

## Grant Writing Workshop

Christina Chhin:

Hello, I'm Christina Chhin. I am the program officer for the Mathematics and Science Education Research grants program. Welcome to the IES Grant Writing Workshop. I also have my colleague here.

Amy Sussman:

This is Amy Sussman. I'm the program officer for the Early Intervention and Early Learning in Special Education topic area within the National Center for Special Education Research.

Christina Chhin:

Thank you again for joining us. The purpose of this workshop is to provide you with some information and also some advice on how you could write a competitive and successful application to IES's Research Grants Program. The focus of this particular webinar is on the Educational Research Grants Program, CFDA84.305A and the Special Education Research Grants Program, CFDA 84.324A. We will not be reviewing all of the various RFAs that we have currently listed. We're just going to be focusing on these two grant programs.

We know that grant writing is a long, arduous process so we're here to help you write the most competitive application possible. When you're writing a grant, you first start out with an idea, then you may start calling people to get your team lined up, along with contacting schools to participate in the study. We also hope that you call us, the program officers at IES to help answer questions and get some advice and feedback. If you're lucky, you may get funded the first time around. However, we know that it can sometimes be a cyclical process and you may need to resubmit an application once or twice before you receive funding. We're here to help with the resubmission process as well.

Before we get into some of the details in terms of grant writing I wanted to provide a little bit of an introduction to IES, especially for folks who may be submitting to IES for the first time. I'd like to provide a bird's eye view of the Institute and how we're situated. So what is IES? IES is the research arm of the U.S. Department of Education. We are non-partisan by law, and we are charged with providing rigorous and relevant evidence to ground education practice and policy. We are also charged with sharing this information broadly, so dissemination is a critical piece of what we do. We hope to identify what works, but importantly we also want to figure out and find out what doesn't work and why, so that we can improve educational outcomes for all students, particularly for those who are at risk of failure.

So within IES, there are four national centers. There is the National Center for Education Statistics (NCES). You may be familiar with the National Assessment for Educational Progress that is housed under NCES. We also have the National Center for Education Evaluation and Regional Assistance (NCEE). Under NCEE, you may be familiar with the What Works Clearinghouse (WWC) and the Regional Educational Labs (RELS). The two remaining Centers in IES are highlighted in blue, and represent the two Centers that Amy and I are part of. We are the National Center for Education Research and the National Center for Special Education Research. These two centers primarily focus on awarding discretionary research grants.

Another thing I want to point out within the IES organizational structure that is important and relevant for grant applicants is the Standards and Review office. As you can see the Standards and Review office is separate from the four centers, and that is purposeful since the Standards and Review office handle all aspects of the review process from selecting reviewers to processing applications, and convening review panel meetings. Because of this separation, NCER and NCSEER program officers can provide a lot of input to you the applicant as you're preparing your application. Amy will talk a little bit more about the review process later on, but I just wanted to point this out in terms of the structure for IES.

As I'm sure you are aware, we have an IES funding opportunities webpage. On this funding opportunities webpage you will see that there are a number of research programs we are competing for FY 2016. As I said, we're going to be focusing on the Educational Research Grants Program and the Special Education Research Grants Program during this webinar, but if you or your colleagues are also interested in other funding opportunities, you can find more information about them on this webpage as well.

Just to reiterate, we're going to focus on these two specific grant programs - Education Research and Special Education Research. An important thing to note about these two specific grant programs is that they are organized by both research topic and research goal. We will be spending a good amount of time during this webinar talking about the requirements and advice for how you can address the topic and goal requirement so that you can write a competitive application.

First, I want to talk a little bit about the specific changes that have been made to the RFA. This year, we have made some significant changes that I want to make sure everyone is aware of. So for 84.305A, this is the Educational Research RFA, we are not accepting Goal 2 – Development and Innovation applications. So, no Development projects will be accepted for this funding cycle. In addition, the maximum budget award amounts have been reduced for each Goal. So please pay attention to the maximum amount that you can request for each goal if you are applying to the Educational Research Grants RFA as they have changed. Additionally, for Goal 3, we have increased the number of years in which you can request funding, from a maximum of four years to a maximum of five years.

We have a question here on whether IES program officers could be more involved with helping applicants than program officers in other offices. In general, we can be very involved in helping you with your application, and we can talk more about that in a little bit.

Some of the changes this year that are relevant for both sets of RFAs (both 84.305A and 84.324A ) include the inclusion of the dissemination plans as a requirement under the Resources section. I believe in the past we had the dissemination plan as part of the Research Plan section, but we have changed that so that you would have to address that under the Resources section.

Under Goal 3- Efficacy and Replication, we clarified that we are accepting applications looking to do exact replications in addition to replications that are modifying conditions under which the intervention is being implemented. In addition, for Goal 4 - Effectiveness, you now only need

evidence from one prior efficacy study. In the past, it was a requirement to have at least two, but now, you just need one prior study.

Before I go into the next section I just wanted to pause here for a minute to see if folks on the line had any additional questions. If you have questions, please use the chat function. Okay, so it doesn't look like there's any questions at this point, so I will go ahead and go to the next section.

So now, I'm going to share with you some general tips for writing a competitive application. So what do you need to do? First and foremost, we think that you really need to sell your research idea. What I tell applicants is to think of your project narrative as a persuasive essay. You should really try to promote yourself and promote the research you are doing. You want to show that you are an expert in the field and you have a strong idea for how you can tackle the proposed education research problem.

So in the opening paragraph of the Significance section, you want to describe the significance of the proposed work, and be clear about what work will actually be done. This opening paragraph will help organize the rest of your application. We find that reviewers are most receptive to applications that have clear structure and are well organized.

Amy Sussman:

I'm going to interrupt for just a moment. We're getting a lot of questions about this, so I just wanted to let everyone know if you're having trouble hearing us please call the phone number that Webex provides. At the top of the screen it will say communicate and that's where you'll find the number to call in. It will give you a code and then you'll be able to hear us.

Christina Chhin:

Okay, hopefully the audio issues will be resolved soon. So back to the opening section of the Significance section of the proposal. You should really have a strong statement of purpose that's concise, but also attention grabbing. What I find the most useful and the most helpful is if you're very clear and specific in terms of what it is you're trying to address. Applications that start out with a very general statements such as "The purpose of this study is to do X and because students are struggling in mathematics" are not very helpful. You want to be able to grab the reviewers attention right away and convince them that there is indeed this problem and that you have a solid way in which you're going to address that problem. So we definitely advise you to share your statement of purpose, share your application with other researchers, friends and family member. It may be especially helpful to have people who are not familiar with your research take a look at your application just to see whether they understand what it is you're trying to do and whether they think you're making a convincing argument for why you're proposing to do what they're doing.

Another important aspect of your application is your theory of change. The theory of change really runs across the board in terms of the Goals and Topics. You really need to have a strong model underlying your research and it should provide a road map in terms of how you're going to structure your project narrative. We understand theories of change can also be constantly evolving. There are similar terms to in other fields for theory of change. Some people call it

logic model or logical framework. It's pretty much the same as what we are referring to here as the theory of change.

So in your research plan your theory of change definitely plays a critical role. The theory of change will help specify what it is you're exploring, creating, validating, or testing. Your theory of change should identify the key aspects or the key pieces of what it is you're exploring or creating, or whatever intervention or program it is you're looking to research. And those pieces will tie directly to the outcomes that you're going to be measuring. The theory of change will help frame what you'll be measuring, how you'll be measuring it, along with who and where. So are you measuring teachers? Are you measuring students? Are you measuring principals, or are you measuring them all? Are you going to measure outcomes in the treatment and control groups? It'll also come into play when you're thinking about the timeline of the project. When should you be collecting that data? So as you're working on your theory of change, or at any point in the writing of your narrative, you should feel free to share that work with your program officer. We're here to help and we're here to provide feedback whenever we can. So if you're unsure, for instance, if you're submitting to the correct Topic or the correct Goal, we're here to help you figure that out. Okay?

Also, this may seem like a pretty obvious suggestion but having a clear writing style is important. That's one thing that reviewers often complain about. So you want to make your Significance section not too big or general. You want to provide a sufficient amount of detail in terms of what's going on with the intervention, your development cycle, or your data analysis plan. Try to avoid the use of jargon and assume that everyone knows what you're talking about. We have a pretty diverse review panel, so your application may be reviewed by individuals who are not from the specific research field that you are in. So you want to make sure that any terms or approaches you're using that would be understandable to any educated person. Also, please make sure you're using appropriate grammar.

Lastly, I wanted to point out here that we do have several resources on the web that may be helpful. So and here's some links. We have a Resources for Researcher's page and I'm sure you've already visited the webinar page if you signed up for this webinar, but we also have several other webinars coming up that may be relevant and useful for you as well. Now, I'm going to pause here because I think we have a few questions.

Amy Sussman:

We got a few questions, but I would like to see if we can hold off because some of them might be covered later in the webinar. So if we are not answering your questions right now, hopefully we'll get to it during the course of our presentation. And if not, we'll go back at the end and we'll look at the questions we haven't answered, and we'll answer them then.

Christina Chhin:

Alright. So, onto some general requirements to think about. When applying to the Educational Research Grants Program or the Special Education Research grant programs, all studies must meet these requirements. One, they must measure student education outcomes. So even if you're applying to the Effective Teachers/Effecting Teaching topic for instance, you must address student education outcomes. The research also needs to be relevant to education in the

United States and the research should address authentic education setting. And you must apply to a single research Topic and a single research Goal. You may submit multiple applications, but each application must address a single Topic and a single Goal.

So in terms of student outcomes under the Education Research Grants RFA, we have provided here a rubric in terms of what outcomes are required for the various grade levels. So, if you're focusing on prekindergarten students, the outcome there is mainly school readiness, which can encompass pre-reading, language, vocabulary, early math and science, and social behavioral competencies. If you're addressing student outcomes from kindergarten through grade 12, the outcomes you address can run the gamut from learning achievement, high order thinking to improvements in reading and writing, math and science, progress through the education systems, improving social skills and attitudes. Although there are quite a number of student outcomes you can address under grades K to 12, you should consult the Topic area in which you're applying to in order to determine which of these outcomes are most relevant.

If you're focusing on the post-secondary student population, the outcome should focus on access to, persistence in, and progress through the completion of post-secondary education. If you're focusing on adult education, the outcomes there are focusing on achievement in reading, writing, and math, along with access to, persistence in, and progress through the completion of adult education programs.

For the Special Education Research Program there are two main groups of student outcomes. You'll see that under the Special Education RFA, we start from birth up until high school. If you're focusing on birth through age five, the main focus should be on developmental outcomes and school readiness. If you're focusing on kindergarten through high school, the focus is on achievement in them core academic areas, reading, writing, math, and science along with behaviors and social learning and academic contexts.

Okay - we had a question here about how we're defining authentic education settings. In the RFA, we provide a pretty clear definition of what is meant by authentic education settings. It is not just limited to K to 12 schools.

Amy Sussman:

And it depends a lot on the topic. We weren't going to go into these kinds of details, but, for example, if you're looking at infants and toddlers under the Early Intervention Program, which is my program, an authentic education setting could be in the home. It could be in community settings. It could be anywhere the child could receive services. So really, it depends a lot on the topic and the age group in which the topic covers.

Christina Chhin:

Also, for reference, in the Educational Research Grant RFA, that information is shown on page three of the RFA. We have a pretty comprehensive list there of what is meant or what is classified as authentic education setting. And again, if you have questions about whether the research you're doing would be applicable or would be allowable, please contact your program officer and we can help.

Christina Chhin:

Okay. So who should read the RFA? In short, we think everything should read the RFA, but in particular, we would highly recommend the principal investigator read the RFA and also any research or team members that are part of your application. So that includes co-PI's, statisticians, methodologist, and develops. Essentially, all the key players on your project should read the RFA. In addition, your assigned projects sponsor programs officer would also be a person that should be familiar with the RFA as well. We think reading the RFA is imperative because it has quite a number of requirements both under Topics and Goals. So it's good for all players to be knowledgeable of what it is they're applying to. Okay. So I'm going to pause here for a minute to see if there are questions here that we can address.

Christina Chhin:

Question - is there a preference for first versus third person narrative? Typically, I see third person narrative. You don't really see much in the first person. One exception is in the letters of support or agreement from schools or consultants. That's typically written in first person, but the project narrative itself is typically written in third person.

What's the timeframe for receiving feedback on LOI? We are in the midst of reviewing that right now, so you should receive it from your program officer shortly.

Amy Sussman:

So there's a question about targeting social skills as outcomes and social skills that support learning - yes, they would be considered student outcomes related to education. There's a question about international schools. Someone could be in another country -- a researcher can be in another country and you can be in another country and receive a grant, but the research itself must be relevant to the U.S. education system. Also, please note that foreign universities, foreign schools can't take indirect costs. So it really makes sense to have the prime award go to someone in the United States because they could get the indirect cost for their institution.

Christina Chhin:

All right. I'm going to go ahead and transition now to talking about the requirements for the research Topics. So, as I mentioned earlier all applications must specify a single research Topic and when you submit your application, on the form SF424 form, there is a box, item 4B, in which you would specify which Topic area you are applying under. So please make sure you specify the Topic there in order to be responsive to the application, and it's also helpful if you identify the Topic as a part of your abstract and project narrative. This information is helpful to the Standards and Review office as they are screening your application to ensure that you are submitting to the right Topic area.

So under the Education Research Grants Program RFA, we have ten topic areas. Under the Special Education RFA we have eleven topic areas. And, as I mentioned earlier, under each Topic area you must address student education outcomes relevant to the specific Topic. The grade range you may be focusing on may vary by Topic. Also, depending upon the focus of your project, it may actually fit in more than one Topic area. It is a common occurrence, but you have

to make sure you're selecting a single Topic area and your program officer can help you with that if you have any questions.

For the Education Research Grants RFA, we have a table here that lists the various Topics and the grade ranges that are relevant for that Topic area. So, for the Early Learning Topic, the focus there is just on pre-K students. If you're looking to do submit to the Cognition and Student Learning, and Education Technology Topics areas, you can focus on students from pre-K to grade 12. The rest of the Topics focus mainly on grades K to 12, except for Postsecondary and Adult Education. So, if you're in the situation where your project can actually fall under multiple Topic areas choosing among them can be kind of tricky. To help you determine which Topic to apply to, think about the literature you're citing in the application. In addition, think about your own expertise and the expertise of your team. Also, think about if the focus is on a specific sub population of students or teachers.

We have a question here - "Does the chart you just shared suggest that a project can't study effective teachers in pre-K?" Let me go back. So if you were going to look at teachers at the pre-K level, you would have to apply to the Early Learning program as opposed to the Effective teachers and Effective Teaching Topic, which focused on students in grades K-12. Okay. Now, I'm going to switch over and have Amy begin to discuss the research goals.

Amy Sussman:

Hi, I can see that there are still questions we haven't answered and I'm hoping that a lot of them will be answered in the second part of this talk, but if not, we will go back and look to see what we missed and if then we still don't answer it, please send it again.

Well, I will be talking about the goals. So as Christina mentioned, you have to choose a topic and a goal. So they're each very important. This is very detailed information on this slide about where you indicate your goal as well as your topic. The SF424 is the cover sheet to the application and you'll also include it at the beginning of your abstract and when you start writing the narrative to your proposal you'll want to mention it again. It's actually very important to make sure you are submitting to the right place. We have a lot of applications where someone accidentally chooses the wrong goal or the wrong topic for when they submit it and that winds up causing a lot of confusion and it could lead to the wrong panel reviewing the application, or it could even lead to someone deciding that it doesn't fit the RFA and it might be screened out.

The goals describe the type of research to be done and every application has to have a particular goal -- and they're actually quite different, they're very structured, which is one of the reasons you really need to read the RFA carefully. You need to choose a topic and goal and the combination has to fit what you want to research. So how are you going to do that? First of all, as Christina already mentioned, the program officers do play a big role in this. You should reach out to them. They are a very valuable resource for thinking about where your proposed projects fits within the structure of IES grants, as well as more specific feedback about the proposal.

So as most of you probably realize the letter of intent was already due a few weeks ago. This is a primary way in which you're reaching out to the program officer, because somebody -- generally the program officer for the topic to which you applied -- will respond to you to let you know that

your letter was received, and will let you know if there are any problems, whether or not it's a good fit. And so this kind of starts the conversation with the program officer about whether it fits where you plan to apply. You can do this before or after the letter of intent is due, but you can still contact the program officer if you did not send out a letter of intent.

If you do not send a letter of intent, you can still submit an application. The letter of intent is strongly encouraged, not required, but we really do encourage you to send the information that would have been in your letter of intent to a program officer, a quick summary of what you plan on doing, for two reasons. One reason is that it will start a dialogue and let you know whether or not it's being submitted to the right place, but the other reason is that it really helps IES to know what to expect, what applications we're going to receive. The scientific review office – the one that Christina mentioned earlier – is in charge of the review process. They need to know what kind of reviewers to get on board and bring onto the panels. So knowing what kind of applications are going to come to us will really help make sure that the correct people – the people with the right expertise – are reviewing your application.

Okay, so the actual research goals. We sometimes refer to them by the name and sometimes we refer to them by a number, and so if I'm interchanging them, I apologize. So what we call Goal 1 is Exploration. And I'm going to go through these each in detail in a moment. Goal 2 is Development and Innovation and there's an asterisk there just to note that the National Center of Educational Research is not competing that one this year, but the National Center for Special Education Research is competing it. Then Efficacy and Replication is Goal 3. Goal 4 is Effectiveness, and Goal 5 is Measurement. This chart gives you an idea of the maximum amount of time and the maximum amount of money that you can request for each goal. And even within each goal, there are sub-types and those are described in detail in the RFA. It's very important that you pay attention to this, especially the fact that there are differences between the two RFA's, because if you are even \$1.00 over the amount – if you are any amount over the maximum – your application will automatically be screened out and nobody will review it. So it's very important.

The next couple of charts just give you an idea of what we have funded. So the National Center for Education Research -- this chart shows that the most common goal that has been funded to date are the Development projects, that's Goal 2, Development and Innovation. And the next most common would be the Efficacy and Replication goal. And you'll see for NCSER – the National Center for Special Education Research -- is very similar and in fact, a slightly higher proportion is Goal 2, but it's a really similar pattern of funding.

Now goal requirements. There are multiple parts to each section in the RFA. There are the requirements and then there are the recommendations. So that's what this slide is referring to. The requirements mean that your proposal will be screened on it. If you don't meet one of the requirements, it will not be reviewed. The recommendations I strongly encourage for you to write a good or competitive proposal. So that's what this is about. And also the note at the end – it's fairly new, I think it just started last year – that all applications must also include a dissemination plan. And so that's a fairly new component of the RFAs across all goals.

So, Exploration projects, Goal 1. The goal here is to identify malleable factors -- those are the ones that can be changed -- that are associated with student outcomes. And you might also want to look at the factors that mediate or moderate this relationship. So, malleable factors are those that are under the control of the education system. Something that can be changed and some examples are here. You can work directly with students to change their skills, their behavior. You can work with teachers and change their practices. You can work with the school and change climate, organization. And the most obvious example is probably education interventions. These are the actual strategies, curricula, approaches to education that the school system has control over. So you're looking at the association between a malleable factor and student outcomes. And the student outcomes are specified in the RFA, but they are similar outcomes across the goals. They are student education outcomes, which include skills -- cognitive skills, social skills -- that support learning, but it will include standard sort of achievement and graduation rates. These are the outcomes across all goals.

So the next one is Development and Innovation. The goal here is to develop new interventions or modify existing ones to impact student outcomes in authentic education settings. Note again that this year only the National Center for Special Education is competing this, so if you want to develop an intervention and your population is children with disabilities or those at risk for disabilities you might want to take a look at NCSE's competition this year. It's an iterative development process, which means that in the research design you will be getting feedback and then this will feed back into the design, and you might modify what you're developing. It's a cycle so that you're using feedback in order to modify and make the best intervention possible.

Christina Chhin:

We have a question here about what we actually mean by a "recommendation." In the RFA, we make the distinction between recommendation and requirements. Amy will address this later, but if we don't address your question please let us know at the end.

Amy Sussman:

Okay. The question I see is very relevant to what I just said about the iterative process. "Is it considered part of the theory of change?" No, the theory of change is a more overarching view of what you're looking at and the iterative process is just the way in which you're doing the research. It's the method of research. It's not the theory of change which is a more overarching. You know, I am actually going to get to theory of change. We'll go into a little bit more detail about the theory of change and maybe it will make sense then. So the next step here is a well specified theory of change, which Christina covered a little bit earlier and I will cover a little bit more shortly. In a Development goal you will also be collecting data on the feasibility and usability of interventions in authentic settings. So this means is it easy to implement? Can teachers implement the intervention? Is it highly usable? Is it user-friendly? That's what that is looking at. Then fidelity -- this is usually fidelity of implementation. Can the intervention be implemented the way it's supposed to be implemented or is it operating as it's intended to be operating?

And finally, you will look at pilot data on student outcomes in a Development study. We call this looking for "evidence of promise" or the promise of efficacy for the intervention. The RFA lists very specific designs that we look for in a pilot study. And please do note that when you're

designing a Development study, the focus is really on the design of the development of the intervention. You are limited to 35 percent of your budget for the pilot study.

Christina Chhin:

And I just wanted to let you know that we do see your questions there about and the goal specific requirements. We're going to hold off on answering them once Amy's done going over all the goals.

Amy Sussman:

Okay, Efficacy and Replication is what we refer to as Goal 3. This is a goal to evaluate a fully developed intervention to determine whether it has a positive impact on student outcomes. So this is testing a causal question. Does the intervention lead to these outcomes? You might ask what needs to be implemented under routine practices even if you're testing under ideal conditions. So under this goal you can test the intervention under ideal conditions. And by ideal conditions we mean the developer can support the implementation, can provide support for the school to make sure it's implemented properly. But you have to keep in mind what it would be like under routine practices. Because eventually if this intervention shows promise and there's evidence of efficacy, eventually it might be taken up by school systems and the developer will not always be there.

You should consider how the developer is playing a role in the project to make sure that there doesn't seem to be a conflict of interest so that there's no possible bias in your results. And in this goal, you can look for mediators to see what might mediate the relationship between an intervention and the outcome, but we note that this might not be your primary analysis. These might be secondary questions. So if they're secondary questions, this has implications for power because we want to make sure that you power for your question -- all your questions, but it's really required you have enough power for your primary questions. Also what's not on this slide and should have been is that this goal needs a data management plan. And that's also new. That was new this past year. So the data management plan refers to how data will be handled and shared. So how will data be secure, privacy issues of confidentiality, and also how it will be shared with the public, because there's a trend in federal agencies now toward what's referred to as transparency of government funds. So there's a trend now to share not just your findings, but the data itself eventually. So the whole government is moving in this direction and the data management plan needs to address how this will happen.

Effectiveness projects also evaluate a fully developed intervention, but in this case it's an independent evaluation. The developer should not be involved and it is under routine conditions – what would normally happen in an education setting, not under ideal conditions where the school is getting support for implementation. So IES expects the intervention to be under a routine practice. Evaluators must be independent of the developers, so this is avoiding a conflict of interest and possible bias in the results. Still, you need to have at least one previous efficacy study, so there needs to be strong evidence that there is efficacy before you move on to an effective project. So, is it efficacious under ideal conditions, and if so then let's move on to the routine conditions.

We don't expect this to be widely generalizable from a single study. For something to be effective is probably going to take more than one effectiveness study. And I want to point out size is not the key distinction between efficacy and effectiveness. We used to call this goal Scale Up, which does refer scaling it up to a greater size, but that is not really the key here. We changed the name to Effectiveness to emphasize that it's really about the conditions under which it's being implemented. And the same note here about exploratory mediator analysis versus confirmatory. It could be your secondary question as opposed to your primary question. The cost of implementing the intervention in this is limited to 25 percent of your budget. So we don't want you to spend your whole budget on just implementing the actual intervention, we want you to spend most of it on researching the effectiveness of it. And just like the efficacy study, this also requires the data management plan.

Goal 5, Measurement projects. Measures can be developed in other goals as well, but it wouldn't be the main focus. So you might be developing an intervention under Goal 2 and you might need to develop a measure that is specific to that intervention in order to measure fidelity of implementation, and that's allowed, but a measurement project is when your key focus is on developing an assessment or a measure. This needs to include an assessment framework, which is sort of the rationale for the assessment and the theoretical basis behind it, as well as the validation activities. And the assessments must be linked to student outcomes. So to give you some examples of the type of measures that we see developed under this goal: You can be assessing an academic or developmental skill. This can be something used in progress monitoring or guiding instruction. You might be doing a screening measure. Maybe you're screening for a disability. Or you can design a measure to be used in research.

So the RFA states what the expected products are for each goal. In fact, each one has a section that says "projects under the [blank] goal will result in the following," and it actually lists what is expected as the outcome.

Christina Chhin:

Let's stop here and go over some of the questions that we've received about the goals. I know there were quite a few of them, so we'll try to answer most of them now. If we miss any, please let us know. So we'll start with this one - "Is the assessment framework a theory of change?"

In essence, it is. I would say consult with your program officer because it really depends upon what it is you're looking to do. It can vary, but in general as a rule of thumb I would kind of say it's pretty similar, but again, talk with your program officer because it will -- it may vary depending upon on your focus.

Christina Chhin:

"Do exploration projects require a theory of change?" I would say, yes. The theory of change really is relevant to all the goals.

I remember seeing an earlier question about whether development work could be done as part of a Goal 3-Efficacy study. Please note that for a Goal three project, the intervention has to be fully developed. So there should be no further development work on the intervention.

Amy Sussman:

Yes, that's correct. There's another question up there about the difference between education interventions that fall under exploration versus development and this is actually a very tricky question. The interventions that fall under exploration -- they're being used to test an association rather than being developed, but it's actually trickier than I can get into in this webinar. So I really encourage you to talk to your program officer about this particular issue because it is tricky having an intervention within an exploration project.

Amy Sussman:

Okay, question – what is the best way to show that a pilot study is no more than 35 percent? This is a statement you would want to make in the budget narrative explaining that it's no more than 35 percent. It's something that someone should be able to figure out. So when you're writing your budget justification, your budget narrative explaining your budget, someone should be able to look at that and know what your money's being used for and figure out whether or not it's being used for the pilot study or the development. It should be obvious once you write that narrative.

The pilot study power – so this is about single-case design studies. This is again, something that you should talk to your program officer about, because it's not powered in the same way that a group design is powered. I do recommend that for any design, but single-case in particular is an evolving area, but I would take a look at the “What Works Clearinghouse” standards. They have guides to various designs like regression discontinuity and single-case design. So that might be a good place to start and also talk to your program officer about it.

Sorry, it's taking us a little bit of time to actually find the questions. Is it good to have a comparison group in an Exploration study? It's not necessary. It depends on your research question. I mean, your research question is really going to drive it and we've seen both. The studies can have a comparison group if that answers your research question, but it doesn't have to. Can you provide an example of theory of change? We're going to provide an example of that.

Amy Sussman:

Okay, we were just told to remind you to use the chat feature for questions because part of our struggle in reading the questions is that some people are not using that function and we're toggling between the two. Okay, I'm going to move on now to the four sections of the project narrative and I hope that this might help clear up some of the questions that were already asked. So there are four required sections for all proposals in both competitions. There's Significance, the Research Plan, the Personnel section, and the Resources section. And each of these sections will be reviewed individually so you will wind up getting a score for each of those sections from the peer reviewers and then they'll also give you an overall score -- an overall scientific score for the proposal as a whole.

The project narrative should address the requirements by topic and goal that we discussed earlier. Again, read the requirements carefully. You don't want your proposal to be thrown out before being reviewed. All of the applications are 25 pages, single spaced, and the project narrative will

be supported by appendices; we'll cover the appendices a little bit later. Despite having the availability of appendices, all your critical information that you really, absolutely need the reviewers to see should be within the 25 pages of the project narrative.

We'll start with the significance section. So this describes what will be your research question that you want answered. What intervention will you be developing or evaluating, or what measure will you be developing or evaluating? This should provide a compelling rationale for why your project is important. There should be a theoretical justification why this should work based on theory -- this will be your theory of change. And then empirical justification, so in your theory of change you have links between (and I'll show you an example), but in each association within your theory of change you should have empirical evidence. So you're saying that this a theory about why this should work and it's because of evidence for these different components that show that this should work.

Then there's your practical justification, which is the general importance of the topic. Don't assume the reviewers know the significance of your work. It might be someone in the field of education who's not in your specific area of research that was assigned to review your proposal. If the RFA talked about the general importance of an area, don't just spit that information back to us in a proposal. However, if the RFA discusses what areas might have research gaps -- there's a section at the end of each topic that talks about either research gaps or extra considerations depending on which competition it is, different terms are used -- but if you're addressing something that was pointed out in that last section then you should actually repeat that back at us. Show us that this is the importance of your topic. You are fulfilling the need to address this research gap, for example.

So these are some problem areas. When talking about an intervention, or in the case of a Goal 1 malleable factor, one problem area is when it's unclear to reviewers what the intervention actually is. So there might be many different components to your intervention and you might do a great job going through each component, but they might not be able to envision how they all fit together. And that's important, as we know. Here a graphic might help.

Another problem is that it's unclear how you would implement this to fidelity. If the reviewers can't picture based on your description how it would actually be implemented with fidelity, this is going to affect the score. And the intervention might not be shown to be strong enough to expect an impact. So, for example, when you talk about your background research in the beginning of your Significance section, there might be no evidence showing that the association should exist. For an efficacy study, you might not have enough evidence of promise for efficacy. And so these are things that might be missing in your Significance section that will have an impact on your score.

Also, another problem is when you're focused too much on action; meaning, what you're going to do in the intervention as opposed to content of the intervention itself. So an example is this is how the intervention will be -- it will this be many hours or over this many weeks, and this is what's going to happen -- but not detailing the actual coverage of the sessions, what will the sessions be covering? What will the teachers be learning in their professional development

sessions? What will those students be learning in the intervention? So these are some problem areas that you want to try to avoid when writing your Significance section.

Theory of change. Why is a malleable factor expected to be related to a student outcome? So, in Goal 1, why is that relationship expected? What other evidence is there that you should expect such a relationship? Why should the proposed intervention lead to these outcomes? Again, you need to show what evidence already exists that what you are going to look at makes sense.

If you are developing an instrument or measure, why is this assessment going to adequately measure a particular construct? How should your measure as you're designing it be related to the construct you're measuring? So, a well laid out theory of change makes it clear what is expected to happen and in what order it will happen. And it helps -- it really provides a good framework for reviewers to understand your research plan. So if you have a good theory of change spelled out, when they get to the details of your research plan it will all make sense because it fits within that framework. And in this case, a graphic could be very helpful, and we'll have a couple of examples.

In terms of demonstrating how the intervention should work and why we need it, you want to talk about content. What the students should know and be able to do. How does your research meet this need? Go through what instructional techniques and methods are going to be used and why they appropriate. And the delivery system -- how have you arranged to deliver the instruction? What you want to talk about is what aspects of your intervention are different from the counterfactual condition. So, how is getting this intervention different than services that are already being provided or what is often called "business as usual?" And what are the key factors or the core ingredients that make your intervention distinctive from other interventions that propose to have the same goal and impact the same skills? You really need to make your intervention stand out.

I think this is what a lot of people were waiting for. It's an example of a simple, easy-to-understand theory of change. You're starting with a particular target population, which you've identified. You're spelling out your intervention, and then you're spelling out the processes by which your intervention should work, and then in this case this example happens to have mediation with intermediate outcomes. There could be proximal outcomes, outcomes close in time like right at the end of the intervention and then the ultimate student education outcomes that could be distal. This example shows mediation with the intermediate outcome. When I was referring to empirical evidence earlier and how empirical evidence should support your theory of change, what I was referring to was each of the arrows here. Each of the links between these components of your theory of change graphic should be supported by some previous evidence so there's reason for the reviewers to believe that what you're looking at will work.

These are things not to do. You should not overwhelm the reader with way too much detail in your logic model or your theory of change, and don't use color as a key because usually the reviewers are going to print them off in black and white, and the color won't help at all. This is a very clear example of what not to do. This would be extremely overwhelming. So I hope that these graphics help people understand what a theory of change is because we know it's sort of a complicated concept.

We're going to move on to the second section, which is the Research Plan section. This is where you describe the work you intend to do. How are you going to answer your research questions? How are you going to develop the intervention? How will you evaluate the intervention or validate your assessment? You have to make certain your research plan is aligned to your Significance section. So your Significant section lays out why it's important, with your theory of change and then the Research Plan section has to describe how it's going to address that need for knowledge in that area. And how it's going to actually fit together with the framework you've laid out in the theory of change. It should be a step by step process and a timeline is strongly encouraged.

In the Research Plan you're going to identify the places that you'll be doing the research. So are you going to be in school systems? Is it going to be elementary schools, or high schools? In the case of early intervention, will it be the family's home, maybe doing home visiting. You're going to identify the population that you're addressing and I'd like to just note for NCSER, for the National Center for Special Education Research, the population is children with or at risk for disabilities. Please look at the RFA because the "at risk for disabilities" is defined in a very specific way. It's a very specific child by child method – how are you going to assess risk? It's not general risk like low SES. So once you identify your sample you're going to mention inclusion and exclusion criteria. You're going to mention the size because we would like you to address, for most of the research, power for your analyses; especially if you're going to do a Goal 4 Effectiveness study, you need power to detect the change. You'll have to talk about attrition. What kind of attrition would you expect and how are you going to address it? How are you going to help minimize it? Will you address it by maybe over-recruiting if you're expecting high attrition? External validity. Will you be able to generalize to your population or only to a subset of it? You should address this issue directly in the proposal. And if you're using secondary data you should discuss the data sets you'll be using. Explain what they are, what they consists of, what kind of questions were asked to get the data? That's what you're doing to do for this section.

You're going to have to specify your outcome measures. So as I mentioned before, there could be proximal and distal outcome measures. They can be something immediately following the intervention or they could be more long term. Maybe it's a follow up a year later. Distal outcomes could also be a transfer, a generalization to another skill, for example. Some of your measures might be very sensitive to the intervention itself, very narrow, very aligned with the intervention, but not all of them will be. We'd also like you to include measures of broad interest to educators. The broader interest would include things like achievement, test scores, graduation rates. So for the most part you don't want all your measures to be overly aligned with the intervention you're measuring -- you should probably have both. You should describe the reliability, validity, and relevance of the measure that you're using. Don't include additional measures that are not linked to your research question. We don't want to see you just throw in measures because you might find something. It really needs to be specifically addressed in your research questions. You also don't want to get the feedback from reviewers that it's going to overly burden your participants by having a lot of measures in there. And when you have a lot of measures, you should consider multiple comparisons when you're thinking of your analyses.

You should specify all your measures, not just your outcome measures. If you are going to get feedback that leads into the iterative development process for, let's say a Goal 2 Development project, you want to talk about that. So in this case, you might mention data from a focus group or surveys from your population that will help you then refine the intervention under development. Fidelity of implementation – you want to have measures to show that your intervention is operating as intended. This is where it is specific or aligned to your intervention. You should have measures that can measure a comparison group or a control group as well as your intervention group because you want to be able to see whether or not they have similar strategies. You want to be able to say they are different, that there are different things going on in these groups. And feasibility -- feasibility might be collected through things like surveys from teachers, students, or parents about how difficult or easy it was to implement or receive this intervention.

Qualitative measures. You can have qualitative measures as well as quantitative measures. You'll want to describe the items that will be used and you'll have to discuss how they'll be linked to the construct you're trying to measure. So this is part of validity. If you're trying to quantify the qualitative data that you get, you should talk about the procedures for not just collecting data, but for coding the data as well. So address issues of inter-rater reliability. And discuss how qualitatively collected measures are used in an analysis of quantitative outcomes. So for example, it could help interpret a quantitative analysis. That's one way in which it could be used -- to help you interpret the scores from the outcomes that are quantitative in nature. And in fact, we do allow what we call mixed methods. So we do allow a combination of qualitative and quantitative methods that interact with each other, sort of providing converging evidence.

For Measurement projects, you're going to want to address the issue of alternate forms. If you have alternate forms you have to make sure that the two forms are equivalent. Vertical equating -- if you're going to measure growth over time, you need to show that the different measures for different ages are actually measuring the same thing. You're also going to have to show the fairness of the test -- is it fair across different cultures? And non-student outcomes must be validated against student outcomes. IES is ultimately interested in student outcomes. So if you're measuring something else such as teacher practices, you do need to see whether or not these changes in teacher practice are also associated with changes in student outcomes and student performance.

The analyses. The analyses that you propose in your proposal should depend on the design that you've now already described. They should answer your research questions. They should be aligned very specifically with the research questions that you mentioned in your Significance section. And in terms of the analyses of your qualitative data, an example of this would be if you receive feedback from a focus group of teachers. So, you gather some teachers for a focus group to find out maybe barriers to implementation. You have to discuss not just how you're collecting these data, but how they will be used; how will they be analyzed in order to feed back into the development or the refinement of your intervention.

For more quantitative data, you should show your model, identifying the coefficients of interest and what they mean. Different models should be used for different analyses. You should include equations. You should address clustering if, for example, you're using a cluster RCT.

You should address how the clustering will be analyzed or taken into consideration during your analyses. You should describe your plan for missing data. So are you going to be using missing data analysis techniques? And if so, what technique will you be using? You should check for equivalency at the start and attrition bias. So let's say you're doing an Efficacy study, you want to make sure the two groups are equivalent on key variables and characteristics at the start. And you want to keep track of attrition and make sure there's no attrition bias. For example, one group might have more attrition than the other group, which could affect your analyses. And always check the assumptions that you're using in your analyses. I mentioned this earlier, but you should be mindful of the WWC -- the What Works Clearinghouse -- standards that are relevant to the design you've chosen for your research.

Your Personnel section. The Personnel section should describe key personnel. Every aspect of your project should have someone with expertise in that area. So there should be appropriate methodology expertise, substantive expertise. Don't just expect you're going to hire a person with this expertise; you need to say who that person is going to be. And someone, usually the PI, should have management skills, project management skills. You should also make sure the key personnel have enough time to be the experts on the project. So if we see a proposal with a PI at less than ten percent of their time, then there will be questions. How are they going to have enough time then to manage this project? And the CV should be specific to a project. They shouldn't just be generic cut and paste from another proposal that you sent to another agency.

If you're a senior researcher, definitely show you have adequate time to be the PI and make your credentials clear, because the person reviewing your application might not be in your specific field and they might not already know your background. If you're a junior researcher, you should have adequate expertise to do the work and to manage the project. So if you have any kind of management skills, such as when you were in a graduate program or anything else, even if you didn't manage a full grant, mention those. Just show that you have management skills. And I think it's very important for you to have a senior person as a key person on your project. It makes reviewers much more comfortable giving a junior person a grant, especially in a key role like co-PI.

Resources. You need to show that your institution has the capacity to support your work. And what we say is don't use boiler plate university language. Use language that's specific to your project and how the university will support your research. You should show that all organizations involved understand their roles and they agree to participate with those roles. So this is where your appendix comes into play, your appendices show letters of support from the institutions such as the schools where you'll be getting your participants. You can get them from whoever is supplying the data set that you'll be using. If you're doing secondary analyses, show that you do have access to the data. It's also where you will get your consultants to say they agree to be a resource and provide their time for the project. And this is also where you might show the success of previous work from a previous award.

This is also the section where you'll have a Dissemination Plan. You'll describe your capacity to disseminate information about your research. Here you're going to identify different audiences and how your audiences will benefit from your research, and then the ways in which you intend to reach those audiences. So those might be different; they might have unique needs. So if your

audience is researchers, you might reach them through peer review publications and conferences, but perhaps you'll have a different strategy for practitioners. Maybe you will attend different kinds of conferences for practitioners. Maybe you'll put out newsletters or hold meetings with policymakers. You'll have different audiences and you'll have different ways of communicating with them.

So your Appendix D should back up your resource section. This is where your letters of agreement that I had just mentioned should go -- from the schools, from districts, from anyone who's helping on the project, any partner on your project showing that they know what they're going to do and they have the time, and they commit to it. And for secondary data analyses, you want to show that you actually have access to the data that you plan to use in your analyses.

The budget and budget narrative should be very clear. You should have an overall one for the project and for each sub award, and you need to be specific about your assumption. So assumptions for travel mean, well, how do you get the budget for travel? How much do you expect the airfare to be? What do you expect the hotel to be? We're talking about very specific assumptions to justify your budget. Budget categories are listed in -- we have the sections here on the slide, the page numbers in each of the RFAs. Make sure that it is aligned with your project narrative -- your budget, your budget narrative, and your project narrative should be all aligned. Your budget should be justified in the narrative and it should support exactly what you propose to do in the application in the research plan section.

This is just a list of appendices, what goes into each one. This is, I think, pretty self-evident. These are dates. As I mentioned before, the letter of intent due date has passed, but you can still contact a program officer with your ideas to make sure they're a good fit. I want to point out -- this is very important -- the deadline is 4:30 p.m. Eastern Time on August 6th and it's a very, very strict deadline. If you're just seconds past 4:30, you will not have your application reviewed. In case there are problems or any technical difficulties, and to have time to receive feedback that it was received, you should really be applying at least a few days in advance of that deadline. This is where you're going to go for applying. Grants.gov is a federal site and this is where you'll find your application package to submit. These are two things you need your request for applications, and we've kind of already gone through what's required in that and the application package on grants.gov.

The peer review process. This is where your application is screened -- I mentioned you have to be compliant and responsive to your RFA. This is where the requirements really matter. If you are responsive and compliant, it will be assigned to a review panel, and then two to three members of that panel will conduct a preliminary review of the application. And those with the most competitive scores, based on those initial reviews, will be reviewed and discussed by the full panel. I've also noted here, just like Christina mentioned earlier, it is the scientific review office that runs these peer reviews. It's completely separate from the program officers. That's the reason that we can talk to you and work with you on your application.

Here you'll just find resources. You can see what the process is like in more detail and you can even see who the peer reviewers were in past competition. And again, read the RFA carefully. Contact your program officer and they can review drafts as long as there is sufficient time. And

that's it. In our small amount of remaining time, we will try to address questions that have not yet been addressed.

Christina Chhin:

Okay. I hope you can hear us. If you can't, please message us if you can't hear us. We're having some technical difficulties, but we're going to try to answer the questions that have been raised so far. I think we've addressed a lot of the questions already, but we'll go through the list and if there are questions that still remain, please let us know. So one question we have here is in regards to Effective Teachers/Effective Teaching topic - do teachers need to be in service teachers getting PD, or can they be undergrad or grad university teachers who are teaching? Typically, the focus is on in service teachers. You may include pre-service teachers if you are focusing on Goal 1, but that's the only Goal under Effective Teachers in which you can include pre-service teachers. .

Amy Sussman:

There's a question about outcomes - are you expected to use standard or existing measures? And the answer is either or both. I think that if you are developing your own measure, you probably do want to use some existing measures as well. You can rely just on existing measures or if you have your own researcher developed measure you've already validated then that would be fine, too.

Okay, where can I access information about specific budget outlines for exploration? We don't have a breakdown in terms of budget in that regard. We do have information at the end of the RFA that talks a little bit about what should be included under each part of the budget, but we don't have, you know, a percentage breakdown. The only specific thing that we include is the 35 percent for development projects -- 35 percent being devoted to the pilot phase for development projects under the NCSER RFA.

Christina Chhin:

I think somebody asked about where there's an example of a cost analysis plan and that's a new requirement and we're still working on public examples.

Amy Sussman:

A question about whether we recommend having a timeline on a graphic of theory of change or is it better to have it separate? I think in general it's better to have your timeline be a separate table. You can include that as part of your project narrative, or I've also seen it included as -- within the appendix. So your timeline should be on a separate graphic from your theory of change.

Christina Chhin:

Somebody asked in an Efficacy study, where would you talk about the fidelity of the intervention. That can be discussed in both the Significance and Research Plan sections.

Amy Sussman:

There's a question about whether power analysis is required for Goal 1. Not so much, but I would also talk to the program officer and it really depends upon your research question. Generally, we don't see power analysis and reviewers don't necessarily focus on it. The goal is to just focus in on exploration, but again, it will vary depending upon what it is you're focusing on in your research question.

Christina Chhin:

There's a question about where to put information about the evidence of promise. You would include that in the Significance section.

There's also another question about defining senior versus junior researcher. There really isn't a strict definition. You should think about the number of publications you have and the number of grants received to help make that determination.

Amy Sussman:

There a question about what is meant by boilerplate language. All that means is that everybody uses it. The university tells you what language to use and everybody puts it in their application. That's what we would like you to avoid using.

Christina Chhin:

And also, on your letters of support, or letters of agreement from schools, make sure they're not all identical. Reviewers tend not to like that. So make sure those letters are unique, and that the schools are actually writing it and addressing it appropriately to the application.

So someone asked if the grants are blind reviewed? No, they are not. They do know who the researchers are. It's part of how they're able to judge the Personnel section.

Amy Sussman:

Okay. And there's a question here about the biosketch. The four pages refer to the biosketch. The plus one page should be a table or information about your level of support. So whether you're on other projects, the distribution of your level of effort on other projects, but that's what the plus one page is referring to.

Christina Chhin:

Someone asked about the time for staff to look at the proposal. That really depends on the particular program officer, but generally speaking you should probably give them at least a month because they're going to have a lot of them to review. So it's really just as their time permits.

Amy Sussman:

There's a question about if there's a guide or expectations for dissemination? We don't have specific expectations for dissemination or examples. What you disseminate will most likely vary depending upon your project and, especially, which goal you're applying under. And so if you have questions, I'd recommend contacting your program officer about that.

I want to answer a question -- it's sort of several questions. Several questions have come up about do you have an example of this or an example of that? I wanted to let you know that I think the best way to know what a good proposal looks like is to see an actually funded proposal. So on our website, there is a section on our website where you can search grants. So you can search for a grant under a particular topic, under a particular goal, and you can find all the grants. And you could in a number of ways see an application, a successful one. We can't just give them out. So then I think the easiest way might be to contact that PI and then another way would be to contact us in a more formal way through what's called the Freedom of Information Act. And that's a process that could take a few weeks, but you'll be able to get an application -- there might be some redacted information that you can't see, but you'll be able to access examples that way.

Christina Chhin:

So we are out of time at this point. We went a few minutes over because we had some technical difficulties. If you still have some remaining questions that were left unanswered please feel free to contact Amy or myself or better yet, your relevant program officer that's listed in the RFA if you have more specific questions about how to write an application to the Education Research or Special Education Research Grants Program. We thank you for participating and we hope you have found this information helpful, thank you.

[end of transcript]