



Request for Applications

Education Research Grants

CFDA Number: 84.305A

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Application Due:	No later than 11:59:59 p.m. Eastern Time August 29, 2019	Grants.gov
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Part I: Overview and General Requirements

A. Introduction

The Institute of Education Sciences (IES) provides scientific evidence to improve education practice and policy and shares that evidence in a way that can be used by educators, parents, policymakers, researchers, and the public. Within IES, the National Center for Education Research (NCER) supports research focused on practices and policies that improve education outcomes and access to education opportunities for all learners from early childhood through adulthood, particularly those at risk of failure.

1. Education Research Grants Program (CFDA 84.305A)

In this Request for Applications (RFA), IES invites applications for research projects that will contribute to its Education Research Grants program (CFDA 84.305A). NCER's goal is to identify what works for whom, in what context, and why in order to provide reliable information about how to improve education outcomes and narrow achievement gaps for U.S. students. The research supported under the Education Research Grants program should not only yield information about the practical benefits and the effects of specific interventions on education outcomes but also contribute to scientific knowledge and theory of teaching, learning, and organizing education systems.

To encourage rigorous education research that is transparent, actionable, and focused on consequential outcomes, all applications to the FY 2020 Education Research Grants program are expected to follow the principles outlined in the IES-wide [Standards for Excellence in Education Research](#) (SEER), as applicable. These principles include pre-registering studies; focusing on outcomes meaningful to student success; documenting intervention implementation to inform use in other settings; identifying core intervention components; analyzing costs; facilitating generalization of study findings; making research findings, methods, and data available to others; and conducting research in a way that informs the future scaling of interventions.

2. RFA Organization

This RFA is organized as follows. [Part I](#) sets out the general requirements for a grant application. Parts [II](#) and [III](#) provide further detail on two of those requirements, research topics and project types, respectively. [Part IV](#) provides information about other narrative content for the application, including required appendices. [Part V](#) provides general information on competition regulations and the review process. [Part VI](#) provides a checklist that you can use to ensure you have included all required application elements to advance to scientific peer review.

3. Eligible Applicants

Institutions that have the ability and capacity to conduct scientific research are eligible to apply. Eligible applicants include, but are not limited to, non-profit and for-profit organizations and public and private agencies and institutions, such as colleges and universities.

Broadening Participation in the Education Sciences: IES is interested in broadening institutional participation in its research grant programs. IES encourages applications from minority-serving institutions (MSIs), alone or in combination with other institutions, that meet the eligibility criteria for this RFA. MSIs include Alaska Native and Native Hawaiian-Serving Institutions, American Indian Tribally Controlled Colleges and Universities (TCU), Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI), Hispanic-Serving Institutions (HSI), Historically Black Colleges and Universities (HBCU), Predominantly Black Institutions (PBI), and Native American-Serving, Nontribal Institutions. MSI applicants are encouraged to review the *IES Funding Opportunities for Minority Serving Institutions* webinar (available at <https://ies.ed.gov/funding/webinars/>).

The Principal Investigator: The institution is responsible for identifying the Principal Investigator (PI) on a grant application and may elect to designate more than one person to serve in this role. The PI is the individual who has the authority and responsibility for the proper conduct of the research, including the appropriate use of federal funds and the submission of required scientific progress reports. If more than one PI is named, the institution identifies these PIs as sharing the authority and responsibility for leading and directing the research project intellectually and logistically. All PIs will be listed on any grant award notification. However, institutions applying for funding must designate a single point of contact for the project. The role of this person is primarily for communication purposes on the scientific and related budgetary aspects of the project and should be listed as the PI. All other PIs should be listed as Co-Principal Investigators.

4. Technical Assistance for Applicants

IES provides technical assistance to applicants that addresses the appropriateness of project ideas for this competition and methodological and other substantive issues concerning research in education settings. IES Program Officers work with applicants through a variety of formats up until the time of Grants.gov submission. If you submit a Letter of Intent (LOI) at <https://iesreview.ed.gov>, a Program Officer will contact you regarding your proposed project. IES also provides Funding Opportunities Webinars (live and on demand at <https://ies.ed.gov/funding/webinars/index.asp>) that include advice on choosing the correct competition, grant writing, and submitting your application.

B. Changes in the FY 2020 Request for Applications

All applicants and staff involved in proposal preparation and submission, whether submitting a new application or submitting a revised application, **should carefully read all relevant parts of this RFA**. Major changes to the Education Research Grants program (CFDA 84.305A) competition in FY 2020 are listed below and described fully in relevant sections of the RFA.

1. IES created a separate application submission guide that provides information about required electronic submission of applications through Grants.gov and an overview of the general IES funding process. Please see the IES Application Submission Guide (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) for important information about submitting your application on-time through Grants.gov.
2. IES has changed its nomenclature for what used to be known as *Research Goals*. They are now being called *Project Types* and they are no longer numbered.
3. **IES will not accept Replication project applications in this competition (CFDA 84.305A) in FY 2020.** This year, IES is initiating a more targeted strategy for supporting replication - a research competition focused on **systematic replications (CFDA 84.305R)**. Under the [Research Grants Focused on Systematic Replication competition](#), IES will support replication studies of IES-identified reading and math interventions that have produced beneficial effects on education outcomes in one or more prior IES-funded impact studies. Proposed replication studies will systematically vary at least one aspect of the prior impact study and also investigate factors that may lead to and sustain successful implementation.
4. IES has added requirements for cost analyses to Measurement projects to provide helpful information to schools, districts, and states on the cost of administering the assessment.
5. The Effective Teachers and Effective Teaching topic has a new name: *Effective Instruction*.
6. For FY 2020, IES will not be competing Education Leadership as a separate topic. Applicants interested in submitting research on education leaders should submit their applications to the [Improving Education Systems topic](#) or to other topics as appropriate. If you have any questions about the best fit for your application, please submit an LOI and/or contact Dr. Katina Stapleton (Katina.Stapleton@ed.gov) for feedback.

7. IES seeks to increase its investment in postsecondary and adult education research by supporting such research across all NCER topics, as well as in [the dedicated Postsecondary and Adult Education topic](#). If you are not sure which of the 11 topics offered in FY 2020 is most appropriate for your proposed postsecondary or adult education project, contact the relevant Program Officers to discuss the best topic fit for your application.
8. [Appendix A: Dissemination Plan](#) will now be considered by the scientific peer reviewers as part of their review of the Personnel section, in addition to the Significance and Resources sections of your Project Narrative. Reviewers will consider team members' qualifications for disseminating research findings to a range of audiences as part of their review of the Personnel section of the Project Narrative.

C. Getting Started

In order to submit a compliant, responsive, and timely application, you will need to review two documents:

1. This RFA to learn how to prepare an application that is compliant and responsive to the requirements; and
2. The IES Application Submission Guide¹ (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) for important information about submission procedures and IES-specific guidance and recommendations to help you ensure your application is complete and received without errors on time through Grants.gov.

We strongly recommend that both the Principal Investigator (PI) and the Authorized Organization Representative (AOR) read both documents, whether submitting a new or revised application.

Only compliant and responsive applications received before the date and time deadline are peer reviewed for scientific merit. The PI and the AOR should work together to ensure that the application meets these criteria.

- **On-Time Submission** - see the separate IES Application Submission Guide at (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>)
 - Received and validated by Grants.gov no later than 11:59:59 p.m. Eastern Time on August 29, 2019.
- **Compliance**
 - Includes the **required Project Narrative** (see [Part III](#))
 - Includes all **required Appendices** (see [Part IV](#)).
 - [Appendix A: Dissemination Plan](#) (All applications)
 - [Appendix B: Response to Reviewers](#) (Resubmissions only)
 - [Appendix F: Data Management Plan](#) (Initial Efficacy and Follow-Up applications only)
- **Responsiveness**
 - Meets **General Requirements** for all applications (see [Part I](#)).
 - [Education Outcomes](#)
 - [Education Settings](#)

¹ Please note that the [IES Application Submission Guide](#) includes application submission information that used to be included in the Request for Applications but has now been pulled out as a separate document.

- [Topic](#) (choose one)
 - [IES Project Type](#) (choose one)
 - [Dissemination Plan \(as required in Appendix A\)](#)
- Meets **Project Narrative Requirements** for the selected *IES Project Type* (see [Part III](#)).

D. General Requirements

Applications under the Education Research Grants program **must meet the requirements set out in this section** in order to be sent forward for scientific peer review.

1. Education Outcomes

All research supported under the Education Research Grants program **must** (1) focus on learners from prekindergarten through adulthood and (2) measure academic outcomes of those learners.

IES **requires** the measurement of additional education outcomes under two topics: [Career and Technical Education](#) and [Social and Behavioral Context for Academic Learning](#).

Academic Outcomes

IES supports research on a diverse set of academic outcomes across development that fall under two categories. The first category includes academic outcomes that reflect **learning and achievement** in academic content areas. The second category includes academic outcomes that reflect learners' **successful progression** through education systems.

IES is interested in the following academic outcomes:

- For **prekindergarten**, school readiness (pre-reading, pre-writing, and early-STEM [science, technology, engineering, and/or mathematics] skills), English language proficiency, and social and behavioral competencies (including self-regulation and executive function) that prepare young children for school.
- For **kindergarten through Grade 12**, learning, achievement, and higher order thinking in the academic content areas of reading, writing, and STEM; English language proficiency; and progression through education systems as indicated by course and grade completion, retention, high school graduation, and dropout.
- For **postsecondary education**, access to, persistence in, progress through, and completion of postsecondary education, which includes developmental education courses and bridge programs as well as programs that lead to occupational certificates, associate's, or bachelor's degrees; and learning, achievement, and higher order thinking in postsecondary courses.
- For **adult education**,² achievement in reading, writing, English language proficiency, and mathematics, as well as access to, persistence in, progress through, and completion of adult education courses and programs.

Social and Behavioral Competencies

IES supports research on **social and behavioral competencies**, defined as social skills, attitudes, and behaviors that are important to learners' success in school and beyond. You **must** propose to measure social and behavioral competencies, in addition to the required academic outcomes, if you are applying under the [Social and Behavioral Context for Academic Learning](#) topic.

² Learners at least 16 years old and outside the K-12 system who are preparing for, transitioning into, or currently enrolled in adult education, as defined in Title II of the 2015 Workforce Innovation and Opportunities Act (WIAO), such as Adult Basic Education, adult English literacy programs, and preparation programs for high school equivalency exams.

Employment and Earnings Outcomes

IES supports research on **employment and earnings outcomes**, such as hours of employment, job stability, and wages and benefits. In general, such outcomes are most pertinent to studies proposed under the [Career and Technical Education \(CTE\)](#) and [Postsecondary and Adult Education](#) topics but can be included in other research topics as appropriate.

2. Education Settings

Proposed research must be relevant to education in the United States and **must** address factors under the control of U.S. education systems.

Education in the U.S. is delivered in a wide range of formal settings, such as center-based prekindergarten, public and private K-12 schools, community colleges, and 4-year colleges and universities. In addition, there are also formal programs under the control of education agencies that take place out of school including after-school, distance learning, online programs, and adult literacy programs run through community-based organizations. IES does not support research that occurs in informal contexts outside of education systems and outside the control of education agencies. Contact an IES Program Officer if you have questions about the education setting you have identified for your proposed research.

IES permits a limited amount of research in laboratories. **Applications with 100 percent of the research taking place in laboratory settings will not be sent forward for scientific peer review.**

3. Topics

NCER uses a topic structure to encourage focused programs of research. Your application **must** be directed to 1 of the 11 topics accepting applications in FY 2020 (see [Part II Topics](#)). Research proposed under each topic may ask questions about the academic outcomes of learners at any developmental or school level from prekindergarten through postsecondary and adult education.

- [Career and Technical Education](#)
- [Cognition and Student Learning](#)
- [Early Learning Programs and Policies](#)
- [Education Technology](#)
- [Effective Instruction](#)
- [English Learners](#)
- [Improving Education Systems](#)
- [Postsecondary and Adult Education](#)
- [Reading and Writing](#)
- [Science, Technology, Engineering, and Mathematics \(STEM\) Education](#)
- [Social and Behavioral Context for Academic Learning](#)

See the topic descriptions for more about the purpose and IES-identified research needs for each. Contact the Program Officers listed by topic for advice on which one provides the best fit for your proposed research.

4. IES Project Types

IES supports research, development, evaluation, and measurement activities that build a body of knowledge in the education sciences, along with the practical tools necessary to lead to meaningful change in education practice. For FY 2020 your application **must** be directed to one of the four project types listed below.

- [Exploration](#)
- [Development and Innovation](#)
- [Initial Efficacy and Follow-Up](#)
- [Measurement](#)

See the [IES project type descriptions in Part III](#) for more information about each type's unique purpose and requirements that you must address in your application. Program Officers can offer advice on which project type provides the right fit for your proposed project. In general, you should select the project type that most closely aligns with the purpose of the research you propose, regardless of the specific methodology you plan to use. IES encourages the use of mixed-methods research, the complementary combining of quantitative and qualitative methods to inform the research process along the continuum from exploration through evaluation.

Note: In FY 2020, IES will not be funding Replication projects under this competition. A separate competition will be held for systematic replication studies focused on specific interventions https://ies.ed.gov/funding/ncer_rfas/systematic_replications.asp.

5. Dissemination Plan

IES is committed to making the results of IES-funded research available to a wide range of audiences (see [IES Policy Regarding Public Access to Research](#)). To ensure that findings from the Education Research Grants program are available to all interested audiences, IES **requires all applicants** to present a plan to disseminate project findings in [Appendix A: Dissemination Plan](#) of the application. The scientific peer reviewers will consider the quality of the Dissemination Plan presented in Appendix A as part of their review of the Significance, Personnel, and Resources section of your application (see [Part III](#)). **Applications that do not contain a Dissemination Plan in Appendix A will not be accepted for review.**

E. Award Limits

Applications to the Education Research Grants program **must** conform to the following limits on award duration and cost by Project Type.

IES Project Type	Maximum Duration	Maximum Cost
Exploration	Secondary Data Analysis only: 2 years	\$600,000
	Primary Data Collection and Analysis: 4 years	\$1,400,000
Development and Innovation	4 years	\$1,400,000
Initial Efficacy and Follow-Up	Initial Efficacy, Primary Data Collection: 5 years	\$3,300,000
	Initial Efficacy, Secondary Data Analysis: 3 years	\$700,000
	Follow-Up: 3 years	\$1,100,000
Measurement	4 years	\$1,400,000

Part II: Topics

A. Applying to a Topic

For the FY 2020 Education Research Grants program, you **must** submit to 1 of the 11 topics described in this section. You must identify your chosen topic on the Application for Federal Assistance SF-424 form (Item 4b) of the Application Package (see the [IES Application Submission Guide](#)), or IES may reject your application as nonresponsive to the requirements of this RFA.

Across all topics, in order to be sent forward for scientific peer review

- You must meet the general requirements outlined in [Part I.D: General Requirements](#); and
- You must meet the relevant project type requirements listed under [Part III: Project Type Requirements and Recommendations](#).

For each topic:

IES supports field-generated research that addresses a range of issues within each topic. Each topic name is linked to the IES topic webpage, where you can find more information and view the abstracts of previously funded projects.

- **See the Purpose section** of each topic for descriptions of research appropriate for a given topic. You should consider the key learner outcomes and age range(s) of target learners when choosing a topic.
- **See the Needed Research section** to find examples of IES-identified research needs in the field. IES encourages such applications because, if found to have scientific merit by the independent scientific peer reviewers, they have the potential to lead to important advances in the field. Peer reviewers may consider the IES-identified research needs in their evaluation of the Significance of the proposed project. IES also welcomes applications that address other research needs under each topic.

All applications to the Education Research Grants Program are typically reviewed by one of seven [standing peer review panels](#).

- Basic Processes
- Early Intervention and Early Childhood Education
- Education Systems and Broad Reform
- Science, Technology, Engineering, and Mathematics (STEM)
- Reading, Writing, and Language Development
- Social and Behavioral
- Special Education

Some topics have an obvious one-to-one alignment with the standing panels while others do not. Applications are assigned to panel according to the match between the overall expertise of reviewers on each panel and the content and methodological approach proposed in each application. See the [Procedures for Peer Review of Grant Applications](#) and [Part V.C.4 Scientific Peer Review Process](#) for more information.

If you propose to conduct research focused on children or youth with or at risk for disabilities from birth through Grade 12,³ you **must** apply to the separate grant programs run by the National Center for Special Education Research (NCSER; (<https://ies.ed.gov/ncser>)). For research focused on learners with or at risk for disabilities in postsecondary settings, you may apply to any NCER topic or several NCER

³ Grade 12 includes individuals who are 18 years or older and are still receiving services under IDEA.

topics. Please contact a program officer to discuss the funding opportunity and topic for your post-secondary research idea.

IES strongly encourages you to contact the Program Officers listed under each topic if you have questions regarding the appropriateness of a project for submission under a specific topic.

1. Career and Technical Education

Program Officer: Dr. Corinne Alfeld (202-245-8203; Corinne.Alfeld@ed.gov)

a) Purpose

[Career and Technical Education](#) (CTE) supports research to understand the implementation and effects of CTE programs and policies on education and career outcomes. ***For this reason, measures of CTE attainment must be included along with the required measures of academic outcomes.*** Research on CTE is needed to answer important questions about the promise of CTE for increasing the relevance of education for future careers and lifelong learning. Research under this topic addresses CTE policies, programs, curricula, and instructional practices; learners' exposure to and experience with CTE opportunities; and the effects of participation in different types of programs on a variety of learner outcomes.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- Tests of the outcomes of participation in CTE. For example, what is the relationship between career-focused school, program, or curricular features and learners' academic and employment outcomes?
- Evaluations of existing CTE programs and policies that describe subgroup impacts and collect information about implementation to help explain variation in outcomes.
- Reliable and valid measures of CTE participation as well as technical, occupational, and career readiness skills.
- Research on CTE teachers and faculty, including studies that examine the qualifications, recruitment, professional development, and retention of those instructors.

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

2. Cognition and Student Learning

Program Officer: Dr. Erin Higgins (202-706-8509; Erin.Higgins@ed.gov)

a) Purpose

[Cognition and Student Learning](#) supports research that bridges the science of how people learn with education practice to improve academic outcomes. Research on how people learn is valuable for developing and testing innovations in study strategies, instructional approaches, curricula, education technologies, and assessments that address educators' most pressing needs. This research is also useful for identifying the cognitive processes that underlie acquisition of English language proficiency; knowledge and skills in reading, writing, and STEM; and successful progression through education systems.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- Translational research that determines how to develop classroom implementation procedures for cognitive science principles that laboratory studies suggest are beneficial for learning.
- Exploratory research to guide the development and testing of education technology products that can personalize instruction. Through collaboration with education technology developers, cognitive scientists can facilitate the development of personalized learning products that take advantage of what is known about how people learn. Such collaborations also provide opportunities to explore new research questions in the context of education technology.
- Examination of groups of learning principles to identify optimal ways to implement them in classrooms. What are the best ways to combine principles in order to achieve the largest impact on learners?
- Measurement tools that can validly and reliably capture cognitive skills that underlie reading, writing, and STEM achievement.

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

3. Early Learning Programs and Policies

Program Officer: Dr. Caroline Ebanks (202-245-8320; Caroline.Ebanks@ed.gov)

a) Purpose

[Early Learning Programs and Policies](#) supports research on school readiness for 3- to 5-year-olds in center-based education settings like preschools, Head Start programs, child care centers, nursery schools, and public prekindergarten. Early childhood experiences have immediate and lasting consequences for children's development, early learning, and school achievement. Children from at-risk backgrounds often begin school behind their peers and rarely catch up. Early learning programs and policies can play a key role in reducing the sociodemographic academic achievement gap that is present when children from low-income families begin formal schooling. Through this topic, IES supports research on children's immediate and long-term outcomes from center-based early learning programs and policies.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- Impact studies of early childhood policies on children's school readiness skills and later school achievement. What are the effects of policies governing the use of subsidies, educator training, program licensing, quality rating and improvement systems, and PreK to K transition practices on school readiness and long-term achievement? What are the effects of variations in PreK programming such as 1- versus 2-year or universal versus targeted programs on these student outcomes?
- Studies to understand how mentoring and coaching programs improve instructional practices, teacher-child relationships, and children's social readiness skills.
- Development of valid, reliable, and affordable measures of PreK program quality and classroom process quality.

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

4. Education Technology

Program Officer: Dr. Edward Metz (202-245-7550; Edward.Metz@ed.gov)

a) Purpose

[Education Technology](#) supports research on innovative and emerging forms of technologies to improve academic performance. Education technology products are pervasive in everyday life, yet there are many unanswered questions about the role such products play in education and learning. *Research under this topic is focused on the innovative use of technology.* Other topics may be a better fit if the technology is already well-established or if the focus is on learning and achievement in academic content areas or instructional practices that do not require innovative uses of technology.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- How do teachers and college faculty use new forms of technology in their classrooms and how are these uses linked to academic and employment outcomes?
- Since 2002, IES has invested over \$90 million in education technology products through its [Small Business Innovation Research \(SBIR\) program](#). Initial efficacy studies of these products, particularly as they are adopted for routine use in classrooms, are critical to understanding their value for learners, schools, and districts.
- What are the elements and mechanics of game-based learning, and the conditions under which games can promote learning?
- What is the efficacy of embedded assessments in learning games? Designed to automatically measure student performance during gameplay, provide scaffolding to enhance individualized learning, and replace traditional forms of paper-based tests, little is known about their efficacy.
- Dynamic forms of technology-delivered assessments could be used in schools to provide adaptive, personalized, and real-time feedback to support learning and measure knowledge and understanding of complex concepts with reduced time and greater accuracy.
- How can technology be used to expand educational opportunities in under-served areas such as low-income or rural communities or under-resourced schools, colleges, universities, and adult education programs?
- Can technology be used to provide better and quicker feedback to school administrators, teachers, faculty, and students on performance and areas for improvement?

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

5. Effective Instruction

Program Officer: Dr. Wai-Ying Chow (202-245-8198; Wai-Ying.Chow@ed.gov)

a) Purpose

[Effective Instruction](#) supports research to understand the features of classroom instruction that promote academic outcomes. The consensus is that variation in instruction matters for academic outcomes, over and above home and student variables such as socioeconomic status or previous academic achievement. Educator accountability for academic success and failure is increasingly emphasized. Rigorous research focused on building our understanding of effective educators and effective instruction is necessary to inform educator training and other important aspects of teaching such as recruitment and selection processes, support, and methods of evaluation.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- What specific knowledge and skills do instructors need to promote learning?
- What are the basic cognitive processes of professional learning and the developmental sequence of skills necessary for teaching? Cognitive science research elaborates distinct differences in the ways that experts and novices organize and use information. However, that knowledge has not been systematically studied in relation to the professional learning of educators.
- What skills do educators need in order to provide effective instruction to learners from various backgrounds? This is sometimes referred to as cultural and linguistic competence, cultural proficiency, or cultural responsiveness.
- Evaluations of various approaches to teacher recruitment, retention, certification, assessment, and compensation implemented by states and school districts and the relation between these approaches and learner outcomes are needed.
- Which aspects of pre-service training are most important and how do we best measure these aspects? Research on aspects of pre-service training such as candidate selection criteria, specific coursework, and supervised field experiences and their relation to later learner outcomes is needed.

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

6. English Learners

Program Officer: Dr. Katina Stapleton (202-245-6566; Katina.Stapleton@ed.gov)

a) Purpose

[English Learners](#) supports research to improve academic outcomes and reduce the academic achievement gap for English learners (ELs). IES uses the term *English learner* under a broad definition encompassing all individuals whose home language is not English and whose English language proficiency hinders their ability to meet learning and achievement expectations for their level of schooling. The EL population is diverse in terms of home language and proficiency, English language proficiency, age of entry in U.S. schools, and school experiences like language of instruction and policies guiding EL identification and reclassification. ELs participate in US education at all levels, including about 5 million students in the K-12 system and over 1 million in postsecondary institutions.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- What supports do ELs and their teachers need in secondary settings? For many, by the time they reach secondary school their EL status may cause them to be shunted into watered-down, “EL-only” content courses, or excluded from the core curriculum altogether.
- What are the best ways to support ELs in postsecondary and adult education settings? ELs enrolled in these settings have diverse educational experiences and linguistic abilities and bring unique motivations for learning English. The field would benefit from systematic examination of the ways in which these systems support ELs and the outcomes of those approaches.
- Better classroom-based measures of ELs’ content knowledge. Instructors who design their own measures may not have training in how to minimize language barriers for ELs, and few if any off-the-shelf curriculum-based measures are normed for ELs, nor do they include accommodations. More, and better, tools and practices to measure ELs’ content knowledge for instructional decisionmaking throughout the school year would represent an important expansion and contribution.
- ELs and educators need materials to help them leverage native language resources for non-Spanish speakers. Roughly a quarter of the EL population speaks non-Spanish languages and are less likely to have access to native language supports in the classroom.

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

7. Improving Education Systems

Program Officer: Dr. Corinne Alfeld (202-245-8203; Corinne.Alfeld@ed.gov)

a) Purpose

[Improving Education Systems](#) supports research on education systems and policies for schools and postsecondary institutions to understand which specific policies and systems benefit learners, the conditions that support systemic improvements, the factors that enhance or impede systems-level change, and variations in treatment effects across contexts and subgroups. Education systems are complex and involve many actors. Research on *how* education systems support academic achievement is necessary for successful implementation of beneficial education policies and programs.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- The Every Student Succeeds Act (ESSA 2015) provides more flexibility in decisionmaking to states. How are the new policies, programs, and practices implemented by states and their districts in response to ESSA linked to student outcomes? Important questions need to be answered about the implications of ESSA for school finance, low-performing schools, curricula and instructional standards, state assessment systems, and leadership and governance.
- Congress has recently passed several pieces of legislation that have implications for K-12, postsecondary, and adult education, such as the Workforce Innovation and Opportunity Act (WIOA) and the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) and is considering reauthorization of the Higher Education Opportunity Act (HEOA). The field needs information about how states, education systems, and education programs are interpreting or implementing these laws, how they are preparing for possible changes, and how these system-level adaptations affect learner outcomes.
- What system-level approaches reduce the achievement and attainment gaps that exist for specific subgroups of students at high risk for education failure? These include students who are minorities, economically disadvantaged, English learners, and highly mobile students such as migrants, those in foster care, and children of military families.
- Do system-level interventions like “wraparound” services, “opportunity zones,” advanced courses, course recovery, district-wide or regional communities of practice, increased instructional time, and scheduling improve academic outcomes?
- State and local education officials make daily decisions about how to hire, place, train, and evaluate school leaders. Are leadership training interventions effective? Are measures to assess leadership skills and behaviors valid? What leadership practices are effective at improving learner outcomes?
- Many college and university systems are seeking to address the incentive systems of faculty to increase attention to teaching as well as research. Is there any evidence that these new incentive systems affect the progression, retention or completion of students?

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

8. Postsecondary and Adult Education

Program Officers: Dr. James Benson (202-245-8333; James.Benson@ed.gov)

Dr. Meredith Larson (202-245-7037; Meredith.Larson@ed.gov)

a) Purpose

[Postsecondary and Adult Education](#) supports research to improve access to, persistence in, progress through, and completion of postsecondary and adult education programs, including high-school equivalency programs, sub-baccalaureate programs, and associate's and bachelor's degree programs. IES is interested in understanding how to improve instruction and achievement in postsecondary and adult education settings and how to ensure learners develop the skills and abilities required for continued success in education and beyond. IES is also interested in research to improve outcomes for learners attending open- and broad-access institutions and on eliminating attainment gaps between low-income and historically disadvantaged learners and their peers.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- Developing and testing initiatives that help learners complete marketable degrees and credentials and transition into rewarding occupations.
- Understanding how debt and debt aversion affect decisionmaking and whether their adverse effects can be alleviated through strategies such as promise scholarship programs, connecting learners with social services, or emergency financial aid.
- Supporting postsecondary and adult education teaching staff to use evidence-based instructional practices through improved professional development.
- Developing and testing curriculum reform strategies such as using co-requisite remediation instead of developmental course sequences, incorporating competency-based approaches to assessment, and creating clear pathways to degree completion.
- Assessing efforts by systems, institutions, and programs to facilitate progress through postsecondary education, as well as initiatives that support learners' ability to navigate into and through their education programs.
- Improving outcomes in English language, numeracy, or writing for adults with significant skill barriers, such as those who may participate in WIOA Title II programs including adult basic and secondary education, family literacy, and civics education.

Please contact the Program Officers for this topic to discuss your choice of topic and project type and to address other questions you may have.

9. Reading and Writing

Program Officer: Dr. Allen Ruby (202-245-4148; Allen.Ruby@ed.gov)

a) Purpose

[Reading and Writing](#) supports research on the improvement of reading and writing skills, both of which are crucial to success in school and beyond. Recognition of the importance of reading has led to extensive theory and research on this topic for over 50 years. While some progress has been made, many students in the United States are still not proficient readers, and this difficulty can persist well into adulthood. [Recent NAEP assessments](#) show only about one-third of 4th and 8th graders are proficient at reading, and the most recent data from the [Program for the International Assessment of Adult Competencies \(PIAAC\)](#) indicate that nearly 20 percent of U.S. adults perform at the lowest levels of literacy. Writing is vastly understudied in comparison to reading. Despite this important skill for both communication and learning, little is known about how writing develops, how to improve writing achievement, or how writing supports learning and achievement more generally.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- We know very little about effective writing instruction and achievement throughout the various levels of schooling. What interventions increase writing proficiency and quality? How can writing quality be measured?
- Learners spend a lot of time using the internet and digital devices, but they are not necessarily skilled at reading or writing with these tools. How can technology be leveraged to improve reading and writing skills? Can technology be leveraged for more effective reading and writing instruction? How is technology changing what we need to know in order to read and write effectively?
- Supporting reading and writing skills in content area classrooms becomes increasingly important as learners progress through school and into college and careers. Content area teachers may assume their students already have the skills to read, understand, and write increasingly complex texts. These teachers may also feel that instruction in these skills is beyond the scope of their courses. How is instruction in content area classrooms associated with improved reading and writing achievement?

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

10. Science, Technology, Engineering, and Mathematics (STEM) Education

Program Officer: Dr. Christina Chhin (202-245-7736; Christina.Chhin@ed.gov)

a) Purpose

[STEM Education](#) supports research on the improvement of STEM knowledge and skills. Over the past 25 years, STEM education has evolved from a clustering of four overlapping disciplines (science, technology, engineering, and mathematics) toward an integrated knowledge base and set of critical skills necessary for the 21st century workplace. Current levels of STEM achievement at the elementary and secondary levels and into postsecondary, however, suggest that the United States is not adequately preparing all learners with the levels of STEM knowledge and skills necessary for success in the workplace.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- What practices, programs, and policies are promising or effective for integrated STEM teaching and learning across multiple disciplines? There are practical challenges to integrating STEM disciplines in teaching and learning, including the fact that many educators are not trained or prepared to teach across STEM disciplines, and the majority of assessments measure learning in only a single discipline.
- What programs, policies, and practices increase opportunities for learners who are usually underrepresented in STEM to persist and achieve?
- What can be done to prevent the attrition of learners in the postsecondary STEM pipeline?
- What curricula and instructional practices in computer science are effective and inclusive of all learners? What measures are valid and reliable to assess computational thinking? What computer science programs and practices benefit learning?
- What are the best practices for helping those who are struggling with basic numeracy?

Please contact the Program Officer for this topic to discuss your choice of topic and goal and to address other questions you may have.

11. Social and Behavioral Context for Academic Learning

Program Officer: Dr. Emily Doolittle (202-245-7833; Emily.Doolittle@ed.gov)

a) Purpose

[Social and Behavioral Context for Academic Learning](#) supports research on social and behavioral competencies that support academic achievement and progress through the education system. ***For this reason, measures of social and behavioral competencies must be included along with the required measures of academic outcomes.*** Several decades of research suggest that social and behavioral competencies like the ability to self-regulate or cooperate with peers may be just as important as content knowledge and academic skills for success in school and work, yet the evidence base for school-based social behavioral interventions is equivocal.

b) Needed Research

Research needs highlighted below are examples of research that have the potential to lead to important advances in the field.

- New theories of change are needed to advance our understanding of social behavioral competencies and how they relate to success in school and work. Social skills and behavior are understood to be a means to improve academic achievement, but what if the direction of effects went the other way? Some have advocated for a full integration of social and emotional learning (SEL) into the more traditional academic focus of schools. What might this look like?
- Valid measures of social and behavioral competencies are needed for applied purposes. Existing social behavioral measures are more appropriate for research purposes than for program evaluation, accountability, or tracking student progress now called for by recent changes in national (Every Student Succeeds Act, 2015) and state policies.
- Developing and testing new approaches to discipline that provide access to teaching and learning for all students regardless of race and ethnicity, gender, or disability status. A [GAO analysis of the 2013-14 U.S. Department of Education Civil Rights Data Collection](#) found that Black students, boys, and students with disabilities continue to be suspended and expelled from public schools disproportionately compared to other student groups.

Please contact the Program Officer for this topic to discuss your choice of topic and project type and to address other questions you may have.

Part III: Project Type Requirements and Recommendations

A. Applying Under a Project Type

For the FY 2020 Education Research Grants program, you **must** submit under one of four⁴ project types: Exploration, Development and Innovation, Initial Efficacy and Follow-Up, and Measurement. You must identify your chosen project type on the Application for Federal Assistance SF 424 (R&R) form (Item 4b) of the Application Package (see the [IES Application Submission Guide](#)), or IES may reject your application as nonresponsive to the requirements of this RFA.

For each project type:

- **See the Purpose section** for the types of research appropriate for a given project type. Your research questions should match the purpose of the project type you choose. IES encourages the use of mixed methods research, defined as the integration of qualitative and quantitative data, for all project types.
- **See the Requirements section** for the specific content that you must address in the Project Narrative in order to be sent forward for scientific peer review.
- **See the Award Limits section** for duration and cost maximums for each project type.
- **See the Recommendations for Strong Applications section** for recommendations to improve the quality of your application. The scientific peer reviewers are asked to consider these recommendations in their evaluation of the quality of your application. IES strongly encourages you to incorporate the recommendations into your Project Narrative and relevant appendices. Where appropriate, recommendations are aligned with the SEER Principles (<https://ies.ed.gov/seer.asp>) to ensure that research is transparent, actionable, and focused on meaningful outcomes that have the potential to dramatically improve education.

⁴ IES is not accepting applications under the project type Replication: Efficacy and Effectiveness in FY 2020 (see [the Systematic Replication RFA, 84.305R](#)).

B. Exploration

1. Purpose

Exploration supports projects that identify relationships between individual-, educator-, school-, and policy-level characteristics and education outcomes, and factors outside of education settings that may influence or guide those relationships. Findings from Exploration projects point out potentially fruitful areas for further attention from researchers, policymakers, and practitioners rather than providing strong evidence for adopting specific interventions or assessment tools.

Under Exploration, IES does not support work to develop an intervention or to test the causal impact of an intervention. If you plan to develop or evaluate an intervention or assessment, you must apply under one of the other appropriate project types or your application will be deemed nonresponsive and will not be forwarded for scientific peer review. You may propose to conduct experimental studies under Exploration if the purpose is to examine relationships between factors and education outcomes, rather than to test causal impact of an intervention.

2. Requirements

Project Narrative

The Project Narrative (recommended length: no more than 25 pages) for an Exploration project application **must** include four sections – Significance, Research Plan, Personnel, and Resources.

- i. **Significance** – The purpose of this section is to explain why it is important to study the factors and their potential association with learner outcomes and why results will be important to disseminate to researchers, policymakers, and practitioners.
 - You **must** describe
 - the factors you will study.
- ii. **Research Plan** – The purpose of this section is to describe your research design and methods and demonstrate how they will allow you to address your research questions. A variety of approaches are appropriate under Exploration including (1) primary data collection and analyses, (2) secondary data analyses, (3) meta-analyses that go beyond a simple identification of the mean effect of interventions, or (4) some combination of these three approaches.
 - You **must describe** the
 - characteristics of your sample;
 - research design and methods; and
 - data analysis plan.
- iii. **Personnel** – The purpose of this section is to demonstrate that your team possesses the appropriate training and experience for the research and dissemination you propose and will commit enough time to the project.
 - You **must describe** your
 - project team.
- iv. **Resources** – The purpose of this section is to demonstrate how you have the institutional capacity and access to resources needed to execute the project and disseminate findings.
 - You **must describe** your
 - resources to conduct the project.

3. Award Limits

Awards made under Exploration **must** conform to the following limits on duration and cost. These limits vary depending on whether the project involves primary data collection and analysis or secondary data analysis only. For the purposes of this RFA, primary data collection includes the collection and coding of quantitative or qualitative data as well as the coding of already collected, unstructured data such as video files, audio files, transcripts, and observations. Secondary data analysis includes analyzing structured data files that do not require coding prior to analysis.

Duration Maximums:

- The maximum duration of an Exploration award that solely involves secondary data analysis or meta-analysis is **2 years**.
- The maximum duration of an Exploration award that involves primary data collection is **4 years**.

Cost Maximums:

- The maximum cost for an Exploration award solely involving secondary data analysis or meta-analysis is **\$600,000** (total cost = direct + indirect costs).
- The maximum cost for an Exploration award involving primary data collection is **\$1,400,000** (total cost = direct + indirect costs).

4. Recommendations for Strong Applications

These recommendations are intended to improve the quality of your application, and the peer reviewers are asked to consider these recommendations in their evaluation of your application.

Significance

- Describe how the factors you propose to study are under the control of education agencies and the relationships you expect them to have with learner outcomes. Identify aspects of the education setting and characteristics of learners or educators that may change the nature of the relationship by either mediating or moderating the relationship between the factors of interest and learner outcomes.
- Discuss the significance of your proposed work. How will the results affect policy or practice? How will the results inform future education research?
- In [Appendix A](#), discuss how you will make the results of your proposed research available to a wide range of audiences in a manner that reflects the purpose of Exploration.

Research Plan

- Specify your research questions and describe how they are motivated by the information provided in your significance section.
- Provide a timeline for each step in your project including sample recruitment, data collection, data analysis, and dissemination. Timeline tables or figures should be placed in either the Project Narrative or [Appendix C: Supplemental Charts, Tables, and Figures](#), but discussion of the timeline should be included only in the Project Narrative.

Sample

- Describe your sample, how it represents the population you intend to study, and if applicable, strategies to reduce attrition.
- For all quantitative inferential analyses, demonstrate that the sample provides enough power to address your research questions.

Research Design and Methods

- Describe your research design with enough detail to demonstrate it will address your research questions.
- Identify all measures and discuss their validity and reliability for the intended purpose and population.
- For primary data collection projects:
 - Describe procedures for data collection.
 - Describe any processes for transforming or recoding raw data into another format or structure.
 - Describe any qualitative data collection and coding protocols including the procedures for monitoring and maintaining inter-rater reliability. Describe the mechanism for quantifying the data if needed.
- For meta-analysis projects:
 - Describe and justify the criteria for including or excluding studies.
 - Describe the search procedures for ensuring that a high proportion of eligible studies, both published and unpublished, will be located and retrieved.
 - Describe the coding scheme and procedures that will be used to extract data from the respective studies and the procedures for ensuring the reliability of the coding.
 - Demonstrate that sufficient numbers of studies are available to support the meta-analysis and that the relevant information is reported frequently enough and in a form that allows an adequate dataset to be constructed.
- For secondary data analysis projects:
 - Note the response rate or amount of missing data for each measure.
 - Describe the process for transforming the data to create any of the key variables, if applicable.

Data Analysis Plan

- Describe and justify the statistical models to be used, including how they address the multilevel nature of education data and how well they control for selection bias.
- Discuss analyses to explore alternative hypotheses.
- Discuss how you will address exclusion from testing and missing data. Describe sensitivity tests to assess the influence of key procedural or analytic decisions on the results.
- Provide separate descriptions for all analyses of factors that mediate or moderate the relationships of interest and provide information about the statistical power for each analysis.
- Provide enough detail for reviewers to be able to judge the feasibility of any plans to link multiple datasets.
- For meta-analysis projects, define the effect-size statistics to be used, along with the associated weighting function, procedures for handling outliers, procedures for handling effect size heterogeneity, and any adjustments to be applied, such as reliability corrections.

Personnel

- Identify and describe expertise of all key personnel, including the Principal Investigator, Co-Principal Investigators, and Co-Investigators on the project team regardless of whether they are located at the primary applicant institution or a subaward institution.
- Describe additional personnel at the primary applicant institution and any subaward institutions along with any consultants.
- Describe team members' qualifications to carry out the proposed work.
- Provide a plan for how key personnel will maintain their objectivity in conducting the proposed research and dissemination activities.

- Identify the management structure and procedures that will be used to keep the project on track and ensure the quality of its work, including
 - roles and responsibilities of personnel on the project; and
 - percent of time per calendar year (academic months plus summer months) personnel will devote to the project.
- If key personnel have previously received one or more IES grants, briefly discuss the outcomes of that research, including products developed or tested and how the project's findings and products were disseminated, in order to demonstrate your team's ability to produce and disseminate project outcomes consistent with the IES mission.

Resources

- Describe your institution's capacity to manage a grant of this size.
- Describe your access to resources available at the primary institution and any subaward institutions.
- Describe your plan for acquiring resources that are not currently accessible, will require significant expenditures, and are necessary for the successful completion of the project, such as equipment, test materials, curriculum, or training materials.
- Describe your access to the settings in which the research will take place. Include Letters of Agreement in [Appendix E](#) documenting their participation and cooperation. Convincing letters convey that the organizations understand what their participation in the study will involve, such as annual surveys, assessments, and/or classroom observations.
 - Include information about incentives for participation, if applicable.
- Describe your access to any necessary datasets. Include Letters of Agreement, data licenses, or existing Memoranda of Understanding in Appendix E to document that you will be able to access those data for your proposed use.
- Describe your resources to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination Plan](#).
 - Describe any offices or organizations expected to take part in your dissemination plans.
 - Describe resources to support dissemination through electronic means such as a website, social media account(s), electronic newsletter, listserv, or other electronic dissemination approach.

C. Development and Innovation

1. Purpose

Development and Innovation supports the development and pilot testing of new or modified education interventions that are intended to produce beneficial impacts on learner outcomes. A Development and Innovation project will result in a fully developed intervention, evidence of the intervention's theory of change, and data that speak to the intervention's feasibility, fidelity of implementation, costs, and promise for improving learner outcomes.

If you propose only minor development activities and are mainly focused on testing the intervention's impact, you must apply under Initial Efficacy and Follow-Up or your application will be deemed nonresponsive and will not be forwarded for scientific peer review.

2. Requirements

Project Narrative

The Project Narrative (recommended length: no more than 25 pages) for a Development and Innovation project application **must** include four sections – Significance, Research Plan, Personnel, and Resources.

- i. **Significance** – The purpose of this section is to explain why it is important to develop the intervention and why results will be important to disseminate to researchers, policymakers, and practitioners.
 - You **must describe**
 - the intervention you propose to develop or revise.
- ii. **Research Plan** – The purpose of this section is to describe the methods you will use to develop or modify the intervention, document its feasibility, and determine its promise for improving the targeted learner outcomes, including measuring the costs to implement at the level of fidelity necessary to achieve those outcomes.
 - You **must describe** the
 - characteristics of your sample;
 - research design and methods for
 - developing the intervention;
 - determining the intervention's promise for generating beneficial learner outcomes through a pilot study; and
 - cost analysis of implementing the fully developed intervention; and
 - data analysis plan.
- iii. **Personnel** – The purpose of this section is to demonstrate that your team possesses the appropriate training and experience for the proposed research and dissemination activities and will commit enough time to the project.
 - You **must describe** your
 - project team.

- iv. **Resources** – The purpose of this section is to demonstrate how you have the institutional capacity and access to resources needed to execute a project of this size and complexity and appropriately disseminate the findings and products.
 - You **must describe** your
 - resources to conduct the project.

3. Award Limits

Awards made under Development and Innovation **must** conform to the following limits on duration and cost:

Duration Maximums:

- The maximum duration of a Development and Innovation award is **4 years**.

Cost Maximums:

- The maximum cost for a Development and Innovation award is **\$1,400,000** (total cost = direct + indirect costs).
 - To ensure that Development and Innovation projects focus on the development process, a maximum of 35 percent of project funds (direct and indirect funds) should be used for the pilot study, including intervention implementation, data collection, and analysis of pilot data.

4. Recommendations for Strong Applications

These recommendations are intended to improve the quality of your application, and the peer reviewers are asked to consider these recommendations in their evaluation of your application.

Significance

- Describe your proposed intervention, its key components, and how it will be implemented.
 - If you are proposing an adaptive intervention, clearly identify and present a rationale for decision points, tailoring variables, decision rules, and intervention options.
- Describe the population of learners and educators intended to benefit from this intervention.
- Describe the specific need for developing or refining the intervention, the potential market for the intervention, the resources and organizational structure necessary for the wide adoption and implementation of the intervention, and the potential commercialization of the intervention.
 - Contrast the intervention with current practice. What differentiates it and how does it address shortcomings of other interventions?
- Clearly describe your initial theory of change, illustrating how and why the desired change in learner outcomes is expected to happen as the result of the intervention.
 - Include the theoretical justifications and empirical evidence to support your theory of change.
 - Specify the core components of the planned intervention as well as conditions that must be in place that will lead to the desired change in education outcomes.
 - Include a visual representation of your theory of change in [Appendix C: Supplemental Charts, Tables, and Figures](#).
- Discuss the significance of your proposed work. How will the results inform education research? Will the results have implications for practitioners and policymakers?
- If you are applying for a Development and Innovation award to further develop an intervention that was the focus of a previous IES grant, you should (1) justify the need for another award, (2) describe the results and outcomes of prior or currently held awards to support the further development of the intervention, and (3) indicate whether what was developed has been (or is

being) evaluated for efficacy. Describe any available evaluation results and discuss their implications for the proposed project.

- In [Appendix A](#), discuss how you will make the results of your proposed research available to a wide range of audiences in a manner that reflects the purpose of a Development and Innovation study.

Research Plan

- Provide a timeline for each step in your project including such actions as intervention development or refinement, sample recruitment, data collection, data analysis, cost analysis, and dissemination. Timeline tables or figures may be placed in either the Project Narrative or [Appendix C: Supplemental Charts, Tables, and Figures](#) but should be discussed only in the Project Narrative.

Sample

- Describe your sample, how it represents the population you intend to study, and strategies to reduce attrition.

Research Design and Methods

- Specify your research questions and how they are motivated by the information provided in your significance section.
- Describe your research design with enough detail to demonstrate it will address your research questions.

Iterative Development Process:

- Describe how you will iteratively develop the intervention. Explain how your plan allows you to refine and improve upon the initial version of the intervention by implementing all or component parts, observing how well the intervention is functioning, and making necessary adjustments to ensure usability and feasibility when implemented by education personnel.
- Identify the core components of the intervention and how you will determine which components are critical for improving outcomes.
- IES does not require or endorse any specific model of iterative development or suggest an ideal number of iterations (revise, implement, observe, revise). Explain why the iterative development approach you will use is appropriate for the intervention you wish to develop or refine.

Feasibility of Implementation:

- Describe your plan to collect feasibility data in the type of setting and with the education personnel who will implement the intervention with the target learner population.

Pilot Study:

- Describe your plan for the pilot study. Provide a rationale for your plan and explain why the research design you are choosing is the most rigorous design you can implement given the type of intervention, the education personnel who will implement it, and the need to stay within the maximum 35 percent of grant funds for the pilot study. Pilot studies may use experimental group or single-case designs, or quasi-experimental designs.
- Identify the measures you will use to assess outcomes included in your theory of change.
 - For interventions designed to directly change the teaching and learning environment and, in doing so, affect education outcomes, provide measures of these intermediate outcomes such as educator or leader behaviors or education system characteristics that are hypothesized to be directly linked to the intervention.
- Describe how you will measure fidelity of implementation of the intervention and any accompanying training.

- Describe the comparison group and how you will monitor whether the treatment and comparison groups are different enough to expect the predicted education outcomes.

Cost:

- Describe how you will analyze the full range of costs associated with implementing the intervention, including those related to personnel, facilities, equipment, materials, and training. Address the following in your cost analysis plan:
 - costs by relevant level of implementation such as state, district, school, classroom, or learner levels;
 - costs associated with core intervention components; and
 - costs of comparison group practice to reflect the difference between them and the intervention.
- IES encourages a cost-effectiveness analysis for pilot studies with designs that can support such analysis such as fully powered, randomized controlled trials. A cost-effectiveness analysis is intended to consider the cost of the intervention together with the impact of the intervention. For recommendations on how to describe a cost-effectiveness analysis in your application, see the cost effectiveness section under Initial Efficacy and Follow-Up.

Measures:

- Identify all measures and discuss their validity and reliability for the intended purpose and population.
- Your measures should address usability, feasibility, fidelity of implementation, education outcomes, and expected intermediate outcomes.
- Describe your plan to develop and test implementation fidelity measures for all relevant components of the intervention, including any associated training for the education personnel responsible for implementing the intervention.
- If needed, you can propose devoting a short period of time (fewer than 6 months) to develop a measure. You should describe what will be developed, why it is necessary, and how it will be developed.

Data Analysis Plan

- Provide separate descriptions of each qualitative and quantitative analysis proposed.
- Explain how the qualitative and quantitative analyses will inform one another.
- For qualitative analyses, identify any software that will be used to conduct the analyses and how coding decisions will be made and verified.
- Describe and justify the statistical models to be used, including how they address the multilevel nature of education data.
- Discuss how you will address exclusion from testing and missing data. Propose to conduct sensitivity tests to assess the influence of key procedural or analytic decisions on the results.
- Provide separate descriptions for mediator and moderator analyses and provide information about statistical power.
- Explain how you will report effect sizes in ways that policymakers and practitioners can readily understand.

Personnel

- Identify and describe expertise of all key personnel, including the Principal Investigator, Co-Principal Investigators, and Co-Investigators on the project team regardless of whether they are located at the primary applicant institution or a subaward institution.
- Describe additional personnel at the primary applicant institution and any subaward institutions along with any consultants.
- Describe team members' qualifications to carry out the proposed work.

- Identify the key personnel responsible for the cost analysis and if applicable, cost-effectiveness analysis and describe their qualifications to carry out these analyses.
- Provide a plan for how key personnel will maintain their objectivity in conducting the proposed research and dissemination activities.
- Identify the management structure and procedures that will be used to keep the project on track and ensure the quality of its work, including
 - roles and responsibilities of personnel on the project; and
 - percent of time per calendar year (academic months plus summer months) personnel will devote to the project.
- If key personnel have previously received one or more IES grants, briefly discuss the outcomes of that research, including products developed or tested and how the project's findings and products were disseminated, in order to demonstrate your ability to produce and disseminate project outcomes consistent with the IES mission.

Resources

- Describe your institution's capacity to manage a grant of this size.
- Describe your access to resources available at the primary institution and any subaward institutions.
- Describe your plan for acquiring resources that are not currently accessible, will require significant expenditures, and are necessary for the successful completion of the project, such as equipment, test materials, curriculum, or training materials.
- Describe your access to the settings in which the research will take place. Include Letters of Agreement in [Appendix E](#) documenting their participation and cooperation. Convincing letters convey that the organizations understand what their participation in the study will involve, such as annual surveys, assessments, and/or classroom observations.
 - Include information about incentives for participation, if applicable.
- Describe your access to any necessary datasets. Include Letters of Agreement, data licenses, or existing Memoranda of Understanding in Appendix E to document that you will be able to access those data for your proposed use.
- Describe your resources to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination Plan](#).
 - Describe any offices or organizations expected to take part in your dissemination plans.
 - Describe resources to support dissemination through electronic means such as a website, social media account(s), electronic newsletter, listserv, or other electronic dissemination approach.

D. Initial Efficacy and Follow-Up

1. Purpose

Initial Efficacy and Follow-Up supports initial efficacy studies of education interventions using designs that meet [the IES What Works Clearinghouse \(WWC\) design standards](#)⁵ and longer term follow-up studies of rigorously evaluated interventions. Initial Efficacy projects test interventions that have not been rigorously evaluated previously to examine the intervention's beneficial impact on education outcomes in comparison to an alternative practice, program, or policy. Follow-Up projects test the longer term impact of an intervention that has been shown to have beneficial impacts on education outcomes in a previous or ongoing evaluation study. Initial Efficacy and Follow-Up projects should provide practical information about the benefits and costs of specific interventions to inform the intervention's theory of change, its implementation, its usefulness for education personnel, and future research.

If the intervention you propose to evaluate is not fully developed, you must apply under Development and Innovation or your application will be deemed nonresponsive and will not be forwarded for scientific peer review. If you need more than 6 months to develop and validate appropriate assessment tools for the proposed evaluation, you must apply under Measurement to support that work or your application will be deemed nonresponsive and will not be forwarded for scientific peer review.

2. Requirements

Project Narrative

The project narrative (recommended length: no more than 25 pages) for an Initial Efficacy and Follow-Up application **must** include four sections – Significance, Research Plan, Personnel, and Resources.

- i. **Significance** – The purpose of this section is to explain why it is important to test the impact of the intervention on learner outcomes under the proposed conditions and with the identified sample and why results will be important to disseminate to researchers, policymakers, and practitioners.
 - You **must describe**
 - the intervention you propose to evaluate; and
 - for a Follow-Up study, the evidence from the original evaluation.
- ii. **Research Plan** – The purpose of this section is to describe your proposed plan to evaluate the intervention.
 - You **must describe** the
 - characteristics of your sample;
 - research design and methods;
 - power analysis; and
 - data analysis plan.

⁵ Applications will be reviewed against the WWC design standards in effect at the time of RFA publication.

In addition, for an Initial Efficacy Study:

- You **must describe** your
 - cost analysis plan; and
 - cost-effectiveness analysis plan or a rationale for why a cost-effectiveness analysis cannot be done.

- iii. **Personnel** – The purpose of this section is to demonstrate that your team possesses the appropriate training and experience for the research and dissemination you propose and will commit enough time to the project.
 - You **must describe** your
 - project team.

- iv. **Resources** – The purpose of this section is to demonstrate how you have the institutional capacity and access to resources needed to execute the project and disseminate findings.
 - You **must describe** your
 - resources to conduct the project.

Data Management Plan

All Initial Efficacy and Follow-Up applications **must** include a [Data Management Plan \(DMP\) placed in Appendix F](#). Your DMP describes your plans for making the final research data from the proposed project accessible to others. IES Program Officers will be responsible for reviewing the completeness of the proposed DMP, and it is not considered in the review of scientific merit of your application. If your application is being considered for funding based on the scores received during the scientific peer review process but your DMP is determined incomplete, you will be required to provide additional detail regarding your DMP. See the Recommendations for Strong Applications section below for additional detail regarding your DMP.

3. Award Limits

Awards made under Initial Efficacy and Follow-Up **must** conform to the following limits on duration and cost.

Duration Maximums:

- The maximum duration of an Initial Efficacy Study award that involves primary data collection is 5 years.
- The maximum duration of an Initial Efficacy Study award that solely involves secondary data analysis is 3 years.
- The maximum duration of a Follow-Up Efficacy study is **3 years**.

Cost Maximums:

- The maximum cost for an Initial Efficacy Study award that involves primary data collection is **\$3,300,000** (total cost = direct + indirect costs).
- The maximum cost for an Initial Efficacy Study award solely involving secondary data analysis is **\$700,000** (total cost = direct + indirect costs).
- The maximum award for a Follow-Up Efficacy Study award is **\$1,100,000** (total cost = direct + indirect costs).
 - Grant funds for Follow-Up projects cannot be used for implementation of the intervention.

4. Recommendations for Strong Applications

These recommendations are intended to improve the quality of your application, and the peer reviewers are asked to consider these recommendations in their evaluation of your application.

Significance

- Describe the intervention that you propose to evaluate, including the
 - core intervention components;
 - processes and materials to support implementation such as manuals, websites, training, or coaching;
 - overall practical importance of the intervention for education personnel or policymakers; and
 - potential market for the intervention, including the resources and organizational structure necessary for its wider adoption and implementation and its potential to be commercialized.
- Describe the theory of change for the intervention and the theoretical and empirical evidence that supports it.
 - The theory of change should make clear why the intervention is likely to produce better education outcomes relative to current practice.
 - Specify the core components of the intervention as well as conditions that must be in place for the desired change in education outcomes to occur.
 - Include a visual representation of your theory of change in [Appendix C: Supplemental Charts, Tables, and Figures](#).
- Discuss the significance of your proposed work. How will the results affect policy or practice? How will the results inform future education research?
- Describe the population intended to benefit from this intervention and how your sample does or does not represent this larger population, including
 - the learners who should benefit, either directly or indirectly, from this intervention;
 - the education personnel who will implement the intervention and how they will implement it; and
 - the heterogeneity of the sample you propose compared to the target population.
- Describe the setting and implementation conditions for the proposed evaluation of this intervention. You may propose to provide enhanced implementation support to ensure adequate fidelity of implementation, or you may propose to test the intervention under real-world conditions with the type and level of implementation support that would take place if no study was being conducted.
 - For an Initial Efficacy Study, provide evidence showing the intervention's readiness for evaluation, including data on feasibility and fidelity of implementation, promise for achieving intended learner outcomes, and cost to implement. Describe any prior studies of the intervention, note their findings, and discuss how your proposed study would improve on past work.
 - For an Initial Efficacy study of a widely used intervention, which may lack an explicit theory of change and evidence of implementation feasibility and fidelity, provide evidence that the intervention is currently in such widespread use that it would be important to find out if it is indeed a beneficial education intervention. If the program was developed several decades ago, provide compelling evidence that it is still being widely used today and, therefore, should be evaluated.
 - For an Initial Efficacy study that involves solely secondary analysis of data, discuss how widespread the intervention is and justify the importance of evaluating the intervention and its implications for current education practice and policy.

- Describe what you will and will not be able to address using the existing data, including what is known or could be determined about the intervention's fidelity of implementation and comparison group practice.
- For a Follow-Up Efficacy study, describe the intervention's beneficial impact on education outcomes from a previous rigorous evaluation that has been completed or is ongoing. Describe the sample, design, measures, implementation fidelity, analyses, and results of the original study so that reviewers have enough information to judge its quality.
 - Explain why the original impacts would be expected to continue. If this requires revising the original theory of change, explain why.
- In [Appendix A](#), describe how you will make the results of your proposed research available to a wide range of audiences in a manner that reflects the purpose of an Initial Efficacy and Follow-Up study.

Research Plan

- Provide a timeline for each step in your evaluation: sample recruitment, baseline data collection, intervention implementation, ongoing data collection, assessing fidelity of implementation and comparison group practice, impact analysis, implementation analyses, moderator and mediator analyses, cost and cost-effectiveness analyses, and dissemination.
- Charts, tables and figures representing your project's timeline can be placed in either the Project Narrative or [Appendix C: Supplemental Charts, Tables, and Figures](#). However, discussion of the timeline should be included only in the Project Narrative.

Sample and Setting

- Describe the setting in which the study will take place, including the size and characteristics of the schools and/or the surrounding community, and how this will help better identify the learners or settings for which the intervention is most likely to work.
- Define your sample and sampling procedures, including justification for exclusion and inclusion criteria. Explain how these will allow you to draw inferences for the population identified for your evaluation.
- Describe strategies to increase the likelihood that participants (for example, schools, educators, and/or learners) will join the study and remain in the study over the course of the evaluation.
- For a Follow-Up Efficacy study:
 - Describe attrition in the prior study and your ability to follow sample members, including educators and learners, in the proposed follow-up. Include a CONSORT flow diagram (<http://www.consort-statement.org/consort-statement/flow-diagram>) showing the numbers of participants at each stage of the prior study. Discuss what steps you will take to minimize attrition in the follow-up study.
 - For follow-up studies of education personnel, explain how you will determine whether the learners in the follow-up study are like the learners in the original study.

Research Design and Methods

- Describe the conditions you are comparing in your study.
 - Describe and justify the counterfactual condition(s) in your evaluation. Describe your plan for documenting the counterfactual condition(s), including measuring of essential elements of the treatment contrast between participants in the treatment and control conditions as identified by an intervention's core components.
 - Describe strategies or existing conditions that will reduce potential contamination between treatment and comparison groups.
 - Indicate procedures to guard against bias entering the data collection process such as differential timing of assessments for treatment and control groups.

- IES encourages you to measure education outcomes at multiple timepoints to determine if short-term changes in education outcomes are sustained over time. If it is not possible to do this in the current study design, include activities that may help you apply to IES for an additional Follow-Up grant, such as maintaining contact with schools and study participants.
- IES recommends using randomized controlled trials because they have the strongest internal validity for causal conclusions. If you propose a randomized controlled trial, describe the following:
 - the unit of randomization and your rationale for randomizing at that level;
 - procedures for implementing and maintaining random assignment to condition;
 - the process for documenting baseline equivalence between treatment and comparison groups at the start of the study;
 - procedures for documenting the level of bias occurring from overall and differential attrition rates; and
 - how your study will meet [WWC design standards](#) with or without reservations.⁶
- Regression discontinuity designs can provide unbiased estimates of the effects of education interventions when there is a clear cutoff point on a standardized test or other instrument used to assign units to an intervention. If you propose a regression discontinuity design, describe the following:
 - the appropriateness of the assignment variable, the assignment variable's resistance to manipulation, the level of independence of the cutoff point from the assignment variable, and the policy relevance of the cutoff point;
 - the sensitivity analyses and robustness checks you will use to assess the influence of key procedural or analytic decisions such as functional forms and bandwidths on the results;
 - plans for determining that
 - there is a true discontinuity at the cutoff point and not at other points where a discontinuity would not be expected;
 - no manipulation of the assignment variable has occurred;
 - the treatment and comparison groups have similar baseline characteristics, especially around the cutoff point, to rule out selection bias; and
 - there are high levels of compliance to assignment with most treatment group members receiving the intervention and most comparison group members not; and
 - how your study will meet [WWC design standards](#) with or without reservations.
- If you propose a quasi-experimental design other than regression discontinuity, describe the following:
 - plans to ensure that the proposed design permits drawing causal conclusions about the effect of the intervention on the intended outcomes;
 - the procedure for minimizing selection bias;
 - the plan to address threats to internal validity; and
 - how your study will meet [WWC design standards](#) with reservations, as this is the highest standard that quasi-experimental designs can meet.

⁶ Applications will be reviewed against the WWC design standards in effect at the time of RFA publication.

Power Analysis

- Provide a separate power analysis for each causal analysis you propose to demonstrate the statistical power of the research design to detect a reasonably expected and minimally important effect of the intervention on the focal learner outcomes.
 - Justify why this level of effect would be expected and explain why this would be a practically important effect.
 - Consider how the clustering of participants such as learners in classrooms or schools will affect statistical power.
 - Detail the procedure used to calculate either the power for detecting the minimum effect or the minimum detectable effect size. Include the following:
 - the statistical formula you used;
 - the parameters with known values, such as number of clusters or number of participants within clusters;
 - the parameters whose values are estimated and how those estimates were made such as those for intraclass correlations or covariates;
 - other aspects of the design and how they may affect power such as the use of repeated observations or stratified sampling or blocking; and
 - predicted attrition and how it was addressed in the power analysis.
- Provide a similar discussion regarding power for any causal analyses to be done using subgroups of the proposed sample and any tests of mediation or moderation, even if those analyses are considered exploratory/secondary.

Outcome Measures

- Describe the reliability and validity of all outcome measures proposed, including learner outcomes, educator and education system characteristics, and implementation outcomes.
- Learner Outcomes:
 - Demonstrate that the proposed learner outcome measures are appropriately sensitive to the changes expected.
- Educator and Education System Characteristics:
 - For interventions designed to directly change the teaching and learning environment and, in doing so, affect education outcomes, provide measures of these intermediate outcomes such as educator or leader behaviors or education system characteristics that are hypothesized to be directly linked to the intervention.
- Implementation Outcomes:
 - Describe the measures you will use to document and understand implementation fidelity, including any training or coaching provided to implementers, and other relevant implementation measures of interest.
 - For Initial Efficacy Studies, you should measure implementation fidelity in the treatment group and comparable practices in the control group.
 - Describe the learner, educator, and/or school characteristics that might affect implementation and how you will examine their influence.
 - Examine treatment contrast early in the evaluation:
 - Document all aspects of implementation fidelity, including any training or coaching provided to those education personnel implementing the intervention, if applicable.
 - Describe your plan for determining implementation fidelity in the treatment group and the identification of comparable practices in the comparison group.

Note: If needed, you can propose devoting a short period of time (fewer than 6 months) to refining your outcome measures and/or developing or refining measures of intervention fidelity and comparison group practice.

Data Analysis Plan

- Detail your data analysis procedures for all quantitative and qualitative analyses necessary to address your research questions for the impact study, any subgroup analyses, analysis of baseline equivalence, and implementation fidelity.
 - IES encourages the use of mixed methods research, defined as the integration of qualitative and quantitative data, to inform these analyses.
- Explain how you will measure and report effect sizes in ways that policymakers and practitioners can readily understand.
- Address any clustering of learners within classrooms, schools, districts, or states.
- Discuss how exclusion from testing and missing data will be handled in your analyses. If you intend to impute missing data, describe the approach you will use to provide unbiased estimates.
- If you intend to link multiple datasets, provide sufficient detail for reviewers to judge the feasibility of the linking plan.
- While not required, the analysis of factors that influence the relationship between the intervention and learner outcomes (mediators and moderators) is an important component of an efficacy study because such analyses are central to the question of what works for whom and why.
- Incorporate implementation fidelity into impact analyses.
 - Describe your plan for incorporating the fidelity measures into your impact analysis. Examine whether intervention impact varies with different levels of fidelity and how fidelity to core components might be associated with beneficial impacts.
 - The results of such analyses may be used to improve the quality and scalability of the intervention through improvements in design, use, and support. Describe how you will identify adaptations of the program or policy when implemented by the education personnel in your evaluation. Describe how you will identify the local contexts that lead to adaptations and whether these adaptations are correlated with education outcomes.
- The cost analysis is intended to help schools, districts, and states understand the monetary costs of implementing the intervention. It documents expenditures for personnel, facilities, equipment, materials, training, and other relevant inputs.
 - Describe how you will identify all potential expenditures and compute the following costs within the proposed study:
 - annual cost and total cost across the lifespan of the program.
 - the overall cost and the cost at each level, including state, district, school, classroom, and learner, as appropriate.
 - if an intervention is composed of multiple components, cost per component; and
 - breakdown between start-up costs and maintenance costs.
 - Intervention costs may be contrasted with the costs of comparison group practice to reflect the difference between them.
 - Include a plan to conduct a cost analysis for Follow-Up studies. If cost information is not available, explain this.
- A cost-effectiveness analysis provides schools, districts, and states with information about the costs to achieve a particular impact when using a particular program, practice, or policy.
 - A cost-effectiveness analysis is required only for the primary learner outcome(s). The analysis should be conducted at the level that is most relevant for the intervention being studied, whether the school, classroom, or individual learner level.

- Describe the cost-effectiveness method you intend to use.
- If you are evaluating the impact of any specific component(s) of the intervention—in addition to the overall impact of the intervention—you should provide additional cost-effectiveness analyses for the separate components evaluated.
- If you are unable to conduct a cost-effectiveness analysis, explain why.

Personnel

- Identify and describe expertise of all key personnel, including the Principal Investigator, Co-Principal Investigators, and Co-Investigators on the project team regardless of whether they are located at the primary applicant institution or a subaward institution.
- Describe additional personnel at the primary applicant institution and any subaward institutions along with any consultants.
- Describe team members' qualifications to carry out the proposed work.
- Identify the key personnel responsible for the cost analysis and cost-effectiveness analysis and describe their qualifications to carry out these analyses.
- Provide a plan for how key personnel will maintain their objectivity in conducting the proposed research and dissemination activities. For example, clearly explain who will assign participants to treatment and comparison conditions, who will supervise outcome data collection and coding, and who will analyze outcome data.
- Identify the management structure and procedures that will be used to keep the project on track and ensure the quality of the work, including
 - roles and responsibilities of personnel on the project; and
 - percent of time per calendar year (academic months plus summer months) personnel will devote to the project.
- If key personnel have previously received one or more IES grants, briefly discuss the outcomes of that research, including products developed or tested and how the project's findings and products were disseminated, in order to demonstrate your ability to produce and disseminate project outcomes consistent with the IES mission.

Resources

- Describe your institution's capacity to manage a grant of this size.
- Describe your access to resources available at the primary institution and any subaward institutions.
- Describe your plan for acquiring any resources that are not currently accessible, will require significant expenditures, and are necessary for the successful completion of the project, such as equipment, test materials, curriculum or training materials.
- Describe your access to the settings in which the research will take place. Include Letters of Agreement in [Appendix E](#) documenting their participation and cooperation. Convincing letters convey that the organizations understand what their participation in the study will involve, such as annual surveys, assessments, and/or classroom observations.
 - Include information about incentives for participation, if applicable.
 - Describe your access to any necessary datasets. Include Letters of Agreement, data licenses, or existing Memoranda of Understanding in Appendix E to document that you will be able to access those data for your proposed use.
 - Describe the materials that could support the replication and/or scaling of an intervention by others, such as manuals, toolkits, or implementation guides.
 - Describe specific team members, offices, or organizations that will support dataset documentation and execution of the data management plan.
 - Describe your resources to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination Plan](#).

- Describe any offices or organizations expected to take part in your dissemination plans.
- Describe resources to support dissemination through electronic means such as a website, social media account(s), electronic newsletter, listserv, or other electronic dissemination approach.

Data Management Plan (DMP)⁷

DMPs are expected to differ depending on the nature of the project and the data collected. By addressing the items identified below, your DMP describes how you will meet the requirements of the IES policy for data sharing. The DMP should include the following:

- Plan for pre-registering the study in an education repository following the Standards for Excellence in Education Research (SEER) (<https://ies.ed.gov/seer.asp>). One such repository designed explicitly for education research is the SREE Registry of Efficacy and Effectiveness Studies <https://www.sree.org/pages/registry.php>.
- Type of data to be shared.
- Procedures for managing and for maintaining the confidentiality of Personally Identifiable Information.
- Roles and responsibilities of project or institutional staff in the management and retention of research data, including a discussion of any changes to the roles and responsibilities that will occur should the Project Director/Principal Investigator and/or Co-Project Directors/Co-Principal Investigators leave the project or their institution.
- Expected schedule for data access, including how long the data will remain accessible (at least 10 years) and acknowledgement that the timeframe of data accessibility will be reviewed at the annual progress reviews and revised as necessary.
- Format of the final dataset.
- Dataset documentation to be provided, including any decisions made about the data that would be important in replicating the results.
- Method of data access such as through a data archive and how those interested in using the data can locate and access them.
- Whether or not users will need to sign a data use agreement and, if so, what conditions they must meet.
- Any circumstances that prevent all or some of the data from being made accessible. This includes data that may fall under multiple statutes and, hence, must meet the confidentiality requirements for each applicable statute including data covered by Common Rule for Protection of Human Subjects, FERPA, and HIPAA.

The costs of the DMP can be covered by the grant and should be included in the budget and explained in the budget narrative. IES Program Officers will be responsible for reviewing the completeness of the proposed DMP. If your application is being considered for funding based on the scores received during the scientific peer review process but your DMP is determined incomplete, you will be required to provide additional detail regarding your DMP.

⁷ Resources that may be of interest to researchers in developing a data management plan can be found at <https://ies.ed.gov/funding/researchaccess.asp>.

E. Measurement

1. Purpose

Measurement supports the development and validation of new assessments or refinement and validation of existing assessments, for specific purposes, contexts, and populations. A Measurement project will result in a valid assessment that can be used by education personnel or researchers to measure learner outcomes for specific populations and contexts. Measurement projects can also address purposes such as measuring educator knowledge, skills, and abilities; guiding instruction; improving educator practice; evaluating educator job performance; or assessing the effectiveness of schools or school systems.

If a significant amount of exploratory research is needed to establish an assessment framework before developing and validating your proposed assessment tool, you must apply under Exploration or your application will be deemed nonresponsive and will not be forwarded for scientific peer review.

2. Requirements

Project Narrative

The project narrative (recommended length: no more than 25 pages) for a Measurement project application **must** include four sections – Significance, Research Plan, Personnel, and Resources.

- i. **Significance** – The purpose of this section is to explain why it is important to develop or refine an assessment or validate an assessment for a specific setting, purpose, and population and why results will be important to disseminate to researchers, policymakers, and practitioners.
 - You **must describe** the
 - assessment you propose to develop, refine, or validate.
- ii. **Research Plan** – The purpose of this section is to describe the methodology you will use to develop or refine the assessment, document its validity, and establish its connection to education outcomes.
 - You **must describe** the
 - characteristics of your sample;
 - research design and methods for
 - developing or refining the assessment;
 - validating the assessment; and
 - determining the costs of administering and scoring the assessment; and
 - data analysis plan.
- iii. **Personnel** – The purpose of this section is to demonstrate that your team possesses the appropriate training and experience for the research and dissemination you propose and will commit enough time to the project.
 - You **must describe** your
 - project team.

- iv. **Resources** – The purpose of this section is to demonstrate that you have the institutional capacity and access to resources needed to execute a project of this size and complexity and appropriately disseminate the findings and products.
- You **must describe** your
 - resources to conduct the project.

3. Award Limits

Awards made under Measurement **must** conform to the following limits on duration and cost:

Duration Maximums:

- The maximum duration of a Measurement project is **4 years**.

Cost Maximums:

- The maximum cost for a Measurement award is **\$1,400,000** (total cost = direct costs + indirect costs).

4. Recommendations for Strong Applications

These recommendations are intended to improve the quality of your application, and the peer reviewers are asked to consider these recommendations in their evaluation of your application.

Significance

- Describe the specific need for developing, refining, or validating the assessment; the potential market for such an assessment; and the potential commercialization of the assessment.
 - Contrast the assessment with current typical assessment practices. What differentiates it and how does it address shortcomings of other assessments?
 - For projects that propose further validation activities only, explain why any prior validation evidence is not satisfactory for the proposed purpose(s), context(s), or population(s).
- Discuss the significance of your proposed work. How will the results inform education research? Will the results have implications for practitioners and policymakers?
 - Describe the assessment framework and explain how the proposed validation activities will produce evidence to support the claims of the assessment framework. A strong assessment framework includes the following:
 - operational definition(s) of the construct(s) of measurement;
 - theoretical model showing how constructs are related to each other and/or external variables;
 - description of how the assessment provides evidence of the construct(s) identified in the rationale;
 - description of the rationale for how and why performance on the assessment items supports references or judgments regarding the construct(s) of measurement; and
 - description of the intended use(s) and population(s) for which the assessment is meant to provide valid inferences.
- If you are applying for a second Measurement award to further develop or validate an assessment that was the focus of a previous Measurement award, justify the need for a second award and describe the results and outcomes of the previous award including the status of the assessment and its validation.
- In [Appendix A](#), discuss how you will make the results of your proposed research available to a wide range of audiences in a manner that reflects the purpose of a Measurement study.

Research Plan

- Provide a timeline for each step in your project including such actions as measurement development (if applicable), sample recruitment, data collection, validation activities, data analysis including analysis of costs, and dissemination. Timelines may be placed in either the Project Narrative or [Appendix C: Supplemental Charts, Tables, and Figures](#) but discussion of the timeline should be included only in the Project Narrative.

Sample

- Describe the sample you will use to collect data, how it represents the population you intend to assess and, if applicable, strategies to reduce attrition.

Research Design and Methods

- Specify your research questions and how they are motivated by the information provided in your significance section.
- Describe your research design with enough detail to demonstrate it will address your research questions.

Iterative Development Process:

If you propose to develop a new assessment or refine an existing assessment, describe the following.

- The iterative procedures for developing, field testing, and selecting items to be used in the assessment and for obtaining representative responses to items.
- The procedures for scoring the assessment, including justification for the scaling model that will be used to create scores.
- The procedures for demonstrating that items adequately represent the constructs of interest and minimizing the influence of factors irrelevant to the construct.
- The procedures for establishing the fairness of the test for all members of the intended population.
- The process of determining the administrative procedures for conducting the assessment such as mode of administration or whether accommodations like alternative administrative conditions will be allowed.
- The plans for examining the feasibility of the assessment for the intended purpose.
- If alternate forms will be developed, the procedures for establishing the equivalency of the forms.
- If the proposed assessment is used to measure growth, the procedures for establishing a developmental scale that is equated vertically.

Validation Activities:

- Describe the proposed validation activities with enough detail to demonstrate they will provide enough evidence to address the claims of the assessment framework.
- Describe the procedures for determining the reliability of the assessment for the intended purpose(s) and population(s).
- Identify the types of validity evidence to be collected. Provide justification for the adequacy of the selected types of evidence to support use of the assessment for the proposed purpose(s), population(s), and context(s).

Cost Analysis:

- Describe how you will identify
 - all potential expenditures for implementing the assessment such as expenditures for personnel, facilities, equipment, materials, and training.
 - cost by implementation level (district versus school) as well as overall cost.

- Cost per component (for any assessment composed of multiple components).
- Whenever possible, assessment costs should be contrasted with the costs of current typical assessment practices to reflect the difference between them.

Data Analysis Plan

- Describe the statistical models and analyses that will be used, including how they address the multilevel nature of education data and how well they control for selection bias.
- Discuss how you will address missing data. Propose to conduct sensitivity tests to assess the influence of key procedural or analytic decisions on the results.
- Describe statistical power for all proposed analyses.

Personnel

- Identify and describe expertise of all key personnel, including the Principal Investigator, Co-Principal Investigators, and Co-Investigators on the project team regardless of whether they are located at the primary applicant institution or a subaward institution.
- Describe additional personnel at the primary applicant institution and any subaward institutions along with any consultants.
- Describe team members' qualifications to carry out the proposed work.
- Identify the key personnel responsible for the cost analysis and describe their qualifications to carry out these analyses.
- Provide a plan for how key personnel will maintain their objectivity in conducting the proposed research and dissemination activities.
- Identify the management structure and procedures that will be used to keep the project on track and ensure the quality of its work, including
 - roles and responsibilities of personnel on the project; and
 - percent of time per calendar year (academic months plus summer months) personnel will devote to the project.
- If key personnel have previously received one or more IES grants, briefly discuss the outcomes of that research, including products developed or tested and how the project's findings and products were disseminated, in order to demonstrate your ability to produce and disseminate project outcomes consistent with the IES mission.

Resources

- Describe your institution's capacity to manage a grant of this size.
- Describe your access to resources available at the primary institution and any subaward institutions.
- Describe your plan for acquiring any resources that are not currently accessible, will require significant expenditures, and are necessary for the successful completion of the project, such as equipment, test materials, curriculum or training materials.
- Describe your access to the settings in which the research will take place. Include Letters of Agreement in Appendix E documenting their participation and cooperation. Convincing letters convey that the organizations understand what their participation in the study will involve, such as annual surveys, assessments, and/or classroom observations.
 - Include information about incentives for participation, if applicable.
- Describe your access to any necessary datasets. Include Letters of Agreement, data licenses, or existing Memoranda of Understanding in [Appendix E](#) to document that you will be able to access those data for your proposed use.
- Describe your resources to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination Plan](#).

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- Describe any offices or organizations expected to take part in your dissemination plans.
- Describe resources to support dissemination through electronic means such as a website, social media account(s), electronic newsletter, listserv, or other electronic dissemination approach.

Part IV: Appendices and Other Narrative Content

A. Required and Optional Appendices

The required Project Narrative – Significance, Research Plan, Personnel, and Resources – that is described for each project type (see [Part III: Project Type Requirements and Recommendations](#)) is followed by several appendices. Some of these appendices are required, and some are optional. When you submit your application through Grants.gov, you will create a single PDF file that *contains the Project Narrative and all appendices* and include it as an attachment in the application package. Include appendices in alphabetical order and simply skip an appendix if it is not required for your application or if you choose not to include one of the optional appendices. See the IES Application Submission Guide (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) for more information about preparing and submitting your application using the required application package for this competition through Grants.gov (<https://www.grants.gov/>).

1. Appendix A: Dissemination Plan (Required)

You **must** include Appendix A after the Project Narrative. We recommend that Appendix A be no more than two pages. In Appendix A, describe your plan to disseminate the findings from the proposed project. Dissemination plans should be tailored to the audiences that will benefit from the findings and reflect the unique purposes of the project type (see Part III).

- Identify the audiences that you expect will most likely benefit from your research such as federal policymakers and program administrators, state policymakers and program administrators, state and local school system administrators, school administrators, educators, parents, learners, and other education researchers.
- Discuss the different ways in which you intend to reach these audiences through the publications, presentations, and products you expect to produce.
 - IES-funded researchers are expected to publish and present in venues designed for policymakers and practitioners in a manner and style useful and usable to this audience. For example:
 - Report findings to the education agencies and schools that provided the project with data and data-collection opportunities.
 - Give presentations and workshops at meetings of professional associations of teachers and leaders.
 - Publish in practitioner journals.
 - Engage in activities with relevant IES-funded Research and Development (R&D) Centers, Research Networks, or Regional Educational Laboratories (RELs)
 - R&D Centers: <https://ies.ed.gov/ncer/RandD/>;
 - Research Networks: <https://ies.ed.gov/ncer/research/researchNetworks.asp>;
 - RELs: <https://ies.ed.gov/ncee/edlabs/>.
- IES-funded researchers who create products for use in research and practice as a result of their project (such as curricula, professional development programs, measures and assessments, guides, and toolkits) are expected to make these products available for research purposes or (after evaluation or validation) for general use. Consistent with existing guidelines, IES encourages researchers to consider how these products could be brought to market to increase their dissemination and use.
- IES-funded researchers are expected to publish their findings in scientific, peer-reviewed journals and present them at conferences attended by other researchers.
- Your dissemination plan should reflect the purpose of your project type.

- [Exploration](#) projects identify relationships between individual-, educator-, school-, and policy-level characteristics and education outcomes and factors outside of education settings that may influence or guide those relationships. Findings from Exploration projects are most useful in pointing out potentially fruitful areas for further attention from researchers, policymakers, and practitioners rather than providing strong evidence for adopting specific interventions or assessments.
- [Development and Innovation](#) projects develop new or revise existing interventions and pilot them to provide evidence of promise for improving education outcomes. For example, if the results of your pilot study indicate the intervention is promising, dissemination efforts should focus on letting others know about the availability of the new intervention for more rigorous evaluation and further adaptation. Dissemination efforts from these projects could also provide useful information on the design process, how intervention development can be accomplished in partnership with practitioners, and the types of new practices that are feasible or not feasible for use by practitioners. The cost of implementing the intervention needs to be measured to the extent possible and communicating the cost and cost-effectiveness of interventions should be part of dissemination work.
- [Initial Efficacy and Follow-Up](#) projects evaluate the impact of an intervention on education outcomes. IES considers all types of findings from these projects to be potentially useful to researchers, policymakers, and practitioners and expects that these findings will be disseminated in order to contribute to the full body of evidence on the intervention and will form the basis for recommendations. The costs of interventions need to be measured and communicating the costs and cost-effectiveness of interventions should be part of dissemination work.
 - Findings of a beneficial impact on learner outcomes could support the wider use of the intervention and the further adaptation of the intervention for different conditions.
 - Findings of no impact on learner outcomes (with or without impacts on more intermediate outcomes such as a change in teacher instruction) are important for decisions regarding the ongoing use and wider dissemination of the intervention, further revision of the intervention and its implementation, and revision of the theory of change underlying the intervention.
- [Measurement](#) projects support the development and validation of new assessments or refinement and validation of existing assessments, for specific purposes, contexts, and populations. Dissemination of findings should clearly identify the psychometric properties of the assessment and the specific uses and populations for which the assessment was validated. Should a project fail to validate an assessment for a specific use and population, these findings are important to disseminate in order to support decisionmaking regarding the assessment's current use and further development. The cost of administering the assessment needs to be measured to the extent possible and communicating the cost of the assessment should be part of dissemination work.

The Dissemination Plan is the only information that should be included in Appendix A.

2. Appendix B: Response to Reviewers (Required for Resubmissions)

If your application is a resubmission, you **must** include Appendix B. If your application is one that you consider to be new but that is similar to a previous application, you should include Appendix B. We recommend that Appendix B be no more than three pages.

Use Appendix B to describe how the revised application is responsive to prior reviewer comments. If you have submitted a somewhat similar application in the past but are submitting the current application as a new application, you should use Appendix B to provide a rationale explaining why the current application should be considered a "new" application rather than a "resubmitted" application. This response to the reviewers is the only information that should be included in Appendix B.

3. Appendix C: Supplemental Charts, Tables, and Figures (Optional)

We recommend that Appendix C be no more than 15 pages. In Appendix C, you may include figures, charts, or tables with supplementary information like a timeline for your research project, a diagram of the management structure of your project, or examples of measures used to collect data for your project such as individual test items, tests, surveys, and observation and interview protocols. These are the only materials that should be included in Appendix C.

4. Appendix D: Examples of Intervention or Assessment Materials (Optional)

We recommend that Appendix D be no more than 10 pages. If you are proposing to explore, develop, evaluate, or validate an intervention or assessment you may include examples of curriculum materials, computer screen shots, assessment items, or other materials used in the intervention or assessment to be explored, developed, evaluated, or validated. These are the only materials that should be included in Appendix D.

5. Appendix E: Letters of Agreement (Optional)

We do not recommend a page length for Appendix E. Use this appendix to provide copies of Letters of Agreement from schools and districts who will participate in or provide data for the proposed research or serve as consultants. Ensure that the letters reproduce well so that reviewers can easily read them. Do not reduce the size of the letters. See the [IES Application Submission Guide](#) for guidance regarding the size of file attachments.

Letters of Agreement should include enough information to make it clear that the author of the letter understands the nature of the commitment of time, space, and resources to the research project that will be required if the application is funded. A common reason for projects to fail is loss of participating schools and districts. Letters of Agreement regarding the provision of data should make it clear that the author of the letter will provide the data described in the application for use in the proposed research and in time to meet the proposed schedule. These are the only materials that should be included in Appendix E.

6. Appendix F: Data Management Plan (Required for Initial Efficacy and Follow-Up)

If you are applying under [Initial Efficacy and Follow-Up](#) you **must** include Appendix F. We recommend that Appendix F be no more than five pages.

Include your Data Management Plan (DMP) in Appendix F. The content of the DMP is discussed under Data Management Plan in Initial Efficacy and Follow-Up. This is the only material that should be included in Appendix F.

B. Other Narrative Content

In addition to the Project Narrative (see [Part III: Project Type Requirements and Recommendations](#)) and required and optional Appendices (see above), you will also prepare a Project Summary/Abstract, a Bibliography and References Cited, and an Exempt or Non-Exempt Research on Human Subjects Narrative to include as separate file attachments in your application. See the IES Application Submission Guide (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) for more information about preparing and submitting your application using the required application package for this competition on Grants.gov (<https://www.grants.gov/>).

1. Project Summary/Abstract

You **must** submit the Project Summary/Abstract as a separate PDF attachment in the application package. We recommend that the Project Summary/Abstract be one-page long and include the following information:

- **Title: Distinct, descriptive title** of the project.
- **Topic and Project Type:** Identify the topic and project type to which you are applying (see [Parts II](#) and [III](#)). This information should match the topic and project type codes entered for Item 4b: Agency Routing Number on the SF 424 Application for Federal Assistance form (see the [IES Application Submission Guide](#)).
- **Purpose:** A brief description of the purpose of the project and its significance for improving education in the United States. This should include why the research is important, what this project will do to address the need, and the general expected outcomes of the project.
- **Setting:** A brief description of the location (identified at the state level) where the research will take place and other important characteristics of the locale, such as whether it is rural or urban.
- **Population/Sample:** A brief description of the sample including number of participants; the composition of the sample including age or grade level, race/ethnicity, or disability status as appropriate; and the population the sample is intended to represent.
- **Intervention/Assessment/Factors:** For Development and Innovation, Initial Efficacy and Follow-Up, and Measurement projects, a brief description of the intervention or assessment the research team will develop, evaluate, or validate. For Exploration projects, a brief description of the factors that will be examined in relation to learner outcomes.
- **Control Condition:** If applicable, a brief description of the control or comparison condition, including the participants and what they will experience. If there is no treatment contrast, that can be noted as well.
- **Research Design and Methods:** A brief description of the major features of the design and methodology. For example, specify whether you will use a randomized controlled trial or a quasi-experimental design for an Initial Efficacy and Follow-Up study. As another example, specify the qualitative methods you will use to inform the design process for a Development project. Describe design and methods year by year, in terms of steps or phases as applicable.
- **Key Measures:** A brief description of key measures, including what constructs the measures assess and whether those constructs are study outcomes.
- **Data Analytic Strategy:** A brief description of the data analytic strategies that the research team will use to answer research questions.
- **Cost Analysis:** If applicable, a brief description of the cost and cost-effectiveness analyses planned.

See abstracts of our funded grants in our online [search engine of funded research grants](#) for examples of the content to be included in your Project Summary/Abstract.

2. Bibliography and References Cited

You **must** submit the Bibliography and References Cited as a separate PDF attachment in the application package. We do not recommend a page length for the Bibliography and References Cited. You should include complete citations, including the names of all authors (in the same sequence in which they appear in the publication), titles of relevant elements such as the article/journal and chapter/book, page numbers, and year of publication for literature cited in the Project Narrative.

3. Human Subjects Narrative

You **must** submit an Exempt or Non-Exempt Human Subjects Narrative as a separate PDF attachment in the application package. We do not recommend a page length for the Human Subjects Narrative. See [Information About the Protection of Human Subjects in Research Supported by the Department of Education](#) for more information about what to include in this narrative.

The U.S. Department of Education does not require certification of Institutional Review Board approval at the time you submit your application. However, if an application that involves non-exempt human subjects research is recommended for funding, the designated U.S. Department of Education official will request that you obtain and send the certification to the Department within 30 days of the formal request.

Part V: Competition Regulations and Review Criteria

A. Funding Mechanisms and Restrictions

1. Mechanism of Support

IES intends to award grants pursuant to this Request for Applications.

2. Funding Available

Although IES intends to support the topics and project types described in this announcement, all awards pursuant to this Request for Applications are contingent upon the availability of funds and the receipt of meritorious applications. IES makes its awards to the highest quality applications, as determined through scientific peer review, regardless of topic or project type.

The size of the award depends on the project type and scope of the project. Please attend to the duration and budget maximums set for each project type in [Part III Project Type Requirements and Recommendations](#).

3. Special Considerations for Budget Expenses

Indirect Cost Rate

When calculating your expenses for research conducted in field settings, you should apply your institution's federally negotiated off-campus indirect cost rate. Questions about indirect cost rates should be directed to [the U.S. Department of Education's Indirect Cost Group](#).

Institutions, both primary grantees and subawardees, not located in the territorial United States may not charge indirect costs.

Meetings and Conferences

If you are requesting funds to cover expenses for hosting meetings or conferences, please note that there are statutory and regulatory requirements in determining whether costs are reasonable and necessary. Please refer to the Office of Management and Budget's (OMB's) Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance), 2 CFR, [§200.432 Conferences](#).

Federal grant funds cannot be used to pay for alcoholic beverages or entertainment, which includes costs for amusement, diversion, and social activities. In general, federal funds may not be used to pay for food. A grantee hosting a meeting or conference may not use grant funds to pay for food for conference attendees unless doing so is necessary to accomplish legitimate meeting or conference business. You may request funds to cover expenses for working meetings, such as working lunches; however, IES will determine whether these costs are allowable in keeping with the Uniform Guidance Cost Principles. Grantees are responsible for the proper use of their grant awards and may have to repay funds to the Department if they violate the rules for meeting- and conference-related expenses or other disallowed expenditures.

4. Program Authority

20 U.S.C. 9501 et seq., the "Education Sciences Reform Act of 2002," Title I of Public Law 107-279, November 5, 2002. This program is not subject to the intergovernmental review requirements of Executive Order 12372.

5. Applicable Regulations

Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance) codified at CFR Part 200. The Education Department General Administrative Regulations (EDGAR) in 34 CFR parts 77, 81, 82, 84, 86 (part 86 applies only to institutions of higher education), 97, 98, and 99. In addition 34 CFR part 75 is applicable, except for the provisions in 34 CFR 75.100, 75.101(b), 75.102, 75.103, 75.105, 75.109(a), 75.200, 75.201, 75.209, 75.210, 75.211, 75.217, 75.219, 75.220, 75.221, 75.222, and 75.230.

B. Additional Award Requirements

1. Attendance at the Annual IES Principal Investigators Meeting

The Principal Investigator (PI) is required to attend one meeting each year (for up to 2 days) in Washington, DC with other IES grantees and IES staff. The project's budget should include this meeting. Should the PI not be able to attend the meeting, she or he may designate another person who is key personnel on the research team to attend.

2. Public Availability of Data and Results

You must include a [Data Management Plan \(DMP\) in Appendix F](#) if you are submitting an [Initial Efficacy and Follow-Up](#) application. The scientific peer review process will not include the DMP in the scoring of the scientific merit of the application. Instead, IES Program Officers will be responsible for reviewing the completeness of the proposed DMP. The costs of the DMP can be covered by the grant and should be included in the budget and explained in the budget narrative.

All Principal Investigators are required to submit the electronic version of their final manuscripts upon acceptance for publication in a peer-reviewed scholarly publication to [ERIC](#), a publicly accessible and searchable electronic database of education research that makes available full text documents to the public for free. This [public access requirement](#) applies to peer-reviewed, original scholarly publications that have been supported (in whole or in part) with direct funding from IES, although it does not apply to book chapters, editorials, reviews, or non-peer-reviewed conference proceedings. **Principal Investigators must submit any peer-reviewed scholarly publications to ERIC.**

The author's final manuscript is defined as the final version accepted for journal publication and includes all modifications from the peer review process. Submission of accepted manuscripts for public accessibility through ERIC is strongly encouraged as soon as possible **but must occur within 12 months of the publisher's official date of publication.** ERIC will not make the accepted manuscripts available to the public prior to the end of the 12-month embargo period, unless specified by the publisher.

The ERIC website includes a homepage for the [Grantee and Online Submission System](#), as well as a [Frequently Asked Questions](#) page. During the submission process, authors will submit bibliographic information from the publication, including title, authors, publication date, journal title, and associated IES award number(s).

3. Special Conditions on Grants

IES may impose special conditions on a grant pertinent to the proper implementation of key aspects of the proposed research design or if the grantee is not financially stable, has a history of unsatisfactory performance, has an unsatisfactory financial or other management system, has not fulfilled the conditions of a prior grant, or is otherwise not responsible.

4. Demonstrating Access to Data and Education Settings

The research you propose to do under a specific topic and project type will most likely require that you have (or will obtain) access to education settings such as classrooms, schools, districts,

colleges/universities; secondary datasets; or studies currently under way. In such cases, you will need to provide evidence that you have access to these resources prior to receiving funding. Whenever possible, [include Letters of Agreement in Appendix E](#) from those who have responsibility for or access to the data or settings you wish to incorporate when you submit your application. Even in circumstances where you have included such letters with your application, **IES will require additional supporting evidence prior to the release of funds**. If you cannot provide such documentation, IES may not award the grant or may withhold funds.

You will need supporting evidence of partnership or access if you are doing any of the following.

- *Conducting research in or with education settings* - If your application is being considered for funding based on scientific merit scores from the scientific peer review panel and your research relies on access to education settings, you will need to provide documentation that you have access to the necessary settings in order to receive the grant. This means that if you do not have permission to conduct the proposed project in the necessary number of settings at the time of application, you will need to provide documentation to IES indicating that you have successfully recruited the necessary number of settings for the proposed research before the full first-year costs will be awarded. If you recruited sufficient numbers of settings prior to the application, IES will ask you to provide documentation that the settings originally recruited for the application are still willing to partner in the research.
- *Using secondary datasets* - If your application is being considered for funding based on scientific merit scores from the scientific peer review panel and your research relies on access to secondary datasets (such as federally collected datasets, state or district administrative data, or data collected by you or other researchers), you will need to provide documentation that you have access to the necessary datasets in order to receive the grant. This means that if you do not have permission to use the proposed datasets at the time of application, you must provide documentation to IES from the entity controlling the dataset(s) before the grant will be awarded. This documentation must indicate that you have permission to use the data for the proposed research for the time period discussed in the application. If you obtained permission to use a proposed dataset prior to submitting your application, IES will ask you to provide updated documentation indicating that you still have permission to use the dataset to conduct the proposed research during the project period.
- *Building on existing studies* - You may propose studies that piggyback onto an ongoing study, which will require access to those subjects and data. In such cases, the Principal Investigator of the existing study should be one of the members of the research team applying for the grant to conduct the new project.

In addition to obtaining evidence of access, IES strongly advises applicants to establish a written agreement, within 3 months of receipt of an award, among all key collaborators and their institutions (including Principal and Co-Principal Investigators) regarding roles, responsibilities, access to data, publication rights, and decisionmaking procedures.

C. Overview of Application and Scientific Peer Review Process

1. Submitting Your Letter of Intent

Letters of Intent (LOIs) are submitted online at <https://iesreview.ed.gov>. **Select the Letter of Intent form for the topic under which you plan to submit your application.** The online submission form contains fields for each of the seven content areas listed below. Use these fields to provide the requested information. The project description should be single-spaced and is recommended to be no more than one page (about 3,500 characters). The LOI is non-binding and optional but strongly recommended. If you submit an LOI, a Program Officer will contact you regarding your proposed research. IES staff also use the information in the LOI to identify the expertise needed for the scientific peer review panels and to secure a sufficient number of reviewers to handle the anticipated number of applications.

Elements for the Letter of Intent:

- Descriptive title
- Topic and project type that you will address
- Brief description of the proposed project
- Name, institutional affiliation, address, telephone number, and email address of the Principal Investigator and any Co-Principal Investigators
- Name and institutional affiliation of any key collaborators and contractors
- Duration of the proposed project (attend to the Duration maximums for each project type)
- Estimated total budget request (attend to the Budget maximums for each project type)

2. Resubmissions and Multiple Submissions

If you intend to revise and resubmit an application that was submitted to a previous IES competition but that was not funded, you **must** indicate on the SF 424 Application for Federal Assistance Form in the application package (see [IES Application Submission Guide](#)) that the FY 2020 application is a resubmission (Item 8) and include the application number of the previous application (an 11-character alphanumeric identifier beginning "R305" or "R324" entered in Item 4a). Prior reviews will be sent to this year's reviewers along with the resubmitted application. You **must** describe your response to the prior reviews using [Appendix B: Response to Reviewers](#). Revised and resubmitted applications will be reviewed according to this FY 2020 Request for Applications.

If you submitted a somewhat similar application in the past and did not receive an award but are submitting the current application as a new application, you should indicate on the application form (Item 8) that your FY 2020 application is a new application. In Appendix B, you should provide a rationale explaining why your FY 2020 application should be considered a new application rather than a revision. If you do not provide such an explanation, then IES may send the reviews of the prior unfunded application to this year's reviewers along with the current application.

You may submit applications to more than one of the FY 2020 IES grant programs and to multiple topics within the Education Research Grants program. In addition, within a particular grant program or topic, you may submit multiple applications. However, you may submit a given application only once for the FY 2020 grant competitions, meaning you may not submit the same application or similar applications to multiple grant programs, multiple topics, or multiple times within the same topic. If you submit the same or similar applications, IES will determine whether and which applications will be accepted for review and/or will be eligible for funding.

3. Application Processing

Applications must be submitted electronically and received no later than 11:59:59 p.m. Eastern Time on August 29, 2019 through the internet using the software provided on the Grants.gov website <https://www.grants.gov/>. You must follow the application procedures and submission requirements described in the IES Application Submission Guide (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) and on Grants.gov <https://www.grants.gov/web/grants/applicants/apply-for-grants.html>.

After applications are fully uploaded and validated at Grants.gov, the U.S. Department of Education receives the applications for processing and transfer to the IES Peer Review Information Management Online (PRIMO) system (<https://iesreview.ed.gov/>). PRIMO allows applicants to track the progress of their application via the Applicant Notification System (ANS).

Approximately 1 to 2 weeks after the application deadline, invitation emails are sent to applicants who have never applied to IES before to create their individual PRIMO ANS accounts. Both the PI and the AOR will receive invitation emails. Approximately 4 to 6 weeks after the application deadline, all applicants (new and existing ANS users) will begin to receive a series of emails about the status of their application. See the [IES Application Submission Guide](#) for additional information about ANS and PRIMO.

Once an application has been submitted and the application deadline has passed, you may not submit additional materials or information for inclusion with your application.

4. Scientific Peer Review Process

IES will forward all applications that are compliant and responsive to this Request for Applications to be evaluated for scientific and technical merit. Scientific reviews are conducted in accordance with the review criteria stated below and the review procedures posted on the IES website, https://ies.ed.gov/director/sro/peer_review/application_review.asp, by a panel of scientists who have substantive and methodological expertise appropriate to the program of research and Request for Applications.

Each compliant and responsive application is assigned to one of the IES scientific review panels https://ies.ed.gov/director/sro/peer_review/reviewers.asp. Applications are assigned to panel according to the match between the overall expertise of reviewers on each panel and the content and methodological approach proposed in each application.

At least two primary reviewers will complete written evaluations of the application, identifying strengths and weaknesses related to each of the review criteria. Primary reviewers will independently assign a score for each criterion, as well as an overall score, for each application they review. Based on the overall scores assigned by primary reviewers, IES calculates an average overall score for each application and prepares a preliminary rank order of applications before the full scientific peer review panel convenes to complete the review of applications.

The full panel will consider and score only those applications deemed to be the most competitive and to have the highest merit, as reflected by the preliminary rank order. A panel member may nominate for consideration by the full panel any application that he or she believes merits full panel review but that would not have been included in the full panel meeting based on its preliminary rank order.

5. Review Criteria for Scientific Merit

The purpose of IES-supported research is to contribute to solving education problems and to provide reliable information about the education practices that support learning and improve academic achievement and access to education for all learners. IES expects reviewers for all applications to assess the following aspects of an application in order to judge the likelihood that the proposed research will have a substantial impact on the pursuit of that purpose. Information pertinent to each of these criteria is described in [Part III Project Type Requirements and Recommendations](#) and [Part II Topics](#).

Significance

Does the applicant address the recommendations described in the Significance section for the project type under which the applicant is submitting the application?

Research Plan

Does the applicant address the recommendations described in the Research Plan section for the project type under which the applicant is submitting the application?

Personnel

Does the applicant address the recommendations described in the Personnel section for the project type under which the applicant is submitting the application?

Resources

Does the applicant address the recommendations described in the Resources section for the project type under which the applicant is submitting the application?

6. Award Decisions

The following will be considered in making award decisions for responsive and compliant applications:

- scientific merit as determined by scientific peer review;
- performance and use of funds under a previous federal award;
- contribution to the overall program of research described in this Request for Applications;
- ability to carry out the proposed research within the maximum award and duration requirements;
and
- availability of funds.

Part VI: Compliance and Responsiveness Checklist

Only compliant and responsive applications will be peer reviewed. Use this checklist to better ensure you have included all required components for compliance and that you have addressed all general and project narrative requirements for responsiveness. See the IES Application Submission Guide (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) for an Application Checklist that describes the forms in the application package that must be completed and the PDF files that must be attached to the forms for a successful submission through Grants.gov.

Compliance				
	• Have you included a Project Narrative?			
	• Have you included Appendix A: Dissemination Plan?			
	• If you are resubmitting an application, have you included Appendix B: Response to Reviewers?			
	• If you are submitting an Initial Efficacy and Follow-Up application, have you included Appendix F: Data Management Plan?			
Responsiveness				
	• Have you met all the General Requirements for an application?			
	○ Does your proposed research include measures of academic outcomes?			
	▪ If you are applying under the Career and Technical Education (CTE) topic, does your proposed research include the additional required measures of CTE outcomes?			
	▪ If you are applying under the Social and Behavioral Context for Academic Learning topic, does your proposed research include the additional required measures of social and behavioral competencies?			
	○ Do you propose to conduct your research in an education setting as described in this RFA? Is this research relevant to education in the United States and does it address factors under the control of U.S. education systems?			
	○ Have you indicated a single topic for your application?			
	○ Have you indicated a single project type for your application?			
	• Does your Project Narrative include the four required sections and the associated requirements for the selected IES Project Type? Did you describe the elements required for each section?			
Required Project Narrative Elements				
	Exploration	Development and Innovation	Initial Efficacy and Follow-Up	Measurement
Significance	• the factors you will study	• the intervention you propose to develop or revise	• the intervention you propose to evaluate; and • for a Follow-Up study, the evidence from the original evaluation	• assessment you propose to develop, refine, or validate
Research Plan	• characteristics of your sample • research design and methods • data analysis plan	• characteristics of your sample • research design and methods for <ul style="list-style-type: none"> ▸ developing the intervention ▸ determining the intervention's promise for generating beneficial learner outcomes through a pilot study and ▸ cost analysis of implementing the fully developed intervention • data analysis plan	• characteristics of your sample • research design and methods • power analysis • data analysis plan In addition, for an Initial Efficacy study • cost analysis plan • cost-effectiveness analysis plan or a rationale for why a cost-effectiveness analysis cannot be done	• characteristics of your sample • research design and methods for <ul style="list-style-type: none"> ▸ developing or refining the assessment ▸ validating the assessment and ▸ determining the costs of administering and scoring the assessment • data analysis plan
Personnel	• project team	• project team	• project team	• project team
Resources	• resources to conduct the project	• resources to conduct the project	• resources to conduct the project	• resources to conduct the project