84.305L: Low-Cost, Short-Duration Evaluation of Education Interventions

84.324L: Low-Cost, Short-Duration Evaluation of Special Education Interventions

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Transcript

(Slide 1)

Hello and welcome to this Institute of Education Sciences webinar about the Low-Cost, Short-Duration Evaluation of Education and Special Education Programs Interventions. My name is Sarah Brasiel, and I'm a program officer at the National Center for Special Education Research. I am also the contact for 84.324L grant program. Phil Gagne is a program officer at the National Center for Education Research, and he is the program contact for 84.305L grants.

I will be going through this webinar explaining a bit about the background of IES in this competition.

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Today I'm going to provide a brief overview of IES and its mission, then we'll talk about the grant program requirements and specifics, going through each section of the Project Narrative. Then we will take you through preparing and submitting an application.

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The legislative mission of IES is comprised of three components. IES was established by law in Congress in 2002 to do the following three things: describe the condition and progress of education in the United States, identify education practices that lead to improved academic achievement and access to opportunities, and evaluate the effectiveness of federal and other education programs.

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This graphic represents the organizational structure of IES. We are led by a Director, who receives advice and consultation from the National Board for Education Sciences. The Board consists of 15 voting members, who are appointed by the President and confirmed by the Senate. Our Standards and Review Office oversees a scientific peer review process for IES grant applications and IES reports.

We also have four centers within IES. The National Center for Education Statistics is the primary federal entity for collecting and analyzing data related to education. Within NCES, you may be familiar with the NAEP assessment, the National Assessment of Educational Progress. Under NCES, you'll also find many large national longitudinal datasets, including, for example, the Early Childhood Longitudinal Study.

The National Center for Education Evaluation and Regional Assistance conducts unbiased, large-scale evaluations of education programs supported by federal funds, provides technical assistance, and supports the development and use of research and evaluation through the United States. In NCEE, you will find the What Works Clearinghouse, (or WWC), and the Regional Educational Labs (RELs).

The two centers that award grants are highlighted here in blue, the National Center for Education Research, referred to as NCER, and the National Center for Special Education Research, or NCSER. The grant opportunities that we will be talking about today are managed through these two research centers.

You'll notice here that the research centers are separate from the Standards and Review Office, meaning that we program officers are not involved in the peer review process. So this allows us to work closely with you, providing technical assistance to you on your applications. We will discuss more about that later in this webinar.

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IES grant programs: The objective of our research grants is to answer four questions. What works to improve student educational outcomes, so we can disseminate what works? What does not work, so we can stop using it? What works for whom and where, so we can use it with the appropriate people in the appropriate places? We also want to answer the question, why does it work, so we understand how to improve education and can build on this understanding.

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The director sets the Institute's priorities, which are also approved by the board. Partnerships are of growing importance in our priorities. And that's in order to help focus research on the issues that most concern policymakers and practitioners and to help researchers better communicate their findings, and do it in useful ways for policymakers and practitioners to use in their practice.

These policymakers and practitioners are to have a strong role throughout these partnerships in setting the research agenda. And there's to be constant communication between the researchers and the practitioners on what is being found and what research should be done.

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The partnership is to evaluate a specific program or policy of high importance to the state or local education agency. For NCSER, in our center, the National Center for Special Education Research, this could be another kind of agency that provides overarching support for education needs for students with or at risk for disabilities. I'll say more about this in a couple of slides.

A change for FY 2019 is that grant funds may be used to collect primary data for analyses if the partner agency deems these data and the associated analyses key to its decision making regarding the intervention being evaluated. However, Low-Cost Evaluation projects generally rely primarily on secondary data to obtain the education outcomes.

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Opportunities to more directly support state and local agencies, and their needs, is a priority for these partnership grants. We want to take advantage of the opportunities to use administrative data that already exists, provide information to education agencies that they need in a timely manner, create additional opportunities, and identify strengths and weaknesses in the applicability of this type of evaluation.

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The first requirement for the application is covered here and in the next slide. The difference between the two grant programs, 305L and 324L, is that NCER's 305L includes students from

pre-kindergarten through post-secondary and adult education as populations that can be studied. For NCSER and 324L, our range includes students from infants and toddlers through grade 12.

You can study any grade range within any of these boundaries. For example, you could focus on fifth grade, examines students in middle school, or study transition between high school and college. In NCSER, we focus on improving a range of outcomes, ultimately leading to improved education outcomes overall. But in our group, these can be functional outcomes as well. And I'll say more about that in the next few slides.

It may also include an agency other than a state or local agency; for example, one that manages providing early childhood education for toddlers and infants. A change for fiscal year 2019 is that Grant funds may be used to collect primary data for analyses if the partner agency deems these data and the associated analyses key to its decision-making regarding the intervention being evaluated. However, Low-Cost Evaluation projects generally rely primarily on secondary data to obtain the education outcomes.

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Applicants proposing to study children at risk for developing disabilities must present research-based evidence of an association between risk factors, specifically defined risk factors in their proposed sample. In addition, applicants must describe the process of identification of specific disabilities. The determination of a risk factor for disability status must be made on an individual child basis and may include, for example, factors used for moving children to higher tiers in a response to intervention model.

The method to be used for determining if a child is at risk for developing a specific disability must be made explicit in these applications and must be completed as part of the sample selection process. So evidence for at-risk status cannot be they're from low-income families nor English learners. That's not sufficient for this purpose or definition. In addition, applicants must identify the disability or disability categories sample children are at risk of developing.

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IES focuses on research that improves the quality of education for all students. Therefore, research must address the education outcomes of students. These student outcomes can be grouped under academic outcomes, as well social and behavioral outcomes that support student success in school. These academic outcomes can include test scores, standardized tests, researcher-developed tests, and of course, tests or graduation-required tests or grades.

Also, measures of progress can include course and grade completion, high school graduation and dropout, post-secondary access, progress, and completion. Again, anything related to post-secondary is funded under 305L and not 324L (but can include those with or at risk for disabilities).

Social and behavioral outcomes can include things as broad as social skills, responsibility, and cooperation, learning strategies, goal-setting, or self-regulated learning, attitudes (including motivation and academic self-concept) and behaviors (including attendance and discipline).

For students with at risk for disabilities, student outcomes also include developmental outcomes for younger students in these domains, cognitive communication, linguistic, social, emotional,

adaptive, functional, or physical, and they can also include functional outcomes for older students that improve education results and transitions to employment, independent living, and post-secondary education.

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The second general requirement involves the setting and outcomes. This is a chart of the acceptable outcomes you can include in your application by age. They are separated for a 324L where the sample can include infant and toddlers and then pre-kindergarten and above for both 324L and 305L. For pre-kindergarten, 324L can also include developmental outcomes.

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For participating children in grades K - 12, these are the outcomes for 305L and 324L, and some additional outcomes specific only to 324L, where we also include those functional and additional transition outcomes for our populations. A change for FY 2019 is that student outcomes can also include employment and earning outcomes. These are defined as long-term post-school student outcomes that include indicators such as hours of employment, job stability, wages, and benefits.

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For 305L only, there are additional outcomes. Post-secondary education is defined as baccalaureate and sub-baccalaureate. Outcomes include access to and persistence or progression through and completion of the education program. These are often degree or certification programs. Additional outcomes for students in developmental or remedial education programs in this setting can be included.

You may also examine the outcomes of achievement in reading, writing, English-language proficiency, and mathematics. Adult education includes students who are 16 years or above and outside the K through 12 systems, who are expected to be in such programs as adult basic education, adult secondary education, adult ESL, English as a second language, and high school equivalency test preparation; that is preparation for the General Education Diploma or the GED.

The change for FY 2019 is that student outcomes can also include employment and earning outcomes, also applies to these programs. Employment and earning outcomes are defined as long-term post-school student outcomes that include indicators such as hours of employment, job stability, wages, and benefits.

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The third general requirement for these applications is that they evaluate education interventions using secondary data. Interventions here is defined as the wide range of education curricula and structural approaches, professional development, technology, and practices, programs, and policies that are implemented with the intention to improve student outcomes.

The implementation must be of high importance to the School Education Agency, or SEA, or the Local Education Agency, LEA. The implementation of the intervention is managed or overseen by these agencies, not the research partners. An implementation of the intervention will occur in Year 1 of the project. It must be a newly implemented program so the evaluation can occur

within that first year. The intervention is expected to produce meaningful improvement that the district is interested in targeting. And at a minimum, administrative data must contain student education outcomes.

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The fourth general requirement is that the applications must come from a partnership. That is a minimum of one research institution and one education agency. The Institute does not endorse a specific model of research partnerships. However, the Institute views research partnerships is going beyond two common forms of collaboration. That it, is going beyond the standard form of the researcher being hired by the agency performing a specific service, and then reporting the results, as well as beyond the researcher having an initial interest and obtaining permission from an agency to carry out that research within the agency schools. Although these can be covered in our other grant competitions, these kinds of partnerships are not appropriate for this application.

A joint letter of agreement from the two agencies or more, or agencies or organizations setting up the partnership, needs to be submitted. It's more like a Memorandum of Understanding, or MOU, showing both sides agree to the work proposed. That is, a letter from the research organization and the education agency and the other partners if they're included. Other members of the partnership can provide separate letters of agreement. Each partner must contribute at least one PI, or Principal Investigator, and may contribute other Co-PIs or Co-Investigators.

There will be one Principal Investigator Project Director because that is the way our grants administration considers one individual with responsibility for the oversight of the grant. Only one institution. Others will be considered Co-PIs. The agency PI must have decision-making authority in the agency but does not need to be the superintendent. This person must be someone who oversees the education issues to be studied or oversees the policy and program and its implementation across the district or state.

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Previous collaborations are appropriate to include, but they're stronger if they include personnel from different institutions. The definition of a research institution is broad. To be eligible to be the research institution partner, you have to show that the institution has the ability to do this type of research. This is very rigorous research. Those agencies can include nonprofits, for-profits, public and private institutions and agencies, colleges and universities, as well as other research firms.

Note there are no longer any requirements for the Principal Investigator and the Co-Principal Investigator to have experience with this research, but the project team should have experience with and/or training in the evaluation design to be used.

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Now let's turn to the organizations that are eligible to serve as the state education agency or the local education agency. The examples are all eligible in this slide as long as they are overseeing some aspect of education. That's early learning, elementary, secondary, post-secondary, higher education, or adult education. Sometimes different types of public organizations are established

to oversee a specific area of education. And those would be acceptable partners. If there is any link to the main state education agency, it's helpful to include that agency as well.

For this grant program, IES uses a broader definition than the definition which focuses on the primary agency responsible for supervision of public and elementary and secondary schools so that you have a broader pool of potential partners at the state education or local education agency level. In addition, the NCSER age ranges will include other agencies that serve infants and toddlers.

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In addition to what is listed on the slide, there are several types of organizations that can be useful partners but cannot serve alone as the agency partner. That is intermediate districts, sometimes called service districts, that provide services to multiple districts but do not have decision-making authority over implementing programs and policies cannot serve as the primary agency. However, they can serve as the agency partner if they do oversee the program or policy that's being studied.

Organizations made up of LEAs, and sometimes other organizations such as universities or practitioner, like research and implementation networks but do not have decision-making authority over the implementation of policies and programs within the LEAs, cannot serve as the primary partner. They need to have some of the LEA members join as the education agency partner.

Non-public organizations that oversee or administer schools, such as an education management organization or charter management organization, are also not eligible. Although, they can be partners. You must include the public, state, or district agency that oversees the schools that are involved as well. There are also some very small local education agencies. In some cases, they may have only one school. These can apply as a partner, but the panel reviewers may consider the work less significant than projects involving multiple schools.

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State and local post-secondary systems can serve as the education agency partner. However, an individual post-secondary institution that is one campus cannot serve as the agency. The whole system must sign on to the project. But the evaluation does not have to be across the whole system. It can take place at only some of the campuses. If there's an agency that oversees the post-secondary system, its inclusion will strengthen the application. And that post-secondary system cannot study themselves. One department or Center cannot study another or even the whole system. An outside institution must be involved.

Finally, for adult education, Title II of the Workforce Innovation Opportunity Act defines organizations eligible for federal funding as adult education providers, including community-based organizations, institutes of higher education, public or nonprofit agencies, and libraries. So, for example, one of our partnership grants research and practitioner partnerships, Penn State partnered with Miami-Dade Public Schools, Chicago Citywide Literacy Coalition, and Houston Center for Literacy, that is the city government, while the Citywide Literacy Coalition is a non-governmental organization. And this was a partnership to examine adult education for our low-skilled population as well as immigrants.

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One research institution in one state or local agency is the minimum requirement for a partnership. For example, several education agencies may face a similar problem, or agencies located in a region, especially small districts, may share common interests. So it may make more sense to have a group of them come together. Having multiple education agencies may also increase the significance of the proposed work.

Partnerships may include additional partners if they'll increase the quality of the research. You'll want to show how the additional partners have similar interests. Non-research organizations are often part of the research partnership for many reasons, including their interest in the issue, access to data as providers of services with links to community. For example, a project seeking to link early childhood education with kindergarten has the United Way as a partner because of its role in supporting early childhood education in the district and its link to stakeholders. As you have more partners, coordination becomes more difficult. So it's important to address how the partnership will work together, keep in contact, and make decisions.

The one type of partnership that we would not recommend is the inclusion of multiple education agencies, whose only similarity is that they have worked with the same research institution rather than that they share a common education issue or problem they want to have more information about. Non-education and state local agencies may be useful partners as long as the Education agency is also a partner. If you're looking at a specific population, let's say you wanted to study foster children, you would have your education agency, but you also might want to include your social service agency that focuses on work with foster children.

For example, another project combines the Connecticut Department of Education and the Connecticut Department of Justice, as well as the University Center on Children. And they're examining the education of court-involved youth. Again, you can also include more than one research institution, but you have to argue that there is a shared interests and they will make a unique contribution to the work beyond the one agency that's already the primary partner.

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The fifth general requirement relates to dissemination. The Institute considers all types of findings from low-cost evaluation projects to be potentially useful to researchers, policymakers, and practitioners. Therefore, the Institute expects dissemination to include findings of a beneficial impact on student outcomes to support the wider use of the intervention and more in-depth further evaluation, as well as findings of no impacts or negative impacts on student outcomes.

These are important for decisions regarding the ongoing youths and wider dissemination of the intervention and further revisions of the intervention and its implementation. Dissemination is to be included in Appendix A of your application. And failure to include this plan in Appendix A can lead to rejection of your application. So it's important when writing the application that the education agency understands that all findings are to be released.

Partners can have the right to the first review of findings so there are no surprises, but findings cannot be withheld. The education agency has to want to learn from the project, and the user results have to be shared. The briefing and written brief are required. The other examples of

dissemination that can be proposed are included in the application. The Institute expects projects to carry out a broad dissemination to multiple audiences.

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On this slide, we provide a quick checklist for you to determine the fit of your research question and intervention for this application. We have several other grant competitions that you could explore submitting an application to, proposing to answer your research question, and the needs and the goals of the agencies you work with. It's important the Education Agency, again, is the one directing the work to be done and the evaluation. The focus of the evaluation is based on the research questions about how these programs or practices are helping their students.

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Do not propose that the partnership will determine what programs or policies it will evaluate after receiving the grant. The purpose of this grant is to provide an opportunity for local and state education agencies to have fairly quick information that they would like to have about the impact of a program practice or intervention. These partners must drive the research questions and the plans.

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You'll want to identify specific education interventions in the process of applying for this application. In consultation with your partner agency, they must drive the question and the research to be conducted. It must be of high priority to them and intended to improve student outcomes within a year of implementation.

You must carry out that evaluation while it's being implemented by the agency using a very rigorous research design. These can include an RCT (or randomized controlled trial), or an RDD design. That's a regression discontinuity design. Those in the field of special education can also include single-case designs in these applications.

Secondary data must be used. The estimated overall impacts must be calculated at the end of the study, and these data must be shared. If data are available, you must estimate subgroup impacts for important subgroups, and examine other moderators and mediators of interest, fidelity of implementation, where applicable and possible, and comparison group practice, where applicable and possible.

A change for fiscal year 2019 is that grant funds may be used to collect primary data for analyses if the partner agency deems these data and the associated analyses key to its decision making regarding the intervention being evaluated. However, Low-Cost Evaluation projects generally rely primarily on secondary data to obtain the education outcomes.

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Expected products of the grant include the causal evidence of the impact of or lack of a clearly specified intervention that the agency implements. That is, again, overall impacts and subgroup impacts where possible. Another product is advice for the agency. The advice is based on the research in terms of continuing or expanding the use of the intervention or practice and advice

about future research needs. That is evaluation needs in terms of variation on impacts, moderation, mediation, generalized ability, and replication, as well as continued modifications to the intervention or development.

The highest standard of evidence is required, again, for these grants, and the research design must include randomized control trials, otherwise known as RCTs, regression discontinuity designs, otherwise known as RDDs. And, also, for the National Center for Special Education Research, or NCSER, acceptable designs include single-case designs.

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Next, I'm going to go through the sections of the Project Narrative that you'll be completing as part of your application. The Project Narrative is the substantive part of your application. It contains the five sections listed on the slide. Inside each of these sections, you will see in the Request for Applications that we've set out both requirements and recommendations. The requirements are the minimum you must address in order to have the application accepted for review. The recommendations are what the peer reviewers are asked to look for as they score the quality of your application.

So let's start with the Significance section.

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The purpose of the Significance section is to answer the question why this evaluation is important to do. You want to lay out the education problem issue that the intervention you're evaluating is to address for the state or local education agency. It's of secondary importance, but still valuable to discuss, if it's relevant to other state or local education agencies. Then you want to explain the actual education intervention you'll be evaluating and describe all of its components, and then provide a rationale for why this intervention should be able to improve student outcomes within the short period of time such as a quarter to one year.

You may also include a theory of change. You should discuss why this is different in the status quo, either in this education agency or in other education agencies. And you can provide related findings from other studies and how this study will then improve upon any past work.

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Then, describe how the intervention will be implemented because the program or policy that you'll be evaluating must be implemented under the education agency's control. That means they directly implement it or they've contracted out but still oversee the implementation of the intervention. Show that there's adequate funding available for intervention implementation during the first year of the project. And we do require that implementation must take place during Year 1 of the project. And you should document why you expect that level of implementation to be high enough to impact student outcomes.

Then, you want to describe the sources of secondary data to be used in the evaluation. Who actually collects them? How are they going to be transferred to the research institution by the first quarter of Year 2 of the project? Also, if this is going to be the first year that the intervention is actually implemented in Year 1 of the project, you probably want to provide some additional

evidence that it will be implemented. For example, has some sort of legal authority been set up to make sure it's implemented? Is there a special office in charge of oversight of the intervention? And who will, of course, implement it in the next year?

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In the Significance section, you will also describe sources of primary data to be used in the evaluation. Describe how these data are collected and how these data will be obtained by the researchers by the first quarter of Year 2 of the project. Please note, gathering primary data is not required. A change for fiscal year 2019 is that grant funds may be used to collect primary data for analyses if the partner agency deems these data and the associated analyses key to its decision-making regarding the intervention being evaluated. However, Low-Cost Evaluation projects generally rely primarily on secondary data to obtain the education outcomes.

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So, we'll move on now to the Partnership section. The purpose of the section is to answer the question, is this partnership a real one. This is one of the major concerns of the peer reviewers that this is a partnership, that you are addressing an intervention of high interest to the education agency and the education agency has helped set out the research questions to be addressed, as well as this evaluation with such priority that the agency is quite likely to use the results.

We're not looking for researchers testing their own interventions and the agency allowing it but not being signed on to implementing such an intervention if the results are good. We're actually looking for interventions that the agency is testing and that are priority to the agency already and not necessarily in the future.

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So, to this end, you want to describe both partners, the research institution, and the education agency. And if there are multiple offices within the agency that need to be involved in this work, please describe them as well. Note any other members of the partnership. Describe the common interest of all the partners and how they will benefit from the evaluation, the process by which the partners determine the intervention to evaluate, again, showing it's a high priority of the education agency. Then describe the data sharing agreement, what is the strategy the data collected by the education agency will be then turned over to the research institution for analysis by the first quarter of the second year of the project.

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Now let's move on to the Research Plan. And we'll walk through a set of issues to be addressed in your Research Plan. It's good to restate your research questions and hypotheses. You'll probably note these originally in this Significance section but it's good to note them again so that it's clear how your research design will answer the questions you're setting out to answer.

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So, first, you want to note the sample and setting you'll be working in and how the sample that you'll be working with will allow inferences the full population of the education agency for which this intervention has been designed. Note any exclusion inclusion rules and justify them. If you're including any retrospective data in your study, you should address these points for it as well, and also describe whether you will combine the retrospective data with the prospective data in the analysis or analyze it separately. And describe how you will address missing retrospective data.

In addition, you should note the strategies that will be used by the agency to increase participation and reduce attrition, and describe the setting of the study this work is being done in and how generalizable it is to the full agency. So, for example, if you're working in a state, you should discuss whether schools in your study are from all parts of the state or perhaps only similar to urban or rural parts of the state.

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Then, you'll want to describe the design. You want to propose a strong research design that can be used to make causal inferences. Draw conclusions on whether or not the intervention is working and benefiting students. If there are any weaknesses in the design, you should openly discuss them. Note their internal validity because the reviewers will know these weaknesses and will want to see that you can account for them, or at least recognize that they are there when interpreting your findings. Discuss how you'll determine equivalence of baseline. Include any checks for bias that may come from attrition, either overall or differential.

For 305L, you must propose either a Randomized Controlled Trial or a Regression Discontinuity Design. And for 324L you must propose an RCT, RDD, or a single-case experimental design. It is helpful to look at the What Works Clearinghouse's evidence standards for all three of these designs. Because if you implement them correctly, you should be able to meet the WWC evidence standards. IES-funded evaluations are automatically submitted to the What Works Clearinghouse for a review based on the evidence standards.

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Let's start with the Randomized Controlled Trial. You should detail the unit (for example, students, classrooms, or teachers, schools, districts) of randomization, the process you will use to randomize units to the treatment and control groups, and the probability for each unit to be assigned to the treatment or control groups. Other projects have found it very helpful in order to maintain the integrity of the research design to provide technical assistance of the agency and to the on-the-ground implementers on how important it is to hold to a design.

For example, the research institution might provide a list of students categorized into treatment and control groups to the education agency based on data provided by the agency. But the people in the district, who are actually responsible for scheduling those students, or contacting parents to schedule them, may have other pressures on them. For example, well, this parent wasn't home to give permission, or the student's schedule is difficult to make it work, so I'm just gonna swap them to another group. It's important to work with the education agency, especially those people on the ground tour making sure those students get into the right group so the design is not

compromised. In your application, you should also describe the informed consent process for students, parents, teachers, faculty, and other district staff.

RCTs can be done in a number of different ways, and each of them has its own potential challenges. For example, there may be mandatory assignment where all schools or all students are included in the assignment. This approach provides generalizability, but there may be some resistance among some of them that didn't want to be in the treatment, so there may be lower fidelity of implementation. On the other hand, the mandatory assignment may be the only approach available. So in such cases, it's important to convince all the groups involved in the treatment that this is an important intervention to implement in order to carry out a rigorous evaluation of it.

A second approach is to only include volunteers in the randomization. This approach should lead to high treatment implementation because only people interested in the treatment will take part. But as a result, those assigned to the comparison group may be less interested in remaining in the study because they want to be in the treatment but they won't receive it. In a response, they may drop out of the study or they may try to seek some similar treatment on their own. In some cases, it may be possible to offer some kind of alternative treatment that isn't expected to affect the measured student outcomes or to assure the control group that they will receive the treatment in the near future.

Lotteries are a type of volunteer randomization. The students are put in the control group may leave the study in order to obtain a similar intervention. For example, a study of a magnet school lottery in a city found that parents of students who did not get in differentially sent their children to non-urban schools. This differential attrition may bias the comparison group to include more units that could be less motivated or less interested in the intervention.

In some cases, it may be possible to follow the leavers. For example, a study in Portland obtained state-level data in order to include students who had left the Portland schools and could not be found in the Portland administrative data so they could be included in the intent to treat analysis.

Another approach is to use a staggered rollout in which, for example, some schools are randomly assigned to receive the intervention in Year 1 of the study, some are assigned to receive it in Year 2, and others in Year 3. The later year schools are used as the comparison group for the Year 1 schools. Year 1 and Year 2 treatment schools may also be compared to Year 3 treatment schools. This approach may reduce leavers as there is a promise that all will receive the intervention.

For interventions that are expected to need one or more years of implementation to be fully effective, the staggered rollout may not provide enough time to provide a fair evaluation. In addition, it's important to determine what is occurring in the control group as they may try to start implementing sooner. And examine if the intervention itself is changing between years of implementation in the Year 1 schools may lead to improvements in the intervention in its implementation.

Another approach is to compare variations of an intervention. For example, the treatment group receives the full intervention and the control group gets some component of the intervention so they both receive something. It may be that the district already has evidence that one component of the intervention is widely implemented and improves student outcomes and wants to determine if an additional component leads to further improvements.

Here are two examples of how low-cost projects have designed RCTs. The Oakland Unified School District, in conjunction with Mathematica, evaluated an intervention for students who are several grades below their expected reading level. For secondary students who volunteered for the study, they randomized these students within schools to the level of literacy intervention, a control group or a third group.

The third group allowed Oakland to maximize the number of students who would receive the treatment. If a treatment student left their school, a member of the third group was assigned to take their place. If they only had randomize students to the treatment and control group, they would not have been able to have a control group student take the place of a treatment group student who left the school as they would compromise the design.

By having the third group, which is not in the study, students from that group can be taken to fill any opening. Their third group students are not included in the study, and their education outcomes are not analyzed, but they do fulfill Oakland's desire to treat the maximum number of students possible.

The University of Wisconsin at Milwaukee and the Milwaukee School District evaluated an additional component for an ongoing check-in and check-out intervention to improve behavioral outcomes for elementary students. Fifty schools took part with half the school's assigned to receiving the typical check and connect check-in check-out intervention, and the other half implemented a modified version that contained additional reinforcements. Before randomization was done, schools were matched on having adequate fidelity of the basic program, number of students in the program, and the number of behavioral incidents. Then each match is randomly assigned to a treatment and control group.

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You can also propose a Regression Discontinuity Design. And here, you want to describe how you will determine that there is a true discontinuity at the cutoff point and not at other points where discontinuity would not be expected. You want to describe how you'll determine that 1) there's no manipulation of the assignment variable, 2) the treatment in comparison groups have similar baseline characteristics except for the assignment variable so you do not differ in ways that would indicate selection bias, 3) that there will be high levels of compliance to assignment, that most or all treatment group members will receive the intervention and there will be a few crossovers of comparison group members who receive the intervention (and how you will document the bias).

It is important to talk with people at the school who actually assign the students about why it's so important to stick to the cut point. One approach is to allow a small percentage of "wildcard positions" in which a teacher or principal or counselor can assign, or not assign, a student to treatment regardless of the value of their assignment, variable based on other factors. These students are not included in the study because of these wildcard positions, but the school and these personnel were more comfortable with the RD design because of how these students had been placed.

You should also discuss the sensitivity analyses and robustness checks that will be used to assess the influence of key procedural or analytic decisions. For example, functional forms and bandwidths on the results. If you're coming into the study with some retrospective data from a

previous year of the treatment, you could have a stronger application by doing some preliminary work on the older data to show that a true discontinuity exists and there are no signs of manipulation of assignment. Although, again, you would be doing your main analysis on implementation data from Year 1 of the project. You might also propose to include the retrospective data in your analysis of the prospective data you will collect in Year 1 of the study.

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For 324L applications only, single-case experimental designs can be used. You will need to justify the use of a single-case experimental design as opposed to an RCT or RDD. Describe the repeated systematic measurement of a dependent variable before, during, and after the active of manipulation of an independent variable. It's important to include outcome measures that are not strictly aligned with the intervention. Also, describe any quantitative analysis techniques in addition to visual analysis for analyzing the resulting data (for example, between-case effect size calculations). See the 324L Request for Applications for additional recommendations.

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Power is important to describe for all of these designs I just mentioned. Adequate power avoids the issue that if you do not find a statistically significant result, it's not because your sample size is too small, so you'll want to describe your power analysis in detail and justify the method you'll use to calculate the power, including all your assumptions. The reviewers often redo your power calculation and report this out into the full panel. So if a reviewer says, "This is a good power analysis," that's a very positive comment to be made in panel. While an adverse comment is, "I couldn't replicate the power analysis."

For that reason, it's important to provide the formula you used to calculate power, the known value of the parameters used (for example, number of clusters and participants within cluster), the parameters whose value were estimated (for example, inter-class correlations, row of covariates), and other aspects of design that affect power (for example, stratified sampling or blocking repeated observations), and predicted attrition and how you address it in the power analysis. You should provide a power analysis for the main impact analysis, for any confirmatory subgroup analyses, and for tests of mediation and moderation.

You should discuss the practical meaning of the minimal detectable effect size you identify. Does the change in outcome really matter for the student, for the teacher, for the school? If you're proposing a very high minimal detectable effect size, there's often a reaction that, "can such a large impact be found?" And that may be tempered by what practical change it represents.

Then, for a very low minimal detectable effect size, that's often seen as good. But, again, there's the question of, "is it an important or non-important change?" If it's seen as small or trivial, you may want to say, "we can detect this level, but we consider it an important change on the outcome to be the larger minimum detectable effect size to be practically important."

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You should describe the education outcome measures that you'll be using to see if students improve. And these should be measures of high relevance of the state districts and schools. For example, test scores, grades, promotion rates, retention rates, high school graduation rates,

discipline referrals, special education placements, college enrollment, or completion rates. You should note the reliability, validity, and appropriateness.

Depending on the purpose of the intervention, you may want to also include social and behavioral competencies and employment and earnings outcomes. Student education outcomes are to be collected during Year 1 of the project when the intervention was being implemented. You can also include data from a previous year if the intervention was implemented in a similar manner. And you should link why these measures should be affected by the intervention.

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There are optional measures that you may obtain from administrative data or from primary data collection. For example, you may want to look at intermediate outcomes. If you're evaluating an intervention that works by changing teaching that is supposed to affect student outcomes, there may be classroom observations recorded by principals or coaches or surveys of teacher instruction that you could obtain as part of your secondary data, or through primary data collection. That can be used to determine if the intervention was adopted by teachers and did change teacher instruction.

There may be moderators you want to look at. Often, subgroups are identified in the administrative data. There may be mediators, intermediary outcomes, for example. There may be measures of fidelity of implementation collected. Also, it's important to know what's occurring in the comparison group to provide evidence that there's a treatment contrast so that any change in student outcomes can be attributed to the intervention or is more likely to be attributed to the intervention. The use of these measures is optional and their inclusion can be justified by the education agency's interest in them. If you do include them, you should describe how they will be obtained (for example, from a secondary source or from primary data collection).

If primary data are to be used, you should describe the data to be collected, their collection (including any coding), and their transformation into the variables to be used in the analyses. Keep in mind that low-cost evaluation projects are to primarily rely on secondary data. The collection analysis of primary data should not be the main focus of the project.

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You will want to detail how you'll analyze the data. Again, linking the analysis directly to show how it will answer the research questions, showing that the analysis fits with a design you proposed. Are you addressing clustering of students in classrooms and schools? How are you addressing any missing data? If you're pulling multiple datasets together, how will they be linked? Are there IDs for the students in all the data sets? And then describe the other analysis to be done as well as the main impact if you're looking at subgroups, moderators, mediators, and fidelity of implementation.

It's very helpful to include your model in the equation to form, explain the variables that will be included in it and the coefficients of interest, and describe the software you'll use to run the model. For your impact analyses: 1) include and explain the model(s) you will estimate to determine the impact of the intervention, 2) describe your Intent-to-Treat analysis and any additional analyses, for example, Treatment-on-the-Treated (such as complier average causal effect), variation, and in impacts for subgroups or sites.

For regression discontinuity designs, show how your analysis reflects whether you expect to have a sharp or fuzzy design and describe how you will analyze impacts at the cutoff point. If you expect to have a sharp design, indicate how you will handle any no-shows and crossovers. If you expect to have a fuzzy design, describe how you will determine whether the assignment variable is a strong predictor of participation in the intervention.

Describe how the analysis will address any use of multiple assignment variables. Describe the sensitivity analysis you will do to check the robustness of any choices that you have made. If you intend to impute missing data, describe the approach you will use to provide unbiased impact estimates. Explain how you'll measure and report on effect sizes in ways that policymakers and practitioners can readily understand. For example, an evaluation of a reading or math program might report on the number of months gained in reading or math skills as a result of the intervention.

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Let's move now on to the Personnel and Resources section. You want to identify the key personnel on the project team. The PI may be from either the research institution or the education agency. That's up to the choice of the partners. But there must be a PI from one and a PI from the other (who will serve as Co-PI in the project). The research team should have some experience and training with the evaluation design being used. The PI or Co-PI from the education agency should have some decision-making authority for the intervention being evaluated.

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When you write this section, think about all the work you are promising to do. Identify each person, their expertise or experience in doing the work, and their time on the project to do that work. For example, you might say, "So-and-so is an experienced expert in serving methodology as shown by their work on these three grants and these six papers they've published. They will be in charge of analyzing the district survey that is being used for teachers. And they are on the grant for 10% of their time a year, which is enough to carry out that analysis."

In sum, the Personnel section should identify what work is to be done, who will do it, how they will have the expertise and experience to do it, and that they have the time to do it. And you can orient the biosketches as well in the same way.

In a partnership grant like these, it's helpful to describe any experience anybody on the team has with partnership work as well as research or implementation work depending on which partner team they are from. The PI should have experienced managing a grant of somewhat the size. They may have had a smaller grant, but they should have some management experience. And there should always be someone on the project, it doesn't have to be the PI or Co-PI, who's on for a long enough time to make sure they always keep the project moving.

You don't want a case where there are always people on for 5% or 3% of the time. So it's very easy to drop the ball and forget, oh, what we were supposed to do, I forgot about this. It's nice to have somebody on for more time who can always be responsible for making sure there's back-and-forth contact going on, and the data is being transferred, and that intervention is being implemented as expected. Also, you should be sure to be objective for the evaluation. If anyone

was involved in the development or distribution of the intervention, they should be separated from some of the evaluation work being done just to show that this is an objective evaluation.

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For resources, you want to describe the institution resources all the partners are bringing and how they will contribute to the evaluation being done and building the partnership institutional capacity to manage a grant. Resources available at the partner institutions to support their part of the project in the joint letter of agreement, which is signed by the major partners, sets out their expected roles and responsibilities and is put in Appendix E.

Other partners should provide letters in Appendix E as well. And then you should note what resources you have to carry out the dissemination plan, which is placed in Appendix A, and we'll talk about it in a minute. Change for fiscal year 2019, Appendix A: Dissemination Plan, will now be considered by scientific peer reviewers as part of their review of the Significance section of your Research Narrative. Reviewers will consider the resources you have available for dissemination as part of their review of the Resources section.

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I do want to note some other sections of the application because they are also looked at by the reviewers. This includes the five appendices in the Budget and Budget Narrative.

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Appendix A: Dissemination Plan is required. Again, when we say required, that means, to be accepted for peer review, it must be included. Required within this plan is dissemination throughout the partner education agency. So that includes an agency-wide oral briefing, as well as a free non-technical written brief available both to the agency and to the public.

Then, you want to consider dissemination to other education agencies and dissemination to the research community. This can include presentations at practitioner, policymaker, and researcher meetings, and conferences, as well as publications and practitioner policymaker journals, and peer-reviewed journals for academics.

The Institute considers all types of findings from these low-cost evaluation projects to be useful and expects dissemination to include findings of beneficial impacts on student outcomes as these will support the wider use of the intervention, and perhaps, a more in-depth further evaluation, as well as findings of no impacts or negative impacts on student outcomes. These are obviously important for decisions regarding the ongoing use and dissemination of the intervention for the revision, and its implementation, and the revision of the rationale for its use.

It's important when you write your application to note that the education agency understands that all findings are to be released. There can certainly be a right of first review of no surprises to the agency, but findings should not be considered withholdable. We want the education agency to learn from a project, and we want the education agency to be willing to want to learn and to disseminate what it has learned from the project.

A change for fiscal year 2019 is that the Appendix A: Dissemination Plan will now be considered by the scientific peer reviewers as part of their review of the Significance section of

your Research Narrative. In addition, reviewers will consider the resources you have available for dissemination as part of the review of the Resources section of the Project Narrative.

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Appendix B is required for resubmissions. Its only use is to address reviews of the previous application. It's very important to respond to all previous comments. On the other hand, if you do feel your application has changed so much from a previous submission that it's really not a resubmission but a new application, you can make that argument and why it should be considered that way here.

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Appendix C is optional. In here, you can include materials that relate to the evaluation and the partnership. So, for example, diagrams of the partnership management structure, a timeline for the project, this is very useful, examples of instruments that are being used for collecting administrative or other secondary data. So, for example, if the district is going to do a survey of teachers regarding their use of an intervention, you could provide that survey instrument here. Please do not include narrative text.

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Appendix D. These are materials that relate to the education intervention being evaluated. What does the intervention look like? Does it have its own assessment materials? If it's a curriculum, what are some of the curriculum materials? If it's an online program, you can provide some computer screenshots. If teachers are receiving specific types of professional development, you can show the documents for that professional development. So the difference between Appendix C and Appendix D is that Appendix C may contain information regarding the evaluation you are doing. And Appendix D addresses the materials for the intervention you are evaluating.

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Appendix E is required. Here's where you put in your letters of agreement. There are two required letters of agreement. One is the joint letter from the research institution and the education agency. That is to document their participation and cooperation in the partnership and set out their roles and responsibilities under the project. The second letter is from the office in charge of the agency's data. And this explains that the project will have access to the data required and in time to do the analysis. It needs to explain that you will have access to the data required by the first quarter of the second year in time to do the analysis.

Then, you can also have other letters, separate letters from any other partners taking part, letters from any consultants on the project, and you can always have a small number of schools taking part. So it's helpful to have letters from them as well. Obviously, there's a trade-off in getting these letters, the cost of getting these letters ahead of time versus how convincing it makes them look, your partnership looks, and the probability that the intervention will occur.

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You will write up a budget in a Budget Narrative. The maximum project length is 2 years, and the maximum award is $250,000. A reminder that the grant funds can only be used for the evaluation; they cannot be used for implementing the intervention. You don't need to ask for $250,000 if the project can be done for less. It's fine to ask for a smaller amount of money.

You include a detailed budget form in a Budget Narrative. And the Budget Narrative should link to all the areas of the budget form and describe how each of the areas are being expended, personnel, evaluation, etc. So if there's something going on in the Project Narrative, it should be described in the Budget Narrative as here is funding for that work to be done.

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For fiscal year 2019, Requests for Applications (RFA), for Low-Cost Evaluation, it includes the following changes from the fiscal year 2018 competition. The Institute has expanded its definition of student education outcomes to include employment and earning outcomes when appropriate. Grant funds may be used to collect primary data for analyses if the partner agency deems these data and the associated analyses key to its decision-making regarding the intervention being evaluated. However, Low-Cost Evaluation projects generally rely primarily on secondary data to obtain the education outcomes.

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An additional change for fiscal year 2019 RFA is that the Appendix A: Dissemination Plan will now be considered by the scientific peer reviewers as part of their review of the Significance section of your Research Narrative. In addition, reviewers will consider the resources you have available for dissemination as part of their review of the Resources section of the Project Narrative. There are also revisions in the research design section that reflect updates in the What Works Clearinghouse, or WWC, Standards Handbook. For the full updates, please see the WWC Standards Handbook version 4.0.

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As you prepare your application, it'll be important to keep aware of the dates, to take advantage of the information sources, and to understand the review process. So the important dates are listed in the Request for Applications.

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The first important date is for the Letter of Intent. The Letter of Intent is a short description of who the partners are, what is the intervention, and how are they proposing to evaluate it. It's not required. Again, it's only requested. And if you miss the deadline, you can still send the email to the program officer saying, "we are intending to apply, here's our idea."

The purpose for the Letter of Intent is that it allows the program officer to respond to you and to give you feedback, and to note whether this is the right application for you, and how you could strengthen your application. In addition, the Standards and Review Office uses them (these

letters of intent) to get an estimate of how many applications will be coming in and what topic areas so they can recruit peer reviewers who understand the intervention they'll be evaluating.

The Letter of Intent is not used in the review process so the reviewers do not see it. All information is superseded by the information in your application. So if you change your idea a little or even a lot, you may even change a partner, that's not a problem. It is your application that will be evaluated. There will be an application package posted that you'll download and fill in, and the RFA will have your application deadline. That is a very strict deadline. It's normally set on a date at 4:30 p.m.

Again, if an application comes in later, it will be considered late and not accepted for peer review. For that reason, we ask you to upload your applications several days in advance for two reasons. One, the server gets very slow on the application deadline date and you may run out of time if you try to upload it later in the day. And second, you can use a command check for errors, and if an error is found, you will then have time, if you apply ahead of time, to correct the error and resubmit. There are also possible start dates. You don't need to always start at the earliest date. There may be reasons to start later.

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The information sources, requests for applications will be on our funding website. You may also take a look at some abstracts of projects we've already funded. That's under our grant search. And you would then go to the grant search and look under program and search under the Low-Cost Short-Duration Evaluation program. The application packages that you download are available on grants.gov. These are the two program officers for the two grant competitions, and you should feel welcome to email us with your questions regarding the grant program.

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Just a little bit on the peer review process, which is run by the Standards and Review Office. If your application is successfully submitted, it goes through two screenings. First, a compliance screening, and then, as well, it will include a responsiveness screening. I mentioned before that the five sections of the Research Narrative have requirements. So they'll be checking for these requirements to be met. And once it passes those two screenings, it will be assigned to a review panel.

Within that panel, two to three reviewers will do an initial review of your application. One will be a methodologist, and one is to have substantive knowledge of the intervention you want to evaluate. Then the most competitive proposals will go to full panel. So, many panelists on a full panel may be generalists to your topic to the intervention being used. So you want to write for both experts in your intervention as well as generalists to it. The panel also contains experts in the relevant methodologies and the evaluation designs being proposed. They then score each section of the Research Narrative, and they provide an overall score as well.

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You will create an account on the IES application notification system, and then you'll receive an email that the information has been updated so you can check the status of your award in the final review statement. If you are not granted an award, we ask that you consider resubmitting

and talking to your program officer. The majority of applications are not funded. The majority of applications we fund often are through resubmissions. So it's worth looking at the comments, talking with your program officer, "Is this a good application for resubmission," and then making such a resubmission.

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And then, finally, again, I just want to stress that it's the program officer's job, our job, to discuss your ideas with you and to give you feedback on them as to whether this is the correct program to apply to, is there another program to apply to that might be better, and then connect you up with another program officer. So please do feel free to contact us.