher Survey	30-minute web-based survey, with telephone and hard-copy options and in-person follow-up, administered in spring 2018 and spring 2019	Treatment and control Novice Teachers
Student records	Electronic student records data for prior school years, requested from districts in fall 2018 and fall 2019.	District staff

A4.   Efforts to avoid duplication of effort

No similar evaluations are being conducted and there is no equivalent source for the information to be collected. Moreover, the data collection plan reflects careful attention to the potential sources of information for this study, particularly to the reliability of the information and the efficiency in gathering it. The data collection plan avoids unnecessary collection of information from multiple sources. For example, student achievement will be measured using scores from state- or district-administered student assessments, instead of administering an assessment.

Information obtained from the classroom observation videos, teacher knowledge assessment, teacher participation forms, teacher survey, and parent permission forms is not available elsewhere. Teachers who have already taken the Praxis PLT and for whom we have obtained scores from ETS will not need to retake the assessment.

A5.   Methods of minimizing burden on small entities

No small businesses or entities will be involved as respondents.

A6.   Consequences of not collecting data

The data collection plan described in this submission is necessary for ED to conduct a rigorous evaluation of individualized feedback and coaching for teachers. Collecting these data will allow us to estimate the impact of the interventions on teachers' practices and student achievement. Additionally, the data will be used to understand how the provider implemented the coaching and feedback and how impacts vary based on the implementation of the interventions and teacher characteristics.

The consequences of not collecting specific data are outlined below:

- Without the **district administrative records,** we would have to administer student assessments instead of using their state math and reading test scores. Without information on student characteristics, we would not be able to fully describe the study sample or verify the effectiveness of teacher random assignment. Teacher-student links are necessary to estimate the impact of the intervention on student achievement.

- Without the videos of teachers' classroom instruction that will be used to create **classroom observation rubric scores,** we would not be able to measure the impact of feedback and coaching on teachers' practices. In addition, without these observation scores, we will not know if impacts on teachers' practices explain any impacts on student achievement.

- Without the **assessment of teachers' knowledge of teaching practices** and the **assessment of teachers' attitudes and beliefs**, we will not be able to determine how teachers' knowledge, attitudes, and beliefs are related to the effectiveness of the intervention. These data will also inform whether school districts could use information about teachers' knowledge, attitudes, and beliefs more effectively in hiring decisions. In addition, the follow-up test of teachers' knowledge will provide information about the intervention's impact on a key intermediate outcome—teachers' knowledge of teaching practices.

- Without the **teacher participation forms** and the **teacher survey,** we would not have the data needed for the sample design and to describe teachers' preparation experiences and background characteristics, implementation of the feedback and coaching during the school year, other teacher supports, and their feelings of preparedness and efficacy. Without these data we would not be able to compare the amount of feedback and coaching received by treatment and control teachers. The survey data will also allow us to assess whether the intervention is more effective for teachers with certain background characteristics.

A7. Special circumstances

There are no special circumstances associated with this data collection.

A8. Federal register announcement and consultation

a. Federal register announcement

A 60-day notice to solicit public comments was published in the Federal Register, Volume 82, No. 41, page 12450 on Friday, March 3, 2017.

To date, no public comments have been received.

The 30-day notice will be published to solicit additional public comments.

b. Consultations outside the agency

In formulating the intervention and evaluation design for the proposal for this evaluation, the study team sought input from several individuals with expertise in teacher preparation and support, including Suzanne Wilson, Pam Grossman, and Jim Knight.

Additionally, in collaboration with ED we will form a technical working group (TWG) to provide input on the study design, data collection instruments, analyses, and reports. This input will help ensure the study is of the highest quality and that findings are relevant to policymakers, school districts, and teacher preparation programs.

We will work with ED to select TWG members with expertise in teacher certification and preparation (including teacher preparation providers), teacher quality, teacher policy, and evaluation methods.

c.   Unresolved issues

There are no unresolved issues

A9. Payments or gifts

Incentives have been proposed for teachers participating in the study. The proposed amounts are within the incentive guidelines outlined in the March 22, 2005 memo, "Guidelines for Incentives for NCEE Evaluation Studies," prepared for OMB. To maximize the success of our data collection effort we will provide incentives to teachers to offset their time and effort with completing the data collection activities. Incentives are also proposed because high response rates are needed to make the study findings reliable. Based on feedback from a study on the feasibility of and design for this evaluation (conducted under another contract), we learned that many new teachers are likely to be eager to participate in the evaluation, and districts will be willing to encourage their new hires to participate. However, we are aware that teachers are the targets of numerous requests for data on a wide variety of topics from state and district offices, independent researchers, and the Department of Education. Although some districts will have solicited buy-in from teachers to participate in the evaluation, our recent experience with numerous teacher data collection efforts supports our view that obtaining teacher buy-in does not guarantee teachers will devote the time it takes to complete data collection activities, and monetary incentives increase the likelihood of their cooperation.

Teacher incentive for collecting parent permission forms. We propose providing teachers with an incentive for collecting parent permission forms allowing us to record students during the video observations. Teachers will receive $25 for distributing and collecting parent consent. Because it will be critical for the study to obtain parental permission for as many students in study classrooms as possible, we will offer teachers an additional $25 for collecting parent permission forms for at least 85 percent of their students. This represents a maximum of $50 for any one teacher (roughly $2 per student form and less than the NCEE $3 per low burden student report). We expect teachers will have to remind students and call or email parents to obtain 85 percent returns. Our goal is to ensure that we have as many students in the classroom as possible during the video recordings to accurately evaluate the teacher's performance during a typical day of instruction. Field staff will be responsible for collecting the permission forms from the teachers. We believe that a differential incentive to collect parent permission forms from students will motivate teachers to collect them.

Teacher respondent payment. We propose offering a $30 incentive to teachers who complete a web-based survey to acknowledge the 30 minutes required to complete the survey. The survey will be administered in spring 2018 to novice teachers and spring 2019 to early career teachers. The survey will collect data on novice and early career study sample teachers' professional development experiences, feelings of preparedness, pre-service training, certification, other background characteristics, and receipt of professional development and feedback (amount, quality, and usefulness).

Teacher assessment payments. Novice teachers will receive $100 for completing the two-hour Praxis PLT. We will administer the Praxis PLT two times—during the summer 2017 training session and within four weeks of the end of the 2017-2018 school year. In our evaluation of teachers from highly selective alternate route programs for IES, we achieved an 84 percent

response rate on the Praxis PLT using a similar incentive. Teachers will also receive $30 for completing the 30 minute Haberman Star assessment during the summer 2017 training session.

A10. Assurances of confidentiality

Mathematica and its research partners will conduct all data collection activities for this study in accordance with relevant regulations and requirements, which are:

- The Privacy Act of 1974, P.L. 93-579 (5 U.S.C. 552a)

- The Family Educational and Rights and Privacy Act (FERPA) (20 U.S.C. 1232g; 34 CFR Part 99)

- The Protection of Pupil Rights Amendment (PPRA) (20 U.S.C. 1232h; 34 CFR Part 98)

- The Education Sciences Institute Reform Act of 2002, Title I, Part E, Section 183

The research team will protect the confidentiality of all data collected for the study and will use it for research purposes only. The Mathematica project director will ensure that all individually identifiable information about respondents remains confidential. All data will be kept in secured locations and identifiers will be destroyed as soon as they are no longer required. All members of the study team having access to the data will be trained and certified on the importance of confidentiality and data security. When reporting the results, data will be presented only in aggregate form, such that individuals, schools, and districts are not identified. Included in all voluntary requests for data will be the following statement:

"Responses to this data collection will be used only for statistical purposes. The reports prepared for this study will summarize findings across the sample and will not associate responses with a specific district, school, or individual. We will not provide information that identifies you, your school, or your district to anyone outside the study team, except as required by law. Additionally, no one at your school or in your district will see your responses. While your participation in this study is voluntary, it is very important that you complete the questionnaire."

The following safeguards are routinely employed by Mathematica to carry out confidentiality assurances, and they will be consistently applied to this study:

- All Mathematica employees sign a confidentiality pledge (Appendix H) that emphasizes the importance of confidentiality and describes employees' obligations to maintain it.

- Personally identifiable information (PII) is maintained on separate forms and files, which are linked only by sample identification numbers.

- Access to hard copy documents is strictly limited. Documents are stored in locked files and cabinets. Discarded materials are shredded.

- Access to computer data files is protected by secure usernames and passwords, which are only available to specific users.

- Sensitive data is encrypted and stored on removable storage devices that are kept physically secure when not in use.

Mathematica's standard for maintaining confidentiality includes training staff regarding the meaning of confidentiality, particularly as it relates to handling requests for information, and providing assurance to respondents about the protection of their responses. It also includes built-in safeguards concerning status monitoring and receipt control systems. In addition, all data systems will be collected using the IES Data Center as the host in order to be compliant with all IT security requirements of IES.

The program is currently preparing a system of records notice (SORN) and a privacy threshold assessment (PTA) to assess the need for a privacy impact assessment (PIA). A PIA will be prepared if applicable. The data is to be stored both electronically and in paper copy. It is to be retrievable by ID and the data will be maintained and disposed of in accordance with the Department's Records Disposition requirements. The electronic file will kept in a password protected server. The paper copy will be kept in a locked file cabinet and all access to data in both electronic and paper form will be restricted to study staff on a need to know basis. The security protections for the content will be identified in the SORN.

A11. Justification for sensitive questions

No questions of a sensitive nature will be included in this study.

A12. Estimates of hours burden

Table A.5 provides an estimate of time burden for the data collections, broken down by instrument and respondent. These estimates are based on our experience collecting administrative data from districts and obtaining parent permission. The estimates for administering surveys to teachers and items in the teacher participation forms are based on pretest findings.

Table A.5. Estimated response time for data collection

Respondent/ Data request	Number of targeted respondents	Expected response rate (%)	Number of respondents	Unit response time (hours)	Total response time (hours/year) for 3 years	Total burden time (hours)
Districts[a]						
Student records data (1 time per round, rounds 1 and 2)	12	100	12	8.0	64	192
Teacher records data (1 time per round, rounds 1 and 2)	12	100	12	8.0	64	192
Schools						
Student lists (round 1 – 200 novice teachers)	200	100	200	1.0	66.7	200
Student lists (round 2 – 300 early career and 200 novice teachers)	500	100	500	1.0	166.7	500
Teachers[b]						
Summer 2017 teacher participation form collected from novice teachers (round 1)	200	100	200	0.25	16.7	50
Summer 2018 teacher participation form collected (round 2)	300	100	300	0.25	25	75
Spring 2018 teacher survey administered to novice teachers	200	85	170	0.5	28.3	85
Spring 2019 teacher survey administered to early career teachers	300	85	255	0.5	42.5	127.5
Parents						
Parent permission form (5,000 for round 1)	5,000	85	4,250	0.25	354.2	1,062.50
Parent permission form (7,500 for round 2)	7,500	85	6,375	0.25	531.3	1,593.75
Total (rounded)	**14,224[c]**		**12,274[d]**		**1,359**	**4,078**

[a] Depending on the district, administrative records data may be provided by another source, for instance the state.

[b] The burden estimates for teachers do not include the time for novice teacher assessments (PLT and Haberman).

[c] The total number of targeted respondents (14,224) is the sum of targeted responses across data requests from a total of 13,512 unique respondents including 12 districts, 500 schools, 500 teachers (participation form and survey requests), and 12,500 parents across the three years of implementation

[d] The total number of respondents (12,274) is the sum or responses received from 12 districts (student and teacher data requests), 500 schools, 500 teachers, and 10,625 parents across the three years of implementation. Although expected response to surveys for teachers is 85 percent (425 teachers), all 500 teachers enrolled in the study will complete a teacher participation form.

The number of targeted respondents and responses are 14,224 and 12,274, respectively and the annual number of responses is 4,091. The total burden is estimated at 4,078 or an estimated average annual burden of 1,359 burden hours calculated across 3 years. Teacher assessments are not calculated in the burden estimates.

The total of 4,078 hours includes the following efforts: up to 16 hours, annually for two years, for each of the 12 districts to assemble administrative records for students and teachers participating in the evaluation; up to 167 hours annually for class lists provided by schools; 15 minutes for an average of 250 teachers to complete teacher participation forms (with 200 in round 1 and 300 in round 2); 30 minutes annually for two rounds of the teacher surveys (85 percent of the anticipated samples of 200 teachers in round one and 300 teachers in round 2); and 15 minutes for up to 25 parents per teacher to review parent permission materials.

A13. Estimate of cost burden to respondents

There are no direct or start-up costs to respondents associated with this data collection.

A14. Annualized cost to the federal government

The total cost to the federal government for this study is $18,367,939. The estimated average annual cost—including recruiting districts, designing and administering all collection instruments, processing and analyzing the data, and preparing reports—is $3,061,323 (the total cost divided by the six years of the study).

A15. Reasons for program changes or adjustments

This is a new collection.

A16. Plans for tabulation and publication of results

a. Analysis plan

The evaluation will estimate the impact of the interventions on student and teacher outcomes and document program implementation. Additionally, the study includes several supplementary analyses to understand the relative effectiveness of the interventions based on key intervention and teacher characteristics. Below, we describe the main impact and implementation analyses.

Impact analyses. We will use regression models to estimate the impact of the interventions on student outcomes (standardized math and reading test scores) and teacher outcomes (teaching practices, pedagogical knowledge, and survey responses). Because the study has a randomized controlled trial design, comparing the outcomes of teachers and their students randomly assigned to intervention and control groups should yield unbiased estimates of the interventions' impacts. To increase the precision of our estimates, however, we will also control for student characteristics, teacher characteristics, and school characteristics. We will estimate the same models on several different subgroups of teachers to determine how program impacts vary by teacher experience, years participating in the program, and baseline characteristics. Results from the impact analyses will provide evidence about the effectiveness of the full and less intensive interventions at improving teacher practices and achievement.

Implementation analyses. We will conduct several implementation analyses. First, we will describe the interventions in terms of their intensity, teaching practices covered, use of videos and rubric ratings, and structure of the feedback sessions. Second, we will assess implementation fidelity, focusing on teacher participation, the amount and type of feedback received, and teaching practices covered. Third, we will measure the contrast in professional development and support experienced by teachers in the treatment and control groups. Finally, we will analyze teachers' perspectives on implementation challenges and on the quality of supports provided.

Understanding the implementation experiences and challenges of districts, schools, and teachers participating in the intervention will provide important information for districts and teacher preparation programs considering similar interventions. The implementation analyses will support replication of the interventions in other districts and teacher preparation programs and provide necessary context for impact results.

b.   Publication plan

We will prepare three reports presenting the results of these analyses. The first report, with a projected release date of June 2020, will describe the implementation of the intervention for novice teachers and report the intervention's impacts on teachers' perceptions of their preparedness for teaching, teaching practices, and student achievement at the end of the school year in which the intervention is delivered.

The second report, with a projected release date of June 2021, will contain similar analyses as those described for report one, but it will focus on implementation and impact findings for the early career teacher sample at the end of the intervention year and on impacts on novice teachers one year after intervention delivery. It will also include a cost-effectiveness analysis. Specifically, it will include the following analyses:

- impacts of the full intervention (10 feedback and coaching sessions) for a subset of early career teachers at the end of the intervention year;

- impacts of the less intensive intervention (5 feedback and coaching sessions) for a subset of the early career teachers at the end of the intervention year;

- impacts of the full intervention for one novice teachers a year after the intervention was delivered; and

- cost-effectiveness analysis.

The third report, with a projected release date of May 2022, will summarize findings from the first two reports and conduct additional analyses to further inform teacher preparation and professional development. These additional analyses include:

- impacts one year after early career teachers received the full or less intensive version of the intervention;

- impacts two years after novice teachers received the full intervention;

- correlational analyses to learn about the teaching practices and competencies most important for effective teaching;

- simulations of the effects of teacher screening criteria;

- correlational analyses to examine how key features of implementation relate to impacts; and

- mediation analyses to learn about the mechanisms through which the interventions influence student achievement.

Reports will be written in a style and format accessible to policymakers and practitioners and will comply fully with the standards set by the National Center for Education Statistics.

A17. Approval not to display the expiration date for OMB approval

The Institute of Education Sciences is not requesting a waiver for the display of the OMB approval number and expiration date. The study will display the OMB expiration date.

A18. Exception to the certification statement

No exceptions to the certification statement are requested or required.

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