



Institute of Education Sciences
Funding Opportunities Webinar
Grant Writing Workshop for Efficacy
& Replication Projects and
Effectiveness Projects

April 24, 2012

**IES Funding Opportunities Webinar:
Grant Writing Workshop for Efficacy & Replication
Projects and Effectiveness Projects
U.S. Department of Education
Institute of Education Sciences**

**Joan E. McLaughlin, Ph.D.
Deputy Commissioner
National Center for Special Education Research**

**Transcript
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Slide 1

Hi, I'm Joan McLaughlin. Caroline Ebanks (from the National Center for Education Research) is sitting beside me. She will be addressing some of the questions that you have and trying to make that part of the presentation go smoothly. She also may pipe up if she has something smarter to say than I do.

Here's the overview of what we'd like to cover today. The heart of the presentation is talking about the research narrative for Efficacy and Effectiveness applications.

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I'm going to move through the introduction materials fairly quickly. If I'm going too fast, you can just send a note to Caroline telling her to "*Tell Joan to slow down.*" I really want to spend the time on the Narrative because I think that's the majority of the information you'd like to get out of this.

Let's talk about the structure of the Institute of Education Sciences (IES), the missions of the research centers, and the research topics within both the National Center for Special Education Research (NCSER) and the National Center for Education Research (NCER). Then, we have research goals within the topics that I'll just introduce, focusing mainly on our Goal 3 and Goal 4, Efficacy and Effectiveness. Then, we get to the heart of the matter—talking about the research narrative. Then, there will be a brief overview of what you do with the application, once you finish writing your research narrative, and what happens on our end with the peer review process.

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Here's the organizational structure of IES. Hopefully, you can see the two research centers that are shaded in blue. There are four centers in all. I'm going to be talking about the Efficacy and Effectiveness goals for the two Research Centers' Requests for Applications (RFAs) for their regular research grants. I also want to point out that there is a separate box for the Standards & Review Office, which is in the Office of the Director. I want to point that out, because they're in charge of the peer review process. That's nice for us, not only because they do all the work of setting up the panels and overseeing other activities related to the peer review process, but it also puts a firewall between the Standards & Review Office and Program Officers in the Research Centers. This firewall allows us to offer technical assistance to applicants who are going to apply for a grant award.

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The two Research Centers have very similar missions. For NCER, it is to support rigorous research that addresses the nation's most pressing needs in education; the age range is from early childhood through adult education—preschoolers (3-year-olds) up through postsecondary and adult education. For NCSER, we also are sponsoring rigorous research that is designed to expand the knowledge of understanding of infants, toddlers, and students with or at risk for disabilities from birth through high school. So, NCSER starts a little bit earlier with infants. If you're thinking about early intervention or early learning, you should know that there is a difference between the two Centers in the target student age range. By the same token—if you're interested in adult education, you would be looking at NCER and not NCSER.

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What kinds of things do we fund in each of the Research Centers?

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Here is a list of 11 research topics that are funded in the Special Education Research Grants program. The two that are highlighted are fairly new. They were new last year, and they're the Families of Children with Disabilities topic and Technology for Special Education topic. As you can see, there's a whole gamut that we run with the topics covered. Some of them are traditional core subjects like Math, Science, Reading and Writing, as well as Social & Behavioral Outcomes, Professional Development, and then some are specialty topics like Technology. We also have some age-bound topics, specifically Early Intervention and the Transition for Secondary Students.

For the Education Research topics, there are 10 topics. You can see that in some ways they mirror the kinds of things that we fund in Special Education.

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We have Math, Science, Reading, and Writing, but they also have some specific ones like English Learners (ELs) and Improving Education Systems: Policy, Organization, Management, and Leadership. When you're thinking about topics, look at both RFAs and see what best fits your interest.

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Within those topics, we have five research goals.

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The goals are Exploration, Development & Innovation, Efficacy & Replication, Effectiveness, and Measurement. I'm going to focus on Efficacy & Replication and Effectiveness, but it's worth talking just briefly about the others because sometimes people are confused about what goes where. These goals span the spectrum from exploratory (more basic research) through effectiveness. Sometimes, you feel like your interest or your research is in between some topics, so it's good to get some clarification through this webinar and discussion with a Program Officer.

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For Exploration, people are trying to get some sense of relationship between education outcomes and things that can be changed (i.e., malleable factors). They might be looking at correlations between speech and language therapy and student outcomes. They're not looking for causation. If you are asking a kind of question that involves impact or causation, Exploration is not for you. If you are thinking about just trying to find out some basic information of what seems to be associated with "X" outcome, then think about an Exploration goal. Also think about checking out that webinar presentation and speaking with a Program Officer.

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For Development, the whole focus is on developing an intervention, whether it be a curriculum, instructional approach, program, or policy. You also need to look at feasibility and collect pilot data on student outcomes, but that's only a very small percentage of what you're doing there. You're focusing on the development of an innovation—an intervention.

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Our Goal 3, Efficacy & Replication has three purposes. The first is to evaluate whether a fully developed intervention is efficacious under limited or ideal conditions. The question that you're asking is "*Can this intervention work?*" They can be widely used interventions (even though they may not have much testing behind them). Most of you

can probably think about a lot of things that go on in our school system that are widely used but not tested. Then, there can be interventions that are not widely used. You may have developed them yourself under Goal 2, or they might have been developed by other people. Those are also acceptable for this goal.

A second purpose is to replicate an intervention that has been shown to be efficacious.

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The reason that you want to replicate an intervention is because you're interested in trying it out with a different population of students (e.g., ELs). You might have done something with kids who are fluent in English and you want to see if it works with ELs.

In a Replication project, you could also try an intervention out with different education personnel. Suppose you know something works with general education teachers and you might want to try specialists or special education teachers. You could do that.

Setting could also be a reason you might want to replicate. If you know something works in the inner-city of Los Angeles, you might want to try it in a rural area—someplace in the Midwest, for example.

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Okay, a third reason to do an Efficacy & Replication study would be to gather follow-up data examining the long-term impacts of an intervention that has been tested for efficacy. There are two ways that you can do a follow-up; in both cases you're looking for sustainability. The first would be on students. Suppose you did an Efficacy study when they were in first-grade and you want to see if in third-grade the effects still hold; you could apply for an Efficacy & Replication grant.

The other would be if you looked at that intervention in first-grade and those kids moved on, but there was a new cohort of first-graders coming in and you wanted to see if the teachers, without having another professional development session and training session for the intervention, would carry out the intervention in the same way with fidelity. You could do that as well.

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At the end of an Efficacy & Replication grant, here is what IES wants. We want to see evidence of the impact of the intervention relative to a comparison condition and that that has been revealed using a research design from the What Works Clearinghouse (WWC) standards. If you do not know WWC standards, there's a reference for it in the RFAs. You also could go directly to the WWC part of the IES website and look for it there, but I bet it would be easier if you went to the RFA and found the direct link.

We also want a revised theory of change. When you're writing the grant research narrative, we will ask for your theory of change—why you think something is going to work and what the process is by which that change is going to happen. Obviously, through the process of testing an intervention, you will learn things that you can use to revise the theory of change, which will inform the field. We want to see a revised theory of change.

We also want to see you think about the conditions under which an intervention can be implemented. If you're going into a school, what are the things that should be in place so that the intervention can be optimally successful? During the course of your Efficacy & Replication grant, you should be thinking about that because this is what we'd like to see.

Then, if positive effects are not found, we'd still like you to get some very useful information out of the research grant that can inform the field later. What further research should be necessary? What other things should we be looking for? Why didn't yours work and what can we do better the next time?

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Let's switch to Goal 4 now and talk a little bit about this. Obviously, I'll come back to talking about these goals a little further, but I just want to set us up for the rest of the webinar. For an Effectiveness goal, the idea is to evaluate whether a fully developed intervention that has evidence of efficacy is effective when implemented under typical conditions through an independent evaluation. An Efficacy study looks at whether something can work, and it can be under ideal conditions. In an Efficacy study, you can support the teachers, you can spend money on materials in the classroom or whatever. An Effectiveness study looks at whether it will work under typical conditions. You're implementing it in a place where things are going on as they always go on in schools or educational study (without extra implementation support, involvement of more highly trained personnel, or focus on a homogeneous sample that is allowed under Efficacy/Replication).

The other reason you could go for an Effectiveness goal is if you wanted to gather follow-up data examining the longer-term impacts of an intervention on students and this would have been through a previous Effectiveness study.

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In an Effectiveness study, IES expects researchers to implement the intervention under routine practice. We really eventually want to get to a place where we are getting data on how things work in regular situations that aren't supported by a lot of research dollars. This needs to be under routine practice. It has to include evaluators that are independent of the development and distribution of the intervention. We need to have some strong efficacy evidence for the intervention. So, at least two previous studies suggest the efficacy of the intervention.

When we say Effectiveness (we used to call it Scale-Up and some of you may be familiar with that term), we do not mean that the study has to be widely generalizable, so that something that you're trying out has to be able to be implemented across the nation. We don't expect that from a single study. We do expect that in order to get to the point where it can be widely generalizable, we'll have to do several Effectiveness projects.

I also want to mention that sample size is not a key distinction from Efficacy. You don't need thousands of students in an Effectiveness study. I'll talk a little bit more about what it needs to do on the next slide.

It also does not need mediator analyses that are confirmatory. Like Efficacy, we are willing to accept exploratory mediator analyses. I also want to mention that the cost of the implementation for Effectiveness studies is limited to 25% of the budget. What that means is that you're not pouring a lot of your dollars into doing the kinds of support that you might in an Efficacy trial to see if it can work. Again, this is routine practice. The intervention has to work with the resources that the education setting has available.

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To finish up our five goals, there's the Measurement goal. This involves the development or refinement of assessments and their validation. You could validate existing assessments for specific purposes, context, and population. What it was originally developed for may not be for a particular context and population, and you could come in and hope to expand the use of this assessment for these other purposes or populations.

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The question that I probably get asked most frequently is *"I'm in between a Development and an Efficacy goal. Some development done, but I think we're ready for testing on efficacy."* It really has to do with how much development you have already done. For Efficacy, we ask that the intervention be fully developed in order to proceed. There are things that we do allow to be developed in an Efficacy study and that is just

for a few things like fidelity or professional development materials or maybe there's a small checklist, or something like that, that one needs to do to confirm or develop for the Goal 3 study. Bring these kinds of questions to your Program Officer, because they have had experience talking and working with applicants to figure out the most appropriate goal.

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We don't have that many Effectiveness studies in either Center thus far, but people do ask, "*What should I be going for—an Efficacy or Effectiveness study?*" Here are some of the things that you should consider. For Efficacy studies, they really are ideal conditions that you're implementing. You offer a lot of support in the classroom or other setting where this is being carried out. You might put research assistants in the classroom to help, or you might provide teachers with additional training if they don't get the intervention in training time provided. So, the question really is *can it work?* Even with a lot of support, can it work? But Effectiveness is under routine practice. So, think about that component.

Also, it's whether you have evidence of efficacy for an Effectiveness study. We are saying that at least two previous Efficacy studies need to have been done for Effectiveness to be funded. Now, they can be done by you or other people, but we want the Effectiveness to have that efficacy track record already.

I'll talk a little bit about this again, but we need you to not be the developer of the intervention, or the distributor, or have financial stake in it. If you are, there is a way that you can be involved in the project but it's much more limited in an Effectiveness study than it is in Efficacy. In Efficacy, there is still some handholding and fairly significant involvement from developers.

Slide 21

I just wanted to give you some sense of what we currently fund in the Centers. This first slide is for NCSER. This isn't a picture of what we want to fund or a quota that we have. It's just what our portfolio now represents. You can see that right now Efficacy is 25% of our portfolio and we have a very small amount—I think we have two projects—that are Effectiveness.

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The same is mirrored in NCER, where 26% of their portfolio is Efficacy and 2% is Effectiveness. Hopefully, with your help, those numbers will increase over the course of the next few years. We're looking forward to that.

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Now, we get into the real nitty gritty, which is the application research narrative.

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The 25-page research narrative is a key part of the application, and it's what I focused on here. There's the Budget and there are the Appendices as well, which the RFA covers, but I really want to spend our time talking about this critical component. There are four sections of the research narrative: Significance, Research Plan, Personnel, and Resources. Not coincidentally, these are the four criteria that are used to judge the application by the review panel. You're scored on the Significance, the Research Plan, the Personnel, and the Resources.

The requirements do vary by program and goal, so it's important that you get to know both the topic area and the goal within the RFA. These pieces of information I'm giving are the sort of things that can be taken across all of the programs and goals. The research narrative has a 25-page limit, single-spaced. So, the idea is that you have to be very efficient with your words. In those 25 pages, you have to give as much information as possible to the review panel.

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Let's start with Efficacy & Replication.

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Let's go with Significance. One of the key things in the Goal 3 applications is that you fully describe the intervention that has been developed. As I said before, it already should be fully developed. You've got to take a good amount of time to describe what it is and how it works. What is the implementation process? Who are you training? What are you training them on? How long are you training them? Describe how the intervention is to be implemented. Talk about its readiness to be evaluated. Do you have manuals? Do you have all the measures? Do you have some idea of what it means to be fully implemented? What is your idea of fidelity? How closely do those who carry out or implement the intervention have to follow what you said in order for you to think that this has been done with fidelity? What are you going to use to measure it?

We also need you to justify evaluating the intervention. What is the practical problem that it addresses? Don't assume that people know what the practical problem is and why this is important. The folks that are on the panel are very smart and they are researchers, but this may not be their niche. So, take the perspective that you are convincing them that this is something critical that should be funded.

If the intervention is in wide use, show that it has not been rigorously evaluated. That's a very important thing to know. If it's not in wide use, convince them that it's feasible to do and that there's promise of beneficial impact on students. Give them evidence of this. They really need to be convinced that they should put scarce federal dollars into this project.

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I'm going to give you an example of a theory of change. The idea behind the theory of change is that there is a problem in which you are trying to intervene and you want to show how you expect change to happen with the intervention and describe why what you're going to do would lead to the expected outcomes. Describe the process by which this is going to happen. So, you should provide a theoretical and empirical rationale. What's the theory behind it and what evidence is there for this theory of change? Also, talk about whether you expect direct impact on students or work through mediators. Do you intervene, so that the intervention is working through parents or teachers? Justify that the intervention could lead to better outcomes more than current practice because the idea is that you want money for this intervention, and the panel has to be convinced that what you're proposing is better than the status quo. Also, talk about the overall importance of this intervention for the field.

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I'm going to give you a logic model for a theory of change. I think it's very useful to have a picture in your application. I'm not sure all Program Officers or panels think that's necessary, but I really do think in this case that a picture is worth a thousand words. With only 25 pages, you need to capture a thousand words. Suppose the problem is that children are having some difficulties in kindergarten on academic assessments. What you're trying to do is to take a 4-year-old pre-kindergarten student, maybe in a low-income neighborhood, and give them an intervention. The idea is to get them to a better place in kindergarten with greater cognitive gains. You've got your 4-year-old pre-kindergarten population (or your population that you're going to choose a sample from), your intervention, and then your outcomes. There are proximal or near outcomes (things that you can expect to change immediately) and then the more distal outcomes (e.g., increased school readiness and greater gains in cognitive tests in kindergarten).

Your theory of change is that if you implement this intervention, it's going to work to increase positive attitudes about school, improve literacy, improve self-esteem, and improve behavior in school. All of these things will lead to increased school readiness, and then you'll get greater cognitive gains in kindergarten.

What I want you to think about when writing your research narrative is that you've got to make every piece of the research narrative tie together. I want you to think about your theory of change as being an important part of that, because everything that you put in your theory of change, you want to introduce in your Significance section. You want your Significance section to lead right to your theory of change. Then, your theory of change is going to drive your sample, research design, measures that you're going to take, and it's going to drive your analyses. I think if you really put some effort in it and work with your research team, this will help you structure the application.

Now, a well-articulated theory of change also helps you to write other things that need to be included.

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For example, for your 4-year-old children, you're going to need to describe how you're going to identify the population. Are you going to do any screeners or diagnostics to have them enter the sample? What are their basic demographics—low SES, ELs, etc.? It also helps you to think about potential moderators. What is the setting and context? What are the personal and family characteristics? Are they in high-quality afterschool care? It helps you to think about the things that might make a difference. For those things that might be influential, you've got to think of a way to measure it and to include it in your analysis.

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For the intervention, you want to think about the treatment versus comparison conditions. What is it? What are you comparing the treatment to? Also, fidelity—look at what the treatment and comparison groups are exposed to. What are aspects of the intervention that you should capture so that if you find differences, you know where the differences come from. Maybe you can look at whether the control group has had similar exposure to things the treatment group had.

There might be distinctive aspects of the intervention—for example, the quality of the intervention in some schools versus others that you want to consider as potential moderators, and characteristics of the personnel or teachers in the education setting.

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The same is true of measures. Think about what you want to use as a pre-test, post-test. Do you want to do a follow-up? Can you do a lagged assessment after the intervention is over? Think about other dependent variables—things that aren't expected to change, unplanned positive or negative outcomes, mediators that you might want to consider.

Go back to this and think about it as you're trying to draw your boxes and circles and whatever. Think about the kinds of things that you have to write about as indicated in the RFA. I really encourage you to spend some time on this.

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Let's leave the Significance section and let's talk about the Research Design. It's critical that the design meets WWC evidence standards—that's with or without reservations. The randomized control trials (RCTs) are favored. They have strong rigor, and we encourage them as much as possible and encourage you to think about any challenges that you think that you might encounter in doing a RCT to see if you can overcome them, because RCTs really are the best way for efficacy to be tested. In thinking about the RCT, think about the unit of randomization and the justification for it. If you're looking at students that are within a classroom or within a school, think about whether you're going to randomize kids, whether you're going to randomize classrooms, whether you're going to randomize teachers or schools – and justify it. And also a note that I'll follow up on later, think about this in terms of your analysis, too, because the unit of randomization drives your analysis. Also, think about your procedures for random assignments. They are critical for a study to be objective and independent. Random assignment is kind of a keystone of a RCT.

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If you can't do a RCT, we will allow strong quasi-experiments, but you have to justify why a RCT is not possible and then you have to convince the panel that a quasi-experiment can give you important information about efficacy. One of the things that you want to do is to show how your quasi-experimental design, as you describe it, reduces or models selection bias. Also, discuss threats to internal validity and the conclusions that can be drawn and also the limits of the quasi-experiment. What are the limits and why can we live with those? If you don't identify the limits, the panel certainly will. If you identify them, you can address them. So, think about that.

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If you're applying to NCSER, we also accept single-case experimental designs for Efficacy & Replication trials or studies. You have to provide strong argument for their use. We also require that you follow the WWC standards for single-case design. Again, these standards are referenced in the RFAs. Or you can go directly to the WWC site to look for them.

There are two sets of standards within the WWC Single Case Design document. One is for individual single-case studies, and there's a series of things that you must follow for individual studies. Importantly, there are also standards for a set of single-case studies that are required to provide evidence of efficacy. Those include a minimum of five

single-case studies. There are three research teams required at three different sites, so you have to be very collaborative when you're doing single-case, experimental design for efficacy, and a combined total of at least 20 cases. The reason we don't use the term "single-subject" because single cases can be individuals or classrooms or schools. They can be different units other than individuals.

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Let's talk through some of the other important components of the Research Design section. First of all, there's the sample and setting. When you talk about your sample, talk about who you're going to include in the sample and who you're going to exclude. For example, if you're doing a study that involves a child moving objects, you might want to exclude someone who has issues with motor control—explicitly state that. You also want to talk about the setting. Where is this going to take place? If it's going to take place across a number of settings, like a number of different schools, give the panel some evidence that you've thought about the fact that there might be different things going on in these settings.

I also wanted to mention that you really need to spend some time talking about what the control or comparison condition is. It is very rare in education these days to find that nothing is going on. If you're doing a literacy intervention, it's hard to be in a classroom where they don't already have another literacy curriculum. Talk about what that means, talk about how yours is different, how you're going to deal with the fact that something else is going on. What is the business as usual, and how are you going to capture what that is?

Power analysis is critical to both Efficacy and Effectiveness studies. We recommend that you show the formula that you have used in your power analysis, and please identify what your assumptions for the power analysis are. People might say the effect size that they're using in their estimate, but they give no indication of where that effect size comes from. I can guarantee you there are going to be methodologists on the panel that eat, drink, and sleep power analyses. They will have the power analysis software up on their computer, and they will be recalculating your power analysis so you should make your assumptions very clear.

Don't forget if you ask questions about subgroups (e.g., *Does the intervention affect boys and girls equally?*) that you have thought about this in your power analysis. If you don't have enough power to do an analysis by subgroups, then make sure that you're clear that your analyses by subgroups are going to be exploratory.

Question: "Are power analyses necessary for single-case design?"

Answer: *No, they're not. They're not relevant for single-case design, but you should talk about the sample size and how you arrived at that.*

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For measures, remember my picture of the theory of change or the logic model. There were different kinds of outcomes, proximal and distal. Make sure you think about the measures that you use for each. If you have a vocabulary intervention, you might want to give a test of the vocabulary words at the end of the week. Obviously, that doesn't have a lot of power. You probably want to include something like a test of comprehension or a language standardized assessment as a more distal measure. Don't forget to include psychometric properties of your measures. There may be some that you develop yourself, and that's fine; talk about how you developed it and how you validated it. Also, talk about how you're going to test for fidelity of implementation—not only for the treatment, but also what you are going to do in the control classroom? Because the control classrooms of comparison classrooms might be doing the same kinds of things that these treatments are, and you're going to need to understand what's going on when you run your analyses. Also, talk about what's going on in the comparison group—what are the practices?

We also want you to be thinking about things that mediate and moderate the effects of the intervention. You can't do everything. We'd like you to do everything, but you don't have enough money and you don't have enough time. What we ask is that in terms of moderation, when you look at things that are moderators, you look at a small set of moderators with theoretical or empirical base. What relates to your theory? What are the important moderators that you should look at? Really narrow down the list of things that you're going to use in your analysis as moderators.

You're not going to have a lot of power to do analyses of a lot of mediators. So, we are fine that if you're looking at mediators, they're exploratory analysis.

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This is the final part of the Research Design—the thread that runs through your research narrative also needs to include the analysis. Clearly link them to the research questions. Your research questions have to come from the Significance section and your theory of change, and they have led to the measures that you're going to take and the data collection that you're going to be doing. Now, the analysis needs to link back to that. Show the flow. You might want to state your research question and how you're going to analyze each one.

The method for evaluation of main impacts is important to state as well as your subgroup analysis and also whether the subgroup analyses are going to be exploratory. Now, your unit of randomization comes in here as well. Consider any clustering of students within classes in schools. Again, this trips up a lot of applications. Caroline and I have sat in on panels where they've spent a long time discussing whether the analysis is appropriate given the clustering of students. Don't forget to talk about missing data or attrition. It's going to happen. You're going to miss some data, and there's going to be some attrition. Talk about how you're going to handle it. Be proactive. Let the reviewers know that you know how to handle these things that come up all the time.

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Now the Personnel section. Efficacy & Replication studies need to include people who have relevant content knowledge. If you're looking at an algebra program that's an online program for high school students, you not only would like someone who has algebra expertise and knows how kids learn algebra, but also include someone who knows Web-based technologies. Make sure everything that you're including in your study has an expert associated with it. Have someone who knows how to implement the intervention, who knows how to collect data, and who has the required methodological skills to do an impact study.

I want to say something about the methodologists and statisticians—they should be front and center in an Efficacy or Effectiveness study. It's important to have them on for a significant amount of time and have them involved in the application as well. Sometimes the analysis section looks like it was dropped down from Mars because somebody else wrote it. The methodologist or statistician wrote it and dropped it in. They need to be working with you to integrate the entire research narrative, and this will show the review panel that you're going to be working well with a methodologist.

Also, the partners that you will have—the schools, the Head Start Centers, etc.—need to write letters of support and you need to show that you can work well with them and you have people on staff who are going to handle those relationships.

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If you are a principal investigator (PI) and developer of the intervention, you have to take steps to avoid the appearance of a conflict of interest because you want people to trust your results. IES recommends that you maintain objectivity by having an independent party do three things: (1) assign participants to treatment and control so that you as the developer won't have a hand in that and therefore it will be a true random assignment; (2) collect and code outcome data; and (3) analyze the data so you are not involved with that task either. Some universities have statistics and methodology groups within the university that people often turn to for this kind of thing. You may not

have that, but think about how you can assure the folks reading your application that you're going to have someone who can handle these components of the study independently without having to fight to show that this is done objectively.

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We often get questions about how early career researchers apply for these grants. First of all, let's talk about senior researchers. Senior researchers tend to be very busy people, and one of the key things is to show on an application that they have enough time to be a PI if they are a PI. Make the credentials clear. Not all reviewers may know you, even if in your niche you're well-known across the country. The reviewers may not know this. I've had questions asked about really well-known people in a field because it wasn't clear from the bios that were provided in the Appendix or the descriptions in the Personnel section. Don't take it for granted that people know the senior researchers.

As an early career researcher, you have to build on what expertise you do have. Talk about work that you've done as a graduate researcher and any work you've done since you got your degree. Also, talk about the management and administrative skills you have. Were you in charge of particular parts of the project? This is important. You've got to start building somewhere, so this is where to start. The reviewers are going to be more comfortable if you have senior personnel supporting you. We recommend that if you are an early career researcher, you build in that support through having a co-PI, a co-investigator, contractors, or advisors, helping you to take on this very big task and major undertaking. Have these people on for enough time to be taken seriously. Obviously if they're available for a couple of hours a month, that's not enough of a commitment for a panel to feel comfortable to put you as an early career researcher on as a PI. Show that the senior researchers are going to be with you during critical milestones within the project.

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A lot about Effectiveness is similar to Efficacy, so I won't repeat.

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I'll just highlight the things that are different. You need a detailed description of the intervention, but what's different for Effectiveness is you have to talk about the Efficacy studies that have been done. Talk about what's happened and present the intervention in a way that suggests you're ready for the Effectiveness study. You need a theory of change to justify that this study could lead to better outcomes than the current practice. Why should we be funding this over what the status quo is?

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Effectiveness is going to be implemented under routine conditions. It's an independent evaluation. One thing that I haven't talked about is that there needs to be evidence that implementation can reach high enough fidelity to have meaningful impacts. You have to be able to show that the intervention can be done within an educational setting under routine conditions so that we can expect to have impacts. If teachers, for example, aren't administering or implementing the intervention with high fidelity in an Efficacy study, how would we expect them to do that in an Effectiveness study? So, we need evidence or for you to talk about that in your application.

Slide 44

In your Research Design section, there are some things that are different than Efficacy applications. In an Effectiveness study, we expect a more heterogeneous sample. It's fine, if you're in a university doing an Efficacy study, to go to the nearest school district (and they might be all middle class students, and that's fine). Under routine conditions for an Effectiveness study, we expect a little bit more of a heterogeneous sample. We also expect that the intervention at this point can be implemented so that the people implementing it monitor their own fidelity; they're not under the same conditions as an Efficacy study.

We also expect you to do a cost feasibility analysis. It's not a cost effectiveness study but instead a feasibility because we want to see that it's reasonable to expect schools, districts, or whatever to be able to afford doing this kind of intervention.

Slide 45

Personnel requirements are the same. The design and conduct of the evaluation must be independent. The PI must not have been involved in the development or distribution of the intervention and the evaluation team should have no financial interest in the outcomes of the evaluation.

Slide 46

Individuals who did not and do not participate in the development must do all of those critical things—designing the evaluation, determining random assignment, collecting data, and analyzing data.

Slide 47

The developer can still be involved, but it's in a more limited role. One example is that they can do the professional development or training of the intervention. For example, the developer can do in-service workshops for teachers (that would be done any time that one would use this intervention), but you must describe the involvement of the developer in the application and the limited role they will play.

Now, I'm going to talk about resources for both Efficacy and Effectiveness.

Slide 48

Show that the institutions involved have the capacities to support the work. We see a lot of university boilerplate, and it really does come across as boilerplate. I would tailor whatever the university gives you to show what is appropriate for your project. One panelist said he didn't care how many books there were in the library; that wasn't germane to the study. I would try not to use university boilerplate if possible, but tailor the resources that you have. Show that all organizations involved understand and agree to their roles. One way of doing this is in the Letters of Support in Appendix C. You provide letters that spell out what your responsibility is to the organization and what their responsibility is to you. This is especially relevant for schools and school districts that you have recruited.

For Effectiveness studies, a data-sharing plan is required. This is a plan to share what data you collect at the end of an Effectiveness study—only for Effectiveness studies, not for Efficacy. That's described more in the RFA and I won't go into it now because it involves a lot of things. If you need more information, you could talk to the Program Officer about it.

Slide 49

Maximum awards and the timeframe for Efficacy & Replication is 4 years for \$3.5 million, and that \$3.5 million is the maximum, direct and indirect—total cost. For follow-up studies for Efficacy, it's 3 years, \$1.2 million. For Effectiveness, it is 5 years at \$5 million. Effectiveness follow-up studies are 3 years at \$1.5 million.

Slide 50

Let's go on to applying for grants because I would like to leave a little bit of time at the end for any questions that you have for the group.

Slide 51

Probably the most important thing you can get out of this whole webinar is knowing about the IES funding website (<https://ies.ed.gov/funding>). We try to put everything that we know up on this website so that you can take advantage of it. You can find our RFAs there, not only the two that we're talking about—NCER and NCSER—but other things that you might be interested in as well. I'm going to talk about Letters of Intent (LOI) in a little bit.

Also, in addition to the RFAs, you need an *Application Submission Guide*, which we have on our website. It comes up for each application deadline. It's available now for the June deadline, and you need an application package. All of these are described in our RFA in more detail.

Slide 52

One of the first things that you need to do to submit a grant is make sure that your institution is registered on the federal [Grants.gov](https://www.grants.gov) system. This is not specific to the Department of Education; it's government-wide and you need to register. Last time I talked to someone about this, registration took about 3 weeks. Do it now so that at the last minute you're not worried about it and held up by anything.

What this allows you to do is to complete forms online and upload your PDFs with your research narrative and bio sketches and appendices and all of that. The authorized representative from your institution actually presses the button to complete the process. So, leave time for that process. We have an absolute deadline of 4:30 p.m. on the day that it's due—we put 4:30:00 p.m. because if it's one one-hundredth of a second over 4:30 p.m., it's late and we can't accept it. I think this is the first year no one in my portfolio submitted something late. There's nothing that we can do. A cutoff is a cutoff and we have to live by it. I would recommend to all of you that you submit it a couple days early. You know something's going to go wrong. Murphy's Law, right? That way you'll have time for it to kick back and then you can resubmit it. Or someone in the sponsored program's office submitted the wrong version or something, and you can recover from that if it's done ahead of time. If it's done at 4:15 p.m., you might not be able to recover.

If you have problems uploading—even if it is a couple days before the deadline—you can contact the Help Line and get a case number. If you're submitting at four o'clock and you have problems it's really hard but if you have a case number, they might be able to work something out. That's a good phone number to have. You may not need it now, but you may need it by the deadline.

Slide 53

Once you submit, you get three e-mails. One is from the [Grants.gov](https://www.grants.gov) website saying that they have received your submission, and they give you a number that starts with "Grant." That's a number to keep, but it's not an IES critical number. Then, you'll get a [Grants.gov](https://www.grants.gov) e-mail that will say your application is validated or rejected due to errors. If it's the latter, you can resubmit but that only can work if you do it far enough in advance. Then, the Department of Education will assign you a grant number that starts with "R305" for the NCER and "R324" for NCSER; those are the critical numbers for us to track through the system.

Slide 54

Once the button is pushed on your end for [Grants.gov](https://grants.gov), the Standards & Review Office, not the Research Centers, handles all of the applications. This is a very good thing because they know what they're doing and there's a firewall between them and us. The whole process from when you submit to when you hear back is about 8 months. It seems like it falls into a black hole, but your application is on somebody's radar screen the entire time.

The first thing that happens is it is screened for compliance. Is it 25 pages? Really simple requirements like that are checked. Then, it's screened for responsiveness. For example, did you meet the program requirements? If you're applying to Early Intervention under Special Education, that means that you have a project that deals with kids ages 0 to 5; if you're dealing with 7-year-olds, then you aren't responsive. Or did you meet the goal requirement—e.g., do you have a pilot study for a Goal 2 or a research plan for a Goal 3? If you don't, it's kicked out.

Once it's gone through those two levels of screening, it's assigned to a review panel. There are two to three primary reviewers. For Efficacy and Effectiveness, you're going to have three primary reviewers; they're going to represent both the substantive topic and methodology. Those three reviewers will each independently review your application and score them. Then, for applications that are scored high enough, the application is sent to a full panel. It will be presented in the panel by the three primary reviewers and then it will be discussed and scored by everybody on that panel. So, write to the general panel because they will all be looking at it.

Those four items that we covered for the research narrative—Significance, Research Plan, Personnel, and Resources—are the criteria that are used to score. They're scored on a scale of 1 to 7, 7 being outstanding. Then, the application is scored overall on a scale of 1 to 5, and the scale is the opposite; so 1 is the highest. So, far, in our research centers, all applications scored outstanding or excellent have been funded. If you aren't funded on the first try, we encourage you to think about a resubmission. Obviously, if on a scale of 1 to 5 (with 1 being the best) you're scoring a 5, you really need to do something different. Talk to your Program Officer and address the reviewers' comments. You will get comments on this and then think about resubmitting.

Slide 55

I'm giving you a website here for the peer review process in more detail—
<https://ies.ed.gov>.

Slide 56

Some first steps—read the RFAs carefully. We have abstracts of all our funded projects up on our website. I think it's worthwhile for you to go and look at projects that cover the same topic or goal or both and see the kinds of things that are being funded. They may raise some issues that you might want to think about for your own project.

We also have Resources for Researchers on our website. It has things like power analyses, papers, and a link to optimal design software for power analyses. Things like that that are probably especially relevant for Goal 3 and Goal 4. We also do a RCT Summer Training Institute and we have videos of these up on our website. If you want to look at some of the sessions, we have them up. I hear the introduction is terrific. There are a lot of things that you can be looking at on this website.

And also call or e-mail the IES Program Officers early in the process. They're really a resource. E-mail is a better way to be in touch with them, especially at times of the year like this when we are being inundated with calls or requests for information. Do your homework and be ready but, if you have some questions that they can help you think through, they'd be more than happy to discuss your ideas with you.

Slide 57

A couple months before a deadline, we like to receive a Letter of Intent. They're not required but they're important for two reasons. They're important to you because they're the first time that we hear about your project in any great length—you're writing a brief summary of it. If we see something that's amiss, we'll write to you. That might help you because maybe you overlooked it. It also helps us because it lets us know how many applications we should expect and what expertise we need on our panel. If you're looking at kids who are deaf and hard-of-hearing, we obviously would get that expertise. Or if you're doing single-case design or quasi-experimental or regression discontinuity designs, we want those folks with expertise on the panel reviewing it.

LOIs are submitted electronically. The RFA gives you the website for you to submit it electronically. We encourage all researchers to submit Letters of Intent. The deadline is past for June applications; it was the 19th of April. If you are planning on submitting in June and have not done a Letter of Intent but still want to submit, we recommend you send a description to the Program Officer just so that they know what's coming. If you're planning on submitting in September, the July 19 deadline is for you.

Slide 58

Applications are accepted twice a year; this has been the case for the last several years. For Fiscal Year 2013, applications are due June 21 and September 20, 2012. As I said before, we do not accept late applications. The authorized representative of your institution, not you (the PI), actually submits the grant to IES.

Slide 59

All applicants will receive e-mail notification of the acceptance of their application. You get notification that it's been accepted, it's gone into the system, and you will get reviewers' comments after the whole process is over. Typically, reviewers' comments are very helpful if you choose to resubmit. Notification will be about 8 months from the date of submission.

If you're not granted an award the first time, plan on resubmitting and talk to your Program Officer. Program Officers aren't part of the panel, but we can sit in the back of the room and listen. We often get very good information that kind of supplements what you'll get in the reviewers' comments. That could be helpful to you if you talk to the Program Officer.

Only a very small percentage of grants are awarded for the first submission. Don't beat yourself up if you don't get an award the first time. Think of it as a process. Get over being angry that it wasn't funded, and then just look back at the comments constructively and think about how you might revise. Obviously, talking to your Program Officer will help that.

Slide 60

Here's our website again. I have my e-mail address and Caroline's e-mail address. I'm happy to answer any questions. But remember, I'm in the Special Education Center. I can certainly handle those questions and direct you to the Program Officer. If you don't know who you should be talking to, you can e-mail me at NCSER. Caroline is more than qualified to help you navigate NCER.

Question: *"If you were the PI on an original study, can you serve as the PI on the Replication study application?"*

Answer: *Yes, you can. We don't have any restrictions on that. Some people developed an intervention under Goal 2 and now see a real need for this intervention for Spanish speakers or for kids who speak Spanish as a first language. They're doing that and they're obviously the same PI. That's not an issue.*

Question: “Are copies of funded grant applications available online?”

Answer: *They’re not available online but we do have all of the project abstracts available on the IES website. If you’re interested in a particular research topic and goal, you can search by research topic, by center, and by goal within a given research topic if you just want to see examples of recently-funded projects. You also have the option of requesting an application from the PI directly or through a Freedom of Information Act request if you choose to do that.*

For a Freedom of Information Act request, you need to go on the Department of Education website and type in “Freedom of Information Act” and it’ll walk you through what you have to do. I think from everybody’s perspective, it’s easier if you talk to the PI. Many are willing to send you sections of their application. Obviously, they don’t want to send proprietary information though.

We have a couple questions about Letters of Intent that may be of interest to all the participants.

Question: “Can we still submit an LOI?”

Answer: *You can send an unofficial LOI to a specific Program Officer, and we will pass that on to our Standards & Review Office. It’s also helpful to us though because it serves as a trigger for us to provide technical assistance to you. So, if you missed the June LOI deadline and you would still like to send us a brief description of your project and identify the goal, please feel free to send that to the relevant Program Officer.*

Question: “If we submitted an LOI with the wrong research goal identified in the LOI, is it okay to submit the application with the corrected research goal?”

Answer: *The answer is yes.*

It’s one of those things that internally we try to correct. For example, Caroline heads the Early Learning Policies and Programs in the National Center for Education Research; I head the portfolio in Early Intervention and Early Childhood Special Education. Someone may have inadvertently submitted a Letter of Intent to her for a Special Education project. The Centers are small enough that we typically can just e-mail it or talk to the correct person and rectify it that way. Until you submit—hit the button for the application—you have room to figure out which is the appropriate home for it.

Question: “Are schools, districts, or research and evaluation departments within a school district eligible to apply?”

Answer: The answer is yes.

Question: “Does the school district need to include an institution of higher education on the application?”

Answer: In general, we don’t have that as a requirement, but you should think carefully about your proposed project and make sure that you have relevant expertise represented. If that means including somebody from an institution of higher education, that’s something you should consider. Details like that are things you would want to talk to a Program Officer about to make sure you’re putting in a competitive application.

Think about your research team. Think about the expertise you need on the team and what you’re going to get from each of them. It may be that you have the expertise in-house, but it may be that you need a methodologist (or maybe someone with the experience of running a grant that you don’t currently have in the school district) and you might want that. Those are things to think about. Again, as Caroline said, it’s probably useful to talk to a Program Officer.

Question: “Is it okay to work in the same district for the Replication study (i.e., Conduct the original study in a given school district and replicate it there)?”

Answer: It really depends. It depends on the nature of the question. It depends on whether it’s at the student-level and researchers want to work with new cohorts of students in that district who are somehow different from the students who were in the original population—same thing if they want to work with new teachers. It really depends, and you would have to think carefully about the nature of your questions and also how you would go about justifying such an application. You should provide a strong justification for a Replication study in the same district and its added value.

Question: Do we need to submit an LOI if we’ve already talked to a Program Officer.

Answer: I would recommend doing so because it is sent formally in the system. You will get a formal response from the Program Officer. It will also give the Standards & Review Office the information it needs to plan for the number of reviewers and also the expertise needed.

Thank you all for being such an attentive audience. Best of luck with the work that you do, and I'm sure I'll be hearing from some of you. Thank you.

This concludes today's webinar, the Grant Writing Workshop for Efficacy & Replication Projects and Effectiveness Projects, part of the Research Funding Opportunities webinar series. Copies of the PowerPoint presentation and a transcript from today's webinar will be available on the IES website shortly. Thank you and have a wonderful day.