

Education Research Grant Program

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U.S. DEPARTMENT OF EDUCATION

A Product of the National Center for Education Research

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Part I: Overview and Requirements

A. Purpose of the Education Research Grants Program

Through its National Center for Education Research (NCER), the Institute of Education Sciences (IES) supports a sustained program of research to build knowledge and understanding of education practice and policy. The program's four intended outcomes are

1. Improved access to a high-quality education for all learners from early childhood through adulthood, particularly those at risk of failure
2. Improved academic achievement for all learners from early childhood through adulthood, particularly those at risk of failure
3. Reduced opportunity and achievement gaps between high-performing and low-performing learners
4. Improved access to, persistence in, progress through, and successful completion of postsecondary education

In this Request for Applications (RFA), NCER invites applications for research projects that will contribute to its Education Research Grants program (CFDA 84.305A). To encourage rigorous education research that is transparent, actionable, and focused on meaningful outcomes, all applications to the FY 2021 Education Research Grants program are expected to incorporate the principles outlined in the IES-wide Standards for Excellence in Education Research (SEER; <https://ies.ed.gov/seer/>), as applicable. These principles include

- Pre-registering studies
- Making research findings, methods, and data available to others
- Identifying core intervention components
- Documenting intervention implementation and contrast to inform use in other settings
- Analyzing costs
- Focusing on outcomes meaningful to learners' success (learning outcomes, opportunities in education, or success from education)
- Facilitating generalization of study findings
- Conducting research in a way that informs the future scaling of interventions

Collectively, IES-funded research should yield outcomes and products that are meaningful, inform stakeholders about the cost and practical benefits and effects of interventions (programs, policies, practices) on relevant outcomes for learners, and contribute to scientific knowledge and theory of teaching, learning, and organizing education systems. NCER expects researchers receiving funding through this program to disseminate evidence in a way that is useful to and accessible by educators, parents, policymakers, researchers, and the public.

B. Requirements

Applications to the Education Research Grants program **must meet these requirements** to be sent forward for scientific peer review.

1. Education Outcomes and Topics

NCER uses a topic structure to encourage focused programs of research and to provide opportunities for applicants to consult with NCER program officers (<https://ies.ed.gov/ncer/staff/stafflist.asp>) while preparing their applications. Your application must be directed to one of the 11 topics accepting applications in FY 2021. The topics are intentionally broad to encourage a wide range of innovative ideas and research questions. Research proposed under each topic may ask questions about the education outcomes of learners at any developmental or school level from prekindergarten through postsecondary and adult education. See the topic descriptions in [Part II Topics](#) for more about the purpose and IES-identified research needs for each. Contact the program officers listed by topic for advice on which topic provides the best fit for your proposed research.

(a) Academic Outcomes - Required for All Applications

Research proposed under each topic **must** measure academic outcomes of learners. In addition, two topics - Effective Instruction and Social and Behavioral Context for Academic Learning - require additional outcomes.

IES supports research on a diverse set of academic outcomes that reflect **learning and achievement** in content domains, as well as learners' **successful progression** through education systems. IES is interested in the following academic outcomes:

- For **prekindergarten**, school readiness outcomes, including pre-reading, language, vocabulary, early-STEM (science, technology, engineering, and/or mathematics) knowledge, English language proficiency, digital literacy, 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 literacy (including digital literacy), STEM, and social studies¹; English language proficiency; career and technical education (CTE) attainment²; and progression through education systems as indicated by course and grade completion, retention, high school graduation, and dropout.
- For **postsecondary education**, learning, achievement, and higher order thinking in postsecondary courses; and 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.

¹ Social studies outcomes are defined as a learner's understanding of government structures and processes and how to be an engaged and knowledgeable citizen through skills and knowledge in civics, citizenship, geography, history, and economics.

² CTE attainment is defined as an indicator of mastery of CTE content or skills such as CTE course grades or credits earned, technical skills, assessment scores, industry certification, or employment outcomes in a field related to the CTE training.

- For **adult education**,³ achievement in literacy, English language proficiency, and numeracy, as well as access to, persistence in, progress through, and completion of adult education courses and programs including the full range of course and program types described in Title II of the Work Innovation and Opportunity Act of 2015.

(b) Educator Outcomes - Required for Effective Instruction Applications

IES supports research that addresses the role of educators in understanding learners' academic outcomes. You **must** propose to measure educator knowledge, skills, beliefs, behaviors, and/or practices, in addition to the required measures of learners' academic outcomes, if you are applying under the [Effective Instruction](#) topic.

(c) Social and Behavioral Competencies - Required for Social and Behavioral Context for Academic Learning Applications

IES supports research on **social and behavioral competencies**, defined as social skills, attitudes/emotions, 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 measures of learners' academic outcomes, if you are applying under the [Social and Behavioral Context for Academic Learning](#) topic.

(d) Employment and Earnings Outcomes - As Appropriate

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. Include these outcomes in addition to the required academic outcomes when 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, and adult literacy programs run through community-based organizations. IES does not support research that is relevant only in

³ For the purposes of this RFA, *adult education* refers to the system and authorized providers that serve learners at least 16-years old who are not enrolled in the standard K-12 system but are or could be preparing for, transitioning into, or currently enrolled in adult literacy programs, as defined in Title II, the "Adult Education and Family Literacy Act", of the 2015 Workforce Innovation and Opportunities Act (WIOA), such as Adult Basic Education, Adult Secondary Education, Integrated Education Training, Family Literacy, Integrated English Language and Civics.

informal contexts outside of education systems. Contact an IES program officer if you have questions about the setting you have identified for your proposed research.

3. Project Types

IES supports the development and validation of measures for use by educators and education researchers, exploratory research, development and pilot testing of interventions, and efficacy trials that build a body of knowledge in the education sciences, along with the practical tools necessary to lead to meaningful change in education practice. All of these project types are necessary for generating evidence and solutions to improve education practice.

For FY 2021 your application **must** be directed to one of the following four project types:

[Measurement](#)

[Exploration](#)

[Development and Innovation](#)

[Initial Efficacy and Follow-Up](#)

See the [project type descriptions in Part III](#) for more information about each type's purpose, requirements that you must address in your application, and recommendations for a strong application. Program officers can advise 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 combining complementary quantitative and qualitative methods, as appropriate, to inform the research process for each project type.

IES may invite researchers funded through this competition to apply at a later date for funding to extend the data collection period in order to collect follow-up data on study participants. Applicants should plan for this possibility by proposing procedures to maintain contact with participants and ensuring IRB protocols are written to allow researchers to follow participants over time.

IES expects reviewers to assess the scientific rigor and practical significance of the research proposed in order to judge the likelihood that it will make a meaningful contribution to the larger IES mission. The peer reviewers will consider the rigor and practical significance of the research proposed according to the recommendations for strong applications that are provided for each project type by section (Significance, Research Plan, Personnel, and Resources) of the project narrative. The peer reviewers will also evaluate Dissemination under a separate review criterion.

If you propose a to evaluate an intervention with prior evidence of efficacy, you **must** apply under the separate Systematic Replication competitions offered through the National Center for Education Research (CFDA 84.305R; https://ies.ed.gov/funding/ncer_rfas/systematic_replications.asp) or the National Center for Special Education Research (CFDA 84.324R; https://ies.ed.gov/funding/ncser_rfas/ncser_systematic_replications.asp), as appropriate.

4. Dissemination History and 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; <https://ies.ed.gov/funding/researchaccess.asp>). 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 so that the findings make meaningful contributions to education policy and practice. In addition, applicants are asked to describe their dissemination history to demonstrate their ability and capacity to disseminate research findings to a range of audiences, including educators, policymakers, parents, and the general public.

Peer reviewers will score Dissemination as a separate criterion in the review process. **Applications that do not contain a Dissemination History and Plan in Appendix A will not be peer reviewed.**

5. Award Limits

Applications to the Education Research Grants program **must** conform to the following limits on award duration and cost by Project Type. Budgets should align with proposed project activities. For all project types, if you propose research that relies on analysis of existing data sets and will not involve new data collection, the proposed budget should be reduced commensurately.

IES Project Type	Maximum Duration	Maximum Cost
Measurement	4 years	\$2,000,000
Exploration	4 years	\$1,700,000
Development and Innovation	4 years	\$2,000,000
Initial Efficacy and Follow-Up	Initial Efficacy: 5 years	\$3,800,000
	Follow-Up: 3 years	\$1,500,000

C. Getting Started

1. 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) on the IES Review webpage (<https://iesreview.ed.gov/LOI/LOISubmit>), a program officer will contact you regarding your proposed project. IES also provides funding opportunities resources, including webinars, (<https://ies.ed.gov/funding/webinars/index.asp>) that include advice on choosing the appropriate competition, grant writing, and submitting your application.

2. Eligible Applicants

Institutions that have the ability and capacity to conduct rigorous 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, Asian American and Native American Pacific Islander-Serving Institutions, Hispanic-Serving Institutions, Historically Black Colleges and Universities, Predominantly Black Institutions, and Native American-Serving, Nontribal Institutions.

The Principal Investigator: The applicant 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 this person should be listed as the PI. All other PIs should be listed as co-principal investigators.

3. RFA Organization and the IES Application Submission Guide

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. [Part I](#) sets out the 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 general formatting and the 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**. [Part VII](#) provides the topic and project type codes that you must enter in Item 4b of the SF 424 Application for Federal Assistance form.
2. *The IES Application Submission Guide* (<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.

4. Ensuring Your Application is Forwarded for Scientific Peer Review

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.

(a) On-time submission

See the separate IES Application Submission Guide
(<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 20, 2020.

(b) Compliance

- Includes the **required project narrative** (see [Part III](#))
- Adheres to all formatting requirements (see [Part IV](#))
- Adheres to all page limit maximums for the project narrative and appendices. IES will remove any pages above the maximum before forwarding an application for scientific peer review
- Includes all **required appendices** (see [Part IV](#))
 - [Appendix A: Dissemination History and Plan](#) (All applications)
 - [Appendix B: Response to Reviewers](#) (Resubmissions only)
 - [Appendix F: Data Management Plan](#) (Exploration and Initial Efficacy and Follow-Up applications only)

(c) Responsiveness

- Meets **requirements** for all applications (see Parts I, II, and III)
 - [Education Outcomes \(by Topic\)](#)
 - [Education Settings](#)
 - [IES Project Type](#)
- Meets **Project Narrative Requirements** for the selected *IES Project Type* (see [Part III](#)).

D. Changes in the FY 2021 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 2021 are listed below and described fully in relevant sections of the RFA.

- **Page limits, including reduction in project narrative length, and formatting guidelines.** IES has page limits for the project narrative and some appendices. If the project narrative or an appendix exceeds the limits discussed in this RFA, IES will remove any pages after the maximum for the project narrative or appendix. IES also has formatting guidelines, as discussed in [Part IV.B](#) that applicants must attend to.
- **Expanded education outcomes.** IES has expanded the definition of academic outcomes to include digital literacy; attainment in CTE; and learning, achievement, and higher order thinking in civics and social studies.
- **Required educator outcomes.** The Effective Instruction topic now requires educator outcomes in addition to the required academic outcomes.

- **Reordering of Project Types.** IES has reordered the presentation of the Project Types. We now list Measurement as the first project type to reinforce the foundational nature of measurement work and measurement tools to education research. By listing Measurement as the first Project Type, IES encourages applicants to focus more carefully on the opportunities afforded to education researchers through Measurement projects and to be more mindful of the fact that high-quality exploration, development, and efficacy research can only be done with high-quality instruments and measures.
- **Cost analysis clarification for Measurement, Development and Innovation, and Initial Efficacy and Follow-Up grants.** IES has clarified requirements for cost analyses that must be proposed for Development and Innovation and Initial Efficacy projects to provide helpful information about the cost of implementing interventions. Cost analysis was removed from the requirements for Measurement projects, but applicants are encouraged to propose a cost analysis when appropriate.
- **Data Management Plan now required for Exploration projects.** IES now requires a data management plan for Exploration projects in addition to Initial Efficacy and Follow-Up projects.
- **IES has increased the maximum award amounts across all project types.** These changes were made due to IES's recognition that as new requirements have been added, funding should increase to support these additional activities for each project type (including data sharing for Exploration projects; cost analyses for Development and Innovation and Initial Efficacy and Follow-Up; and Dissemination to a wide range of audiences for all project types).
- **Changes in Topics:**
 - **Education Technology is no longer a standalone topic.** Technology is ubiquitous in education and intersects with every other topic area. Education technology is a tool to improve academic achievement, just like a workbook or an instructional approach. Education technology can also be a critical aspect of scaling efficacious interventions. Applicants across all topic areas should consider whether or not technology would be an effective way to address the education issue on which they are choosing to focus given that it is now pervasive in classrooms. If you intend to develop or evaluate an education technology product, apply to the topic area that is most closely aligned with the proposed research.
 - **Applicants should consider English learners as distinct subgroups when appropriate and feasible.** IES has added language throughout the RFA to make it clear that applicants should consider how to support English learners when appropriate and feasible to do so. In particular, applicants should analyze English learners as a distinct subgroup as part of their proposed research plan if there are significant numbers of English learners in their sample.
 - **IES added a new topic, Civics Education and Social Studies,** to increase our investment in learning and achievement in this academic domain.
 - **The topic name for Reading and Writing has been changed to *Literacy*** to clarify the need for research on the range of English language-based skills required for learning, including listening, speaking, and online forms of communication.

- **Applicants whose primary research focus is postsecondary learners with disabilities must apply to the National Center for Special Education Research (NCSEER) Special Education Research Grants program (CFDA 84.324A; <https://ies.ed.gov/ncser/research/grantsProgram.asp>).** Applicants whose study participants include a subgroup of postsecondary learners with disabilities may apply through NCER's Postsecondary and Adult Education topic area. Applicants interested in learners with or at risk for disabilities who could qualify for adult education services or are receiving such services must apply through NCER's Postsecondary and Adult Education topic area.
- **Length of Abstract has increased.** IES now requests a two-page project summary/structured abstract instead of a one-page abstract. See [Part IV.D.1.](#) for details about what to include in your abstract.
- **Changes due to COVID-19.** IES encourages applicants to submit letters of agreement to participate in the proposed research from education setting partners as an appendix to the required project narrative. IES understands that, due to school closings associated with COVID-19, you may have difficulty providing letters from schools, districts, and other education sites that would participate in or provide data for the proposed research. If you are unable to provide these letters in your application, include a description in [Appendix E](#) of why you were not able to obtain letters and your plan for securing them if your application is recommended for funding. NOTE: Special conditions may be placed on the grant awards if these letters are not received before the award date. Reviewers will be instructed to not penalize applicants for failure to include letters of agreement due to the coronavirus pandemic.
- **Changes to dissemination plan and a new dissemination review criterion.** Peer reviewers will now consider Dissemination as a separate review criterion. Reviewers will consider team members' experience disseminating research findings and products from past projects to a range of audiences in addition to applicants' plans for disseminating the findings of the proposed study.

Part II: Topics

A. Applying to a Topic

For the FY 2021 Education Research Grants program, you **must** submit to one 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, (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>, and the [topic codes in Part VII](#)), 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 requirements** outlined in [Part I.B: Requirements](#)
- **The relevant project type requirements** listed under [Part III: Project Type Requirements and Recommendations](#)

IES supports field-generated research that addresses a range of issues within each topic. Each topic includes a link 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. These are pressing problems in education, but applicants are encouraged to think broadly about the needs of learners, as well as of potential avenues for assessment, exploration, intervention development, and efficacy testing. 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.

Most applications to the Education Research Grants Program are reviewed by one of seven standing peer review panels (<https://ies.ed.gov/director/sro/reviewers.asp>) (which may have multiple sections). Additional panels are developed each year as needed to provide the most appropriate review for all applications.

- 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 (https://ies.ed.gov/director/sro/application_review.asp) and [Part V.C.4 Scientific Peer Review Process](#) for more information.

If you propose to conduct research focused on learners with disabilities from birth through K-12 or in postsecondary education, you **must** apply to the separate grant programs run by the National Center for Special Education Research (NCSE; <https://ies.ed.gov/ncser>). For research focused on learners with or at risk for disabilities in adult education settings, you **must** apply to any NCER topic. Please contact an IES program officer to discuss the funding opportunity and topic for your postsecondary 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; <https://ies.ed.gov/ncer/projects/program.asp?ProgID=100>) supports research on the implementation and effects of CTE programs and policies on education and career outcomes. Research on CTE is needed to answer 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 including mastery of CTE content or skills as indicated by course grades or credits earned, technical skills, assessment scores, industry certification, or associated labor market outcomes in a field related to the CTE training.

(b) Needed Research

Below are examples of research that have the potential to lead to important advances in the field.

- 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, as well as the impact of these factors on learner outcomes
- Research on new initiatives being implemented since the reauthorization of the Carl D. Perkins Act in 2018, which introduced new requirements for states and districts regarding CTE program planning and implementation, and research on which initiatives show promise for CTE student achievement and attainment

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. Civics Education and Social Studies

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

(a) Purpose

Civics Education and Social Studies supports research to improve learners' knowledge, skills, and attitudes to understand complex social and economic issues. Recently, the Every Student Succeeds Act (2015) expanded the curricular focus of U.S. education to encourage states to include social studies and its core disciplines of civics, geography, economics, and history as part of 17 subjects that make up a well-rounded education. The 2018 NAEP found that only 15 percent of eighth graders performed at or above Proficient in U.S. History, 25 percent performed at or above Proficient in Geography, and 24 percent performed at or above Proficient in Civics. To better support learners in these areas, research is needed to identify ways of supporting students' understanding of social studies and civics topics as well as the intellectual skills that underlie success in these areas, such as identifying and describing important information, explaining and analyzing it, and evaluating information and defending positions with appropriate evidence and careful reasoning.

(b) Needed Research

Below are examples of research that have the potential to lead to important advances in the field.

- Development and testing of social studies and civics interventions that actively engage students through forms of experiential and collaborative activities, such as through roleplaying, debates, inquiry and investigation, real-world problem solving, and service learning
- Development and testing of interventions designed to support students in becoming digitally literate citizens in the 21st century, including those which integrate new forms of technology within social studies programs, such as social media, multi-user virtual environments, virtual and augmented reality, and wearables
- Development and validation of new and existing measurement tools for use in social studies and civics education programs

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. Cognition and Student Learning

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

(a) Purpose

Cognition and Student Learning (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=5>) 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 literacy and STEM, and successful progression through education systems.

(b) Needed Research

Below are examples of research that have the potential to lead to important advances in the field.

- Measurement tools that can validly and reliably capture cognitive skills that underlie reading, writing, and STEM achievement
- 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.
- Exploratory research to identify the cognitive supports that would improve learning for specific populations of students such as English Learners
- Examination of groups of learning principles to identify optimal ways to implement them in classrooms (for example, what are the best ways to combine principles in order to achieve the largest impact on learners?)

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. Early Learning Programs and Policies

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

(a) Purpose

Early Learning Programs and Policies (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=7>) 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 help reduce the sociodemographic academic achievement gap that often exists when children from low-income families begin formal schooling. Through this topic, IES supports research on children's immediate outcomes from center-based early learning programs and policies. Consistent with SEER principles IES is particularly interested in the long-term outcomes of early learning interventions.

(b) Needed Research

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 and later school achievement (for example, 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 school readiness
- Development of valid, reliable, and affordable measures of PreK program quality and classroom process quality associated with children's school readiness
- Development of valid, reliable, and affordable measures that assess school readiness across multiple domains with a diverse population of children (for example, dual language learners) that are reliably and easily administered by practitioners

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 (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=75>) supports research to understand the features of instructors and instruction that promote academic outcomes. For this reason, measures of educator outcomes must be included along with the required measures of student 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 increasing. 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

Below are examples of research that have the potential to lead to important advances in the field.

- Research on pre-service training and measurement of its critical elements. The field would benefit from research exploring which elements of pre-service training such as candidate selection criteria, specific coursework, and supervised field experiences are associated with student academic outcomes (for example, how does the timing, duration, and student population of the supervised field experience predict student learning in the instructor's first classroom post-hire?)
- Research on the specific knowledge and skills instructors need to promote learning
- Research on the basic cognitive processes of professional learning and the developmental sequence of skills necessary for teaching (for example, 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.)
- Research on the skills educators need in order to provide effective instruction to learners from various backgrounds, 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

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. Helyn Kim (202-245-6890; Helyn.Kim@ed.gov)

(a) Purpose

English Learners (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=59>) supports research to improve academic outcomes and reduce the academic achievement gap for English learners. IES uses the term *English learner* (EL) under a broad definition encompassing 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

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.
- What are the best ways to measure ELs’ content knowledge in the academic areas? 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 decision-making 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 (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=76>) supports research to understand which specific education 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. Therefore, research through this topic should carefully examine the implementation of practices or policies to understand the mechanisms behind their effects. Information about *how* education systems support academic achievement is critical for successful implementation of beneficial education policies and programs in other contexts.

(b) Needed Research

Below are examples of research that have the potential to lead to important advances in the field.

- Prior research has shed light on which education policies have the potential to improve learner outcomes but has not always illuminated the key components of policy implementation. Often, a policy change in a state or district based on prior evidence of effectiveness does not produce the expected outcomes because not enough information was known about the key practices, individuals, timing, dosage, and other details for educators to implement changes successfully. Research using an implementation science approach is encouraged.
- The COVID-19 pandemic introduced myriad, sudden challenges to our education system. Research is needed on how districts have responded and how responses are related to learner outcomes, how instruction can be organized if COVID-19 continues to affect schooling, how learning can be assessed if COVID-19 continues to interrupt traditional end-of-year assessments, and the short- and long-term effects of pandemic-related educational changes on learners.
- Many states have created new accountability systems in response to ESSA. Are these helping education leaders understand how their efforts in areas such as school finance, low-performing schools, curricula and instructional standards, and leadership and governance are improving learner outcomes?
- How have states, education systems, and education programs implemented recent laws such as the Workforce Innovation and Opportunity Act (WIOA) and the Strengthening Career and Technical Education for the 21st Century Act (Perkins V)? How are these system-level adaptations affecting learner outcomes?
- What system-level approaches reduce the achievement and attainment gaps that exist for specific subgroups of learners at high risk for education failure? These include learners who are minorities, economically disadvantaged, English learners, and highly mobile students such as migrants, those in foster care, and children of military families.
- State and local education officials make daily decisions about how to hire, place, train, and evaluate school leaders. What training interventions and practices are effective for improving school leader outcomes in ways that subsequently improve learner outcomes? Are measures to assess leadership skills and behaviors valid?

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- 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. Literacy

Program Officer: Dr. Vinita Chhabra; Vinita.Chhabra@ed.gov

(a) Purpose

Literacy (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=18>) supports research on the range of English language-based skills required for learning. U.S. students must develop fluency not only in reading and writing in English but also in speaking and listening in English, and they must be able to apply these skills across multiple contexts, including classrooms and online. Reading has dominated literacy research for over 50 years, and we have made progress in theory and empirical evidence. However, many students in the United States are still not proficient readers, and this difficulty can persist well into adulthood. Recent NAEP assessments (<https://nces.ed.gov/nationsreportcard/reading/>) 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; <https://nces.ed.gov/surveys/piaac/>) indicate that nearly 20 percent of U.S. adults perform at the lowest levels of literacy. With the advent of new written forms of communication, such as online forums, reading research will continue to be important. At the same time, the other modes of literacy - writing, listening, and speaking - also require attention. Learners develop interpersonal competencies, critical thinking, and other important academic skills through these uses of language, yet we understand little of what these uses are, how to measure their growth, what their impact on student outcomes may be, or how to assist learners or educators in developing them.

(b) Needed Research

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 is reading or writing online or with digital devices related to learning outcomes?
- Education technology is being used to support learners in a variety of academic areas. How can technology be leveraged to improve reading and writing skills? Can technology be leveraged for more effective reading and writing instruction? How can technology be used to support literacy outcomes for English learners?
- 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 such literacy 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.

9. 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 (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=15>) supports research to improve access to, persistence in, progress through, and completion of postsecondary and adult education programs, including the full range of adult literacy activities described in Title II of the Work Innovation and Opportunity Act (WIOA), 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

Below are examples of research that have the potential to lead to important advances in the field.

- Developing and testing initiatives that help all learners complete marketable degrees and credentials and transition into rewarding occupations
- Understanding how debt and debt aversion affect students' progression through postsecondary education and whether these adverse effects can be alleviated through strategies such as promise scholarship programs, connecting students with support services, such as mentors and counseling, or emergency financial aid
- Supporting postsecondary and adult education teaching staff to use evidence-based instructional practices
- Developing and testing curriculum reform strategies such as using co-requisite remediation instead of developmental course sequences, incorporating competency-based approaches to assessment, creating clear pathways to degree completion, or offering integrated education and training programs with adult education learners
- Assessing efforts by systems, institutions, and programs to facilitate progress through postsecondary or adult education programs, 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
- Supporting English learners in postsecondary and adult education settings
- Supporting learners with disabilities in adult education programs to improve their skills or to persist in or complete their programs

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.

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

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

(a) Purpose

STEM Education (<https://ies.ed.gov/ncer/projects/program.asp?ProgID=12>) supports research on the improvement of STEM knowledge and skills. Over the past 25 years or so, 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 today's workplace. Current levels of STEM achievement at the elementary and secondary levels and into postsecondary suggest that the United States is not adequately preparing learners with the levels of STEM knowledge and skills necessary for success in the workplace.

(b) Needed Research

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 computer science programs and practices benefit learning? 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 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

(<https://ies.ed.gov/ncer/projects/program.asp?ProgID=21>) supports research on social and behavioral competencies that improve 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

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? And how would we know if that improved academic success in the long run?
- Valid measures of social and behavioral competencies that predict academic outcomes 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.
- Research is needed to develop and test new approaches to discipline that provide access to teaching and learning for all students regardless of race and ethnicity, gender, or disability status.
- As a whole, English learners in the United States are a diverse group who speak over 400 different languages and include learners from a variety of cultural and ethnic backgrounds. Research is needed to develop and test programs and practices to support the social behavioral needs of this diverse population and their educators.

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 2021 Education Research Grants program, you **must** submit under one of four project types: Measurement, Exploration, Development and Innovation, and Initial Efficacy and Follow-Up. If you propose to evaluate an intervention with prior evidence of efficacy, you must apply under the separate Systematic Replication competitions offered through the National Center for Education Research (CFDA 84.305R; https://ies.ed.gov/funding/ncer_rfas/systematic_replications.asp) or the National Center for Special Education Research (CFDA 84.324R; https://ies.ed.gov/funding/ncser_rfas/ncser_systematic_replications.asp), as appropriate.

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, <https://ies.ed.gov/funding/pdf/submissionguide.pdf> and the [project type codes in Part VII](#)), 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.
- **See the Requirements section** for the specific content that you must address in the project narrative in order to be sent forward for 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 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/>) to ensure that research is transparent, actionable, and focused on meaningful outcomes that have the potential to dramatically improve education.
- IES encourages the use of mixed methods research, defined as the integration of qualitative and quantitative data, for all project types.

B. Measurement

1. Purpose

Measurement supports both the development and validation of new or modified instruments for use by educators or education researchers. Some Measurement projects will result in instruments that have been validated for use with specific populations in specific contexts to support education practice and policy. Other Measurement projects will result in instruments for use by education researchers. Both types of instruments are needed to ensure that high-quality measurement tools are available to support rigorous exploratory, development, and efficacy research.

Successful Measurement projects will result in the following –

- A fully developed version of the instrument with clear item specifications and procedures and materials for administration, including evidence of usability and feasibility, to support IES's focus on meaningful outcomes (see <https://ies.ed.gov/seer/outcomes.asp>)
- Information about the validity of the instrument for specific purposes, populations, and contexts

2. Requirements

(a) Project Narrative

The project narrative **must** adhere to the formatting guidelines (see [Part IV.B](#)) and be **no more than 22 pages**. If the narrative exceeds this page limit, IES will remove any pages after the 22nd page of the narrative. The project narrative for a Measurement project application **must** include four sections: Significance, Research Plan, Personnel, and Resources.

(1) Significance

The purpose of this section is to explain the importance of developing and/or validating the instrument for the proposed context and population and why results will be important to disseminate to researchers, policymakers, and practitioners.

You **must describe** the instrument you propose to develop, refine, and/or validate.

(2) Research Plan

The purpose of this section is to describe the methodology you will use to develop and/or refine the instrument (if applicable), document its validity, and establish its connection to education outcomes.

You **must describe** the

- characteristics of your sample
- research design, methods, and data analysis plans for the instrument's
 - development and/or refinement, as applicable
 - validation

(3) 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.

(4) 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.

(a) Duration Maximums

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

(b) Cost Maximums

The maximum cost for a Measurement award is **\$2,000,000** (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.

(a) Significance

Describe the specific need for developing, refining, and/or validating the instrument and the potential market for such an instrument.

- Contrast the instrument with current typical measurement practices. What differentiates it and how does it address shortcomings of other instruments?
- Discuss the potential markets where the new/refined measurement tool will be offered and examples of how it will be used. Describe your strategy for bringing the instrument to those markets and users.
- 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).

Describe the construct or education outcome the proposed instrument will measure.

Identify the age range, if applicable, the proposed instrument will be used with.

Describe the intended users of the instrument (for example, researchers, teachers, learners) and the intended uses of the data collected with it.

Discuss the significance of your proposed work. How will the proposed instrument(s) address the Education Research Grants program's intended outcomes? How will the proposed instrument(s) improve education research, education policy, and/or classroom teaching?

Describe any partnerships with education agencies to carry out the proposed work. Including education agencies as partners ensures that researchers focus on outcomes that are meaningful to education practitioners and policymakers.

Describe the instrument framework and explain how the proposed validation activities will produce evidence to support the claims of the instrument framework.

A strong instrument 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 instrument provides evidence of the construct(s) identified in the rationale
- Description of the rationale for how and why a respondent's score on the instrument supports inferences or judgments regarding the construct(s) being measured
- Description of the intended use(s) and population(s) for which the instrument is meant to provide valid information

If you are applying for a second Measurement award to further develop or validate an instrument that was the focus of a previous Measurement award, justify the need for a second award. Describe the results and outcomes of the previous award, including the status of the instrument, its validation, and whether it is currently being used in the field. If it is not being used, explain why.

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 this Measurement study.

(b) Research Plan

Specify the research questions and how they are motivated by the information provided in your Significance section.

Provide a timeline for each step in your project including such actions as item development and item calibration (if proposing new or modified items), sample recruitment, data collection, validation activities, data analysis, 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.

(1) Sample and Setting

Discuss the procedure you will use to recruit a sample that represents your target population.

Describe the setting(s) in which the research will take place (provide Letters of Agreement in [Appendix E](#)) and discuss how they will allow you to draw conclusions about the education settings your research is intended to inform.

Describe and justify exclusion and inclusion criteria and discuss how they will affect your ability to generalize to the target population.

Describe strategies to reduce attrition, if applicable.

(2) Research Design and Methods

Describe the research design with enough detail to demonstrate that it will address the research questions.

Iterative development process:

If you propose to develop a new instrument or to refine an existing instrument, then describe the following:

- The procedures for scoring the instrument, including justification for the scoring rubric and any weighting involved in calculating the score
- The iterative procedures for developing, field testing, and selecting items to be used in the instrument and for obtaining representative responses to items
- The statistical procedures for demonstrating that items adequately measure the intended construct(s) (for example, via factor analysis) and that the items measure only the intended construct(s)
- The procedures for establishing whether the items and the instrument as a whole are biased against groups within the intended population of use (that is, tests for differential item functioning, differential test functioning, and corresponding follow-up tests for bias)
- The process of determining the administrative procedures for using the instrument, such as mode of administration, whether accommodations like alternative administrative conditions will be allowed, and whether administration is feasible in the intended context(s)
- The procedures for establishing the equivalency of the forms, if developing alternate forms
- The procedures for statistically evaluating the validity of each subscale, if subscales are part of the assessment framework
- The procedures for establishing an instrument that is vertically equated, if the proposed instrument is used to measure growth

Validation activities:

Describe the proposed validation activities with enough detail to demonstrate that they will provide evidence to address the claims of the instrument framework.

Identify the types of validity evidence to be collected, such as construct validity, concurrent validity, and discriminant validity. Provide justification for the adequacy of the selected types of evidence to support use of the instrument for the proposed purpose(s), population(s), and context(s).

Cost analysis plan:

If the instrument you propose to develop is intended for use by educators and education systems, you are encouraged to develop a cost analysis plan (https://ies.ed.gov/seer/cost_analysis.asp) that describes how you will estimate the costs for educators and education systems to implement the fully developed and/or validated instrument.

You may already have an estimated cost for your instrument, or you may plan to make your instruments available to schools at no cost. Regardless, you should consider including a plan for determining the cost of the instrument. The plan includes a discussion of how you will do the following:

- Determine the resources used by the instrument—whether these resources are related to personnel, facilities, equipment, materials, training, or other things—and describe the resources' characteristics (quality) and quantity.
- Price each resource - determine their actual or estimated cost. If any entity, including the project, will provide a resource for free or at a reduced cost, you should use the resource's real cost (what it would cost if there were no subsidy).

- Calculate the cost of the fully developed instrument (total the cost of the resources).
- Test your assumptions (sensitivity analysis).

If you already have an estimate of the cost of the instrument, you should still include a plan to calculate the actual costs when implemented.

If you intend to offer the instrument free of charge, you should still include a cost analysis plan.

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 inferential analyses for which decisions will be based on statistical significance.

Describe any subgroup analyses that will be conducted to examine learners from diverse backgrounds and experiences within your sample and what your findings will mean for the heterogeneity of the target population you have identified.

(c) Personnel

Identify and describe expertise and qualifications of the project team at the primary applicant institution and at any subaward institutions.

In its research grant programs, IES is interested in including individuals from groups that have typically been underrepresented in the education sciences. Describe the backgrounds and experiences of project team members in light of this.

Describe how the background and experience of the project team supports the successful conduct of the proposed work.

Describe which members of the project team will carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

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
- Proportion of time personnel will devote to the project, expressed as percent effort over a 12-month calendar year

(d) 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.

IES is interested in using platforms to develop and validate new measurement tools. Letters of agreement from platform developers are strongly recommended if using platforms.

Describe your resources, including access to specific offices and organizations, to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

You **must describe** the

- characteristics of your sample
- research design and methods
- data analysis plan

(3) 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.

(4) 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 findings.

You **must describe** your resources to conduct the project.

(b) Data Management Plan

All Exploration 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 Exploration **must** conform to the following limits on duration and cost. If you propose research that relies on analysis of existing data sets and will not involve primary data collection, the proposed budget should be reduced commensurately. 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.

(a) Duration Maximums

The maximum duration of an Exploration award is **4 years**.

(b) Cost Maximums

The maximum cost for an Exploration award is **\$1,700,000** (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.

(a) 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 between the factors of interest and learner outcomes.

Discuss the significance of your proposed work. How will the proposed study address the Education Research Grant program's intended outcomes? How will the results affect policy or practice? How will the results inform future education research?

Describe any partnerships with education agencies to carry out the proposed work. Including education agencies as partners ensures that researchers focus on outcomes that are meaningful to education practitioners and policymakers.

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.

(b) 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.

(1) Sample and Setting

Discuss the procedure you will use to recruit a sample that represents your target population.

Describe the setting(s) in which the research will take place (provide Letters of Agreement in [Appendix E](#)) and discuss how they will allow you to draw conclusions about the education settings your research is intended to inform.

Describe and justify exclusion and inclusion criteria and discuss how they will affect your ability to generalize to the target population.

Describe the population of learners that your sample represents. Explain how your work with this sample will contribute to a larger body of knowledge on what works, for whom, and under what conditions, and how learners from diverse backgrounds and experiences, including those in your proposed study, will be represented in this larger knowledge base. IES does not expect individual projects to be generalizable to the U.S. population as a whole; instead, your target population may

represent a very narrow segment of the larger U.S. population. Describe strategies to reduce attrition, if applicable.

For all quantitative inferential analyses, demonstrate that the sample provides enough power to address your research questions.

(2) 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 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 and 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.

(3) Data Analysis Plan

Describe how you will determine whether the findings from your sample represent the larger population by contrasting your sample's characteristics with the characteristics of the target population. Describe your plans for adjusting for any mismatch between your sample and the target population. IES does not expect individual projects to be generalizable to the U.S. population as a whole; instead, your target population may represent a narrow segment of the U.S. population.

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.

Describe any subgroup analyses that will be conducted to examine learners from diverse backgrounds and experiences within your sample and what your findings will mean for the heterogeneity of the target population you have identified

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.

(c) Personnel

Identify and describe expertise and qualifications of the project team at the primary applicant institution and at any subaward institutions.

In its research grant programs, IES is interested in including individuals from groups that have typically been underrepresented in the education sciences. Describe the backgrounds and experiences of project team members in light of this.

Describe how the background and experience of the project team supports the successful conduct of the proposed work.

Describe which members of the project team will carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

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
- Proportion of time personnel will devote to the project, expressed as percent effort over a 12-month calendar year

(d) 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 specific team members, offices, or organizations that will support dataset documentation and execution of the data management plan

IES is interested in using platforms to conduct exploratory studies. Letters of agreement from platform developers are strongly recommended if using platforms.

Describe your resources, including access to specific offices and organizations, to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

(e) Data Management Plan (DMP)⁴

When the PI and the AOR sign the cover page of the grant application, they will be assuring compliance with IES policy on data sharing as well as other policies and regulations governing research awards. Once the DMP is approved by IES, the PI and the institution are required to carry it out and to report progress and problems through the regular reporting channels. Compliance with IES data sharing requirements is expected even though the final dataset may not be completed and prepared for data sharing until after the grant has been completed. In cases where the PI/grantee is non-compliant with the requirements of the data sharing policy or DMP, subsequent awards to individuals or institutions may be affected. 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:

- Identification of the data repository where you will pre-register your study within the first year of the project, following the Standards for Excellence in Education Research (SEER; <https://ies.ed.gov/seer/preregistration.asp>)
- 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

⁴ Resources that may be of interest to researchers in developing a data management plan can be found on the IES website (<https://ies.ed.gov/funding/researchaccess.asp>).

- Expected schedule for data sharing, including how long the data will remain accessible (no later than publication of findings in a peer-reviewed publication and available for 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 sharing, 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 shared. (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 review process but your DMP is determined incomplete, you will be required to provide additional detail regarding your DMP.

D. 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.

Successful Development and Innovation projects will result in (see <https://ies.ed.gov/seer/>) -

- A fully developed version of the intervention with clear specifications of core components and all procedures and materials, including fidelity measures and evidence of usability and feasibility, to support testing and scaling of promising results
- Pilot data that speak to the intervention's promise for generating meaningful outcomes
- Information about the costs associated with implementing the fully developed intervention

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

(a) Project Narrative

The project narrative **must** adhere to the formatting guidelines (see [Part IV.B](#)) and be **no more than 22 pages**. If the narrative exceeds this page limit, IES will remove any pages after the 22nd page of the narrative. The project narrative for a Development and Innovation project application **must** include four sections: Significance, Research Plan, Personnel, and Resources.

(1) 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.

(2) 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 targeted outcomes, including measuring the costs to implement at the level of fidelity necessary for those outcomes.

You **must describe** the

- Characteristics of your sample
- Research design, methods, and data analysis plans
 - For developing the intervention
 - For determining the intervention's usability and feasibility
 - For determining the fully developed intervention's promise for generating beneficial learner outcomes through a pilot study
- Cost analysis plan for determining the costs associated with implementing the fully developed intervention in the context of the pilot study

(3) 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.

(4) 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.

(a) Duration Maximums

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

(b) Cost Maximums

The maximum cost for a Development and Innovation award is **\$2,000,000** (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.

(a) 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 scale up potential of your intervention to different populations and contexts.

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 proposed study address the Education Research Grant program's intended outcomes? How will the results inform education research? Will the results have implications for practitioners and policymakers?

Describe any partnerships with education agencies to carry out the proposed work. Including education agencies as partners ensures that researchers focus on outcomes that meaningful to education 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.

(b) Research Plan

Specify your research questions and how they are motivated by the information provided in your significance section.

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.

(1) Sample and Setting

Discuss the procedure you will use to recruit a sample that represents your target population.

Describe the setting(s) in which the research will take place (provide letters of agreement in [Appendix E](#)) and discuss how they will allow you to draw conclusions about the education settings your research is intended to inform.

Describe and justify exclusion and inclusion criteria and discuss how they will affect your ability to generalize to the target population.

Describe the population of learners that your sample represents. Explain how your work with this sample will contribute to a larger body of knowledge on promising interventions and how learners from diverse backgrounds and experiences, including those in your proposed study, will be represented in this larger knowledge base. IES does not expect individual projects to be generalizable to the U.S. population as a whole. Instead, your target population may represent a very narrow segment of the larger U.S. population.

Describe strategies to reduce attrition, if applicable.

Describe the settings in which the different phases of the development work (iterative development, usability and feasibility testing, pilot testing) will take place—including the size and characteristics of the schools (or other education settings), intervention sites, 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.

Describe how you will determine whether the findings from your sample represent the larger population by contrasting your sample's characteristics with the characteristics of the target population. Describe your plans for adjusting for any mismatch between your sample and the target population.

(2) Research Design and Methods

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. IES is interested in using digital learning platforms to develop interventions.

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. IES is interested in using digital learning platforms to test interventions.

Identify the measures you will use to assess the 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 analysis plan:

Describe how you will determine the cost of the fully developed intervention and its implementation during the pilot study (for an introduction see the *IES Cost Analysis Starter Kit* at https://ies.ed.gov/seer/cost_analysis.asp). You may already have an estimated cost for your intervention, or you may plan to make your intervention available to schools at no cost. Regardless, your application must include a plan for determining the cost during the pilot study. The plan should include a discussion of how you will do the following:

- Determine the resources used by the intervention—whether these resources are related to personnel, facilities, equipment, materials, training, or other things—and describe the resources' characteristics (quality) and quantity.
- Price each resource - determine their actual or estimated cost. If any entity, including the project, will provide a resource for free or at a reduced cost during the pilot study, you should use the resource's real cost (what it would cost if there were no subsidy).
- Calculate the cost of the fully developed intervention (total the cost of the resources).
- Test your assumptions (sensitivity analysis).

If you already have an estimate of the cost of the intervention, you still must include a plan to calculate the actual costs when implemented during the pilot study.

If you intend to offer the intervention free of charge, you must still include a cost analysis plan as part of the pilot study.

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. We encourage the use of widely used common measures of learner outcomes to facilitate the field's ability to synthesize findings across studies.

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:

Describe how you will measure the generalizability of your findings by contrasting your sample's characteristics with the characteristics of the target population. Describe your plans for adjusting for any mismatch between your sample and the population.

Describe any subgroup analyses that will be conducted to examine outcomes for learners from diverse backgrounds and experiences.

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.

Describe how you will identify key processes that may affect the implementation of your intervention in other venues.

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.

(c) Personnel

Identify and describe expertise and qualifications of the project team at the primary applicant institution and at any subaward institutions.

In its research grant programs, IES is interested in including individuals from groups that have typically been underrepresented in the education sciences. Describe the backgrounds and experiences of project team members in light of this.

Describe how the background and experience of the project team supports the successful conduct of the proposed work. Identify and describe the expertise of the key personnel responsible for

- the iterative design process
- the usability and feasibility study
- the pilot study
- the cost analysis

Provide a plan for how key personnel will maintain their objectivity in conducting the proposed research and dissemination activities.

Describe which members of the project team will carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

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
- Proportion of time personnel will devote to the project, expressed as percent effort over a 12-month calendar year

(d) 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.

IES is interested in using platforms to develop and test new interventions. Letters of agreement from platform developers are required if using platforms.

Describe your resources, including access to specific offices and organizations, to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

E. Initial Efficacy and Follow-Up

1. Purpose

Initial Efficacy and Follow-Up supports initial efficacy studies of education interventions predicted to have a meaningful effect on important education outcomes using designs that meet the IES What Works Clearinghouse (WWC) design standards⁵ (<https://ies.ed.gov/ncee/wwc/Handbooks>) 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, and its contribution to future research.

IES is interested in studies of interventions that can reasonably be expected to have meaningful effects on important education outcomes. IES expects applicants to describe and justify the effect sizes that they anticipate for the interventions they propose to evaluate.

Successful Initial Efficacy and Follow-Up projects will result in the following (see <https://ies.ed.gov/seer/>) -

- Evidence regarding the impact of a fully developed intervention on learner outcomes relative to a comparison condition
- Documentation of the core components of an intervention, including its essential practices, structural elements, and the contexts in which it was implemented and tested
- Documentation of treatment implementation and contrast
- Analysis of intervention costs relative to the comparison condition
- Plans to support additional long term follow-up of intervention impacts

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 review. If you need more than 6 months to develop and validate appropriate instruments 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. If you propose to evaluate an intervention with prior evidence of efficacy, you **must** apply under the separate Systematic Replication competitions offered through the National Center for Education Research (CFDA 84.305R; https://ies.ed.gov/funding/ncer_rfas/systematic_replications.asp) or the National Center for Special Education Research (CFDA 84.324R; https://ies.ed.gov/funding/ncser_rfas/ncser_systematic_replications.asp), as appropriate. If IES determines that the intervention has been previously rigorously evaluated and is thus not eligible for initial efficacy, the application will be deemed nonresponsive and will not be forwarded for scientific review.

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

2. Requirements

(a) Project Narrative

The project narrative **must** adhere to the formatting guidelines (see [Part IV.B](#)) and be **no more than 22 pages**. If the narrative exceeds this page limit, IES will remove any pages after the 22nd page of the narrative. The project narrative for an Initial Efficacy and Follow-Up project application **must** include four sections: Significance, Research Plan, Personnel, and Resources.

(1) 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. For a Follow-Up study, you **must also** describe the evidence of intervention impact in the original evaluation for the specific sample you intend to follow.

(2) 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
- Data analysis plan

In addition, **for an Initial Efficacy Study**, you **must describe** your

- Cost analysis plan
- Cost-effectiveness analysis plan or a rationale for why a cost-effectiveness analysis cannot be done

(3) 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.

(4) 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 findings.

You **must describe** your resources to conduct the project.

(b) 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.

(a) Duration Maximums:

The maximum duration of an Initial Efficacy award is **5 years**.

The maximum duration of a Follow-Up Efficacy award is **3 years**.

(b) Cost Maximums:

The maximum cost for an Initial Efficacy award is **\$3,800,000** (total cost = direct + indirect costs).

The maximum award for a Follow-Up Efficacy award is **\$1,500,000** (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.

(a) 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
- 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 and justify the size of the effect you anticipate from the intervention.

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 proposed study address the Education Research Grant program's intended outcomes? 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
- 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 data** analysis, 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 study**, describe the intervention's beneficial impact on education outcomes for the sample from the previous rigorous evaluation. Describe this sample along with the design, measures, implementation fidelity, analyses, and results of this previous study so that reviewers have enough information to judge its quality.

Explain why the impacts from that study 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.

(b) 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 evaluation, including 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. 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.

(1) Setting and Sample

Describe the setting in which the study will take place, including the size and characteristics of the setting 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.

Detail the procedure that will be used to recruit a specific sample that represents a target population in need of the proposed intervention.

Define and enumerate who would benefit from the intervention. IES does not expect individual projects to be generalizable to the U.S. population as a whole; instead, your target population may represent a narrow segment of the larger U.S. population.

Explain how your work with this sample will contribute to a larger body of knowledge on promising interventions and how learners from diverse backgrounds and experiences, including those in your proposed study, will be represented in this larger knowledge base.

Identify factors that might lead to the effect of the intervention varying across the learners and settings in your target population and the variables available to measure these factors.

Identify the inclusion/exclusion criteria you will use during sample recruitment. Discuss how these may narrow the target population studied and influence the generalizability of the results to the target population.

Describe the sample recruitment procedure that will be used to ensure similarity between the sample and target population. Discuss how you will measure similarity between the two and make adjustments if needed.

Describe the setting(s) in which the research will take place (provide letters of agreement in [Appendix E](#)) and discuss how they will allow you to draw conclusions about the education settings your research is intended to inform.

Describe strategies to reduce attrition, if applicable.

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 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 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.

(2) 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 beyond the intervention end point to determine if short-term changes in education outcomes are sustained over time. Actively plan for the possibility of assessing longer-term impacts, such as determining how you will maintain contact with schools and study participants and ensure your IRB protocols are written to allow researchers to follow participants beyond your current grant time period.

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
- How your study will meet WWC design standards (<https://ies.ed.gov/ncee/wwc/handbooks>) with or without reservations⁶

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

Sequential, Multiple Assignment, Randomized Trials (SMARTs) represent one type of a randomized controlled trial that can be used to evaluate the sequence of interventions in an adaptive intervention. For SMARTs, provide the following:

- Identification and rationale for each stage of the SMART, including the critical decision point for each stage, and the randomization process that subsequently takes place at each critical decision point

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
- Plans to determine that no manipulation of the assignment variable has occurred
- Plans to determine that the treatment and comparison groups have similar baseline characteristics, especially around the cutoff point, to rule out selection bias
- There are high levels of compliance to assignment with most treatment group members receiving the intervention and most comparison group members not
- How your study will meet WWC design standards (<https://ies.ed.gov/ncee/wwc/handbooks>) 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
- How your study will meet WWC design standards (<https://ies.ed.gov/ncee/wwc/handbooks>) with reservations, as this is the highest standard that quasi-experimental designs can meet

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
- Predicted attrition and how it was addressed in the power analysis
- For SMART designs, clearly identify your power to detect differences at each level of randomization as appropriate for your research questions.

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 importance, 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. We encourage the use of widely used common measures of learner outcomes to facilitate the field's ability to synthesize findings across studies.

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:

Describe how you will measure the generalizability of your findings by contrasting your sample's characteristics with the characteristics of the target population. Describe your plans for adjusting for any mismatch between your sample and the population.

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.
- Proposed subgroup analyses should examine learners from diverse backgrounds and experiences.

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, colleges, districts, states, or other relevant units.

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.

Although 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.

Describe your plan for examining fidelity of implementation of the intervention and treatment contrast in relation to your outcomes of interest. 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.

Describe how you will identify and examine any variables that might cause the impact of the intervention to vary across students, schools, or districts.

Cost and cost-effectiveness analysis plan:

A cost-effectiveness analysis provides 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.

- 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.

Describe how you will determine the cost of the intervention and its implementation (for an introduction see the *IES Cost Analysis Starter Kit* at https://ies.ed.gov/seer/cost_analysis.asp), the cost of the comparison condition, and the cost effectiveness of the intervention (the comparison of costs and impacts between the intervention and the comparison condition). The plan should include a discussion of how you will do the following:

- Determine the resources used by the intervention— whether these resources are related to personnel, facilities, equipment, materials, training, or other things—and describe the resources’ characteristics (quality) and quantity.
- Price each resource - determine their actual or estimated cost. If any entity, including the project, will provide a resource for free or at a reduced cost during the study, you should use the resource’s real cost (what it would cost if there were no subsidy).
- Calculate the cost of the intervention (total the cost of the resources).
- Compare alternative approaches to determining costs:
 - Total cost and incremental cost of the intervention
 - Calculating costs using national average prices and local prices
- Identify different breakdowns of cost:
 - Identify who is responsible for which costs.
 - Identify startup costs and maintenance costs.
 - Identify annual costs if the intervention is multi-year.
- Test your assumptions (sensitivity analysis).
- Following the same process, calculate the cost of the comparison condition.
- Determine the cost effectiveness of the intervention:
 - Describe how you will use the difference in cost and the difference in learner outcomes for the intervention versus the comparison condition to determine the cost per beneficial impact provided by the intervention (if there are any beneficial impacts from the intervention).
 - Focus on the key student outcomes.
- If your study proposes to evaluate any key components of the intervention, you should conduct a separate cost analysis and cost-effectiveness analysis for those components.

If you already have an estimate of the cost of the intervention, you still must include a plan to verify the estimated costs.

If you intend to offer the intervention free of charge, you must still include a cost analysis and cost-effectiveness analysis plan.

Include a plan to conduct a cost analysis for Follow-Up studies. If cost information is not available, explain this.

(c) Personnel

Identify and describe the expertise and qualifications of the project team at the primary applicant institution and at any subaward institutions.

In its research grant programs, IES is interested in including individuals from groups that have typically been underrepresented in the education sciences. Describe the backgrounds and experiences of project team members in light of this.

Describe how the background and experience of the project team supports the successful conduct of 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.

Describe which members of the project team will carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

Describe any partnerships with education agencies to carry out the proposed work. Including education agencies as partners ensures that researchers focus on outcomes that meaningful to education practitioners and policymakers.

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
- Proportion of time personnel will devote to the project, expressed as percent effort over a 12-month calendar year

(d) 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.

IES is interested in using platforms to test interventions. Letters for agreement from platform developers are required if using platforms.

Describe your resources, including access to specific offices and organizations, to carry out your plans to disseminate results as described in the required Dissemination Plan in [Appendix A: Dissemination History and Plan](#).

(e) Data Management Plan (DMP)⁷

When the PI and the AOR sign the cover page of the grant application, they will be assuring compliance with IES policy on data sharing as well as other policies and regulations governing research awards. Once the DMP is approved by IES, the PI and the institution are required to carry it out and to report progress and problems through the regular reporting channels. Compliance with IES data sharing requirements is expected even though the final dataset may not be completed and prepared for data sharing until after the grant has been completed. In cases where the PI/grantee is non-compliant with the requirements of the data sharing policy or DMP, subsequent awards to individuals or institutions may be affected. 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:

- Identification of the education repository where you will pre-register your study in the first year of the study, following the Standards for Excellence in Education Research (SEER; <https://ies.ed.gov/seer/>)
- 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 sharing, including how long the data will remain accessible (no later than publication of findings in a peer-reviewed publication and available for at least 10

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>.

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 sharing, 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 shared. 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.

Part IV: Preparing Your Application

A. Overview

The application contents—individual forms and their PDF attachments—represent the body of an application to IES. IES encourages you to refer to the IES Application Submission Guide (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) for additional information about preparing to submit your application and ensuring your application is sufficient.

B. General Formatting

To ensure that reviewers can read your application and that all applicants have similar expectations for length and space, IES specifies the following formatting conventions. Adherence to type size and line spacing requirements is necessary so that no applicant will have an unfair advantage by using small type or by providing more text in their applications. These requirements apply to the PDF file as submitted, unless otherwise specified. In order for an application to be compliant and sent forward for review, the applicant should ensure that each narrative section follows both the page limit maximums and the formatting guidelines below unless otherwise specified.

1. *Page and Margin Specifications*

For all IES grant applications, a “page” is 8.5 in. x 11 in. on one side only with 1-inch margins at the top, bottom, and both sides.

2. *Page Numbering*

Add page numbers using the header or footer function and place them at the bottom or upper right corner for ease of reading.

3. *Spacing*

Text must be single spaced.

4. *Type Size (Font Size)*

Type must conform to the following three requirements:

- The height of the letters must not be smaller than a type size of 12-point.
- Type density, including characters and spaces, must be no more than 15 characters per inch (cpi). For proportional spacing, the average for any representative section of text must not exceed 15 cpi.
- Type size must yield no more than 6 lines of type within a vertical inch.

You should check the type size using a standard device for measuring type size, rather than relying on the font selected for a particular word processing/printer combination. Small type size makes it difficult for reviewers to read the application; consequently, the use of small type will be grounds for IES to return the application without scientific peer review.

As a practical matter, if you use a 12-point Times New Roman font without compressing, kerning, condensing, or other alterations, the application will typically meet these requirements.

5. Graphs, Diagrams, and Tables

IES encourages you to use black and white in graphs, diagrams, tables, and charts. If color is used, you should ensure that the material reproduces well when printed or photocopied in black and white.

Text in figures, charts, and tables, including legends, may be in a type size smaller than 12-point but must be readily legible.

C. 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/>).

The project narrative and appendices are critical parts of the IES application because they include the substantive content that will be reviewed for theoretical and practical significance and scientific merit.

1. Appendix A: Dissemination History and Plan (Required)

You **must** include Appendix A after the project narrative. Appendix A includes two sections: Dissemination History and Dissemination Plan. Appendix A **must** meet the general formatting guidelines and be **no more than three pages**, including one page for the Dissemination History and two pages for the Dissemination Plan. If Appendix A exceeds this three-page limit, IES will remove any pages after the third page of the appendix before it is forwarded for scientific peer review.

(a) Dissemination History

The dissemination history is intended to demonstrate that the research you have conducted in the past has been disseminated in a way that is consistent with the IES mission to promote scientifically valid research findings that can provide the basis for improving academic instruction and lifelong learning. Applicants who have never had an IES grant should focus on dissemination history of related, past projects. Reviewers will use this information to determine whether the project personnel have the experience necessary to carry out the proposed dissemination plan.

The dissemination history should include the following:

- A brief description of the outcomes of prior research, including products developed or tested and how the project's findings and products were disseminated
- For interventions or assessments that were developed through one or more projects and have evidence of impact on learner outcomes or of the validity and reliability of the assessment for intended purposes and learners, an explanation for how it has been made available to users, the number of active users of the product, the number of users of the product during its history, and funding agreements or outside investments for commercialization (if applicable)

- Other unique dissemination products or notable presentations of research findings, particularly those that were intended for practitioners, policymakers, parents, students, and/or the general public

(b) Dissemination Plan

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 and state policymakers and program administrators 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 (<https://ies.ed.gov/ncer/research/randdCenters.asp>), Research Networks (<https://ies.ed.gov/ncer/research/researchNetworks.asp>), or Regional Educational Laboratories (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. 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.

- [Measurement](#) projects support the development and validation of new or modified instruments for use by educators or education researchers for specific purposes, contexts, and populations. Dissemination of findings should clearly identify the psychometric properties of the instrument and the specific uses and populations for which the instrument was validated. Should a project fail to validate an instrument for a specific use and population, these findings are important to disseminate in order to support decision making regarding the instrument's current use and further development. As appropriate, the cost of administering the instrument should be determined and communicated as part of dissemination work.

- [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 and communicating the cost 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.

The Dissemination History and Plan is the only information that may be included in Appendix A; all other materials will be removed prior to review of the application.

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. Appendix B **must** meet the general formatting guidelines and be **no more than three pages**. If Appendix B exceeds this page limit, IES will remove any pages after the third page of the appendix before it is forwarded for scientific peer review. Note that an application that was previously submitted to a different topic within this competition or to another IES grant competition is still considered a resubmission.

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; all other material will be removed prior to review of the application.

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

Appendix C **must** meet the general formatting guidelines and be **no more than 15 pages**. If Appendix C exceeds this page limit, IES will remove any pages after the 15th page of the appendix before it is forwarded for scientific peer review. 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 may be included in Appendix C; all other material will be removed prior to review of the application.

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

Appendix D **must** meet the general formatting guidelines and be **no more than 10 pages**. If Appendix D exceeds this page limit, IES will remove any pages after the 10th page of the appendix before it is forwarded for scientific peer review. 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; all other material will be removed prior to review of the application.

5. Appendix E: Letters of Agreement (Optional)

There is **no recommended page length** for Appendix E. Use this appendix to provide copies of Letters of Agreement from schools, districts, platform developers, and/or other settings or data sources that will be a part of or will provide data for the proposed research and/or individuals who will 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 (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) 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.

IES understands that, due to school closings associated with COVID-19, you may have difficulty providing letters from schools, districts, and other education sites that would participate in or provide data for the proposed research. If you are unable to provide these letters in your application, include a description in Appendix E of why you were not able to obtain letters and your plan for securing them if

your application is recommended for funding. NOTE: Special conditions may be placed on the grant awards if these letters are not received before the award date. Reviewers will be instructed to not penalize applicants for failure to include letters of agreement due to the coronavirus pandemic.

These are the only materials that may be included in Appendix E; all other material will be removed prior to review of the application.

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

If you are applying under [Exploration](#) or [Initial Efficacy and Follow-Up](#) you **must** include Appendix F. Appendix F must meet the general formatting guidelines and be **no more than five pages**. If Appendix F exceeds this page limit, IES will remove any pages after the fifth page of the appendix before it is forwarded for scientific peer review.

Include your data management plan (DMP) in Appendix F. The content of the DMP is discussed under Data Management Plan in [Exploration](#) and [Initial Efficacy and Follow-Up](#).

This is the only material that should be included in Appendix F; all other material will be removed prior to review of the application.

D. 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/structured abstract, a bibliography and references cited, an exempt or non-exempt research on human subjects narrative, and biosketches for key personnel to include as 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/Structured Abstract

You **must** submit the project summary/structured abstract as a separate PDF attachment in the application package. If your project is recommended for funding, IES will use this abstract as the basis for the online abstracts that we post when new awards are announced. We recommend that the project summary/structured abstract be two-pages long and follow the format used for IES online abstracts (<https://ies.ed.gov/funding/grantsearch/>).

(1) Title

- **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 (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) and [the topic and project type codes in part VII](#) for more information).

(2) Project Summary

The purpose of the project summary is to provide a high-level overview that is accessible to a range of audiences, such as policymakers, practitioners, and the general public. This section should use short, active sentences to briefly describe the significance of the project, project activities, and the intended outcomes.

- **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.
- **Project Activities:** An overview of the sample, research design, and methods.
- **Products:** A brief description of the expected products of the project, including the intervention or assessment to be developed and the information that will be learned and disseminated.

(3) Structured Abstract

The purpose of the structured abstract is to provide key details about the project activities. This section is most likely to be used by other researchers but should be written in a way that is accessible to anyone who wants more information about 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/Instrument/Factors:** For Development and Innovation, Initial Efficacy and Follow-Up, and Measurement projects, a brief description of the intervention or instrument 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.
- **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.
- **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.
- **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 the research questions.
- **Cost Analysis:** If applicable, a brief description of the cost and/or cost-effectiveness analyses planned.
- **Related IES Projects:** Indicate whether the proposed research is related to a completed or ongoing IES-funded project by noting the title of the related IES project and providing a link to the online IES abstract.

See our online search engine of funded research grants (<https://ies.ed.gov/funding/grantsearch/>) for examples of the content to be included in your project summary/structured abstract.

2. Bibliography and References Cited

You **must** submit the bibliography and references cited as a separate PDF attachment in the application package. There is **no recommended 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* (<https://www2.ed.gov/policy/fund/guid/humansub/overview.html>) for a brief overview of principles, regulations, and policies which affect research involving human subjects in research activities supported by the Department of Education.

Note that the Revised Common Rule is now in effect with changes that will affect Institutional Review Board (IRB) review of your proposed research protocol. Take care to address how changes to exemption and continuing review procedures, and the use of a single IRB, will be addressed should your application be recommended for funding.

The U.S. Department of Education does not require certification of IRB 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 from the Department.

4. Biographical Sketches for Key Personnel

You **must** submit a biographical sketch (an abbreviated CV plus information about current and pending support) for each person named as key personnel in your application. You may also submit biographical sketches for consultants (optional). Each biographical sketch with current and pending support information **must be no more than five pages in length** and follow the general formatting guidelines. If a biographical sketch exceeds this page limit, IES will remove any pages after the fifth page before it is forwarded for scientific peer review.

Biographical sketches are submitted as separate PDF attachments in the application package. IES strongly encourages applicants to use SciENcv (<https://www.ncbi.nlm.nih.gov/sciencv/>) where you will find an IES biosketch form. You may also develop your own biosketch format. If you use SciENcv, the information on current and pending support will be entered into the IES biosketch template. If you use your own format, you will need to provide this information in a separate table.

Be sure to include your ORCID number (Open Researcher and Contributor; <https://orcid.org/>) if you have one and consider establishing one if you have yet to do so.

The biographical sketch for the principal investigator, each co-principal investigator, and other key personnel should show how key personnel possess training and expertise commensurate with their specified duties on the proposed project, for example by describing relevant publications, grants, and research experience.

Provide a list of current and pending grants for the principal investigator, each co-principal investigator, and other key personnel, along with the proportion of their time, expressed as percent **effort over a 12-month calendar year**, allocated to each project. Include the proposed IES grant as one of the pending grants in this list.

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

(a) 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. Please note that the Indirect Cost Group (ICG) in the U.S. Department of Education's Office of the Chief Financial Officer will not be available for assistance during the application preparation process. If your institution does not have an indirect cost rate and you receive a grant from IES, the ICG group can help with obtaining an indirect cost rate once the grant is awarded.

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

(b) 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 (https://www.ecfr.gov/cgi-bin/text-idx?SID=dcd3efbcf2b6092f84c3b1af32bdcc34&node=se2.1.200_1432&rgn=div8).

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 Requirements

1. Pre-Award

(a) Clarification and Budget Questions

IES uses the scientific peer review process as the first step in making funding decisions. If your application is recommended for funding based on the outcome of the scientific peer review, an IES program officer will contact you to clarify any issues that were raised by the peer reviewers and to address whether the proposed budget adequately supports the scope of work and meets federal guidelines.

(b) Demonstrating Access to Data and Education Settings

The research you propose to conduct 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.

(1) 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.

(2) 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.

(3) 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 decision making procedures.

(c) Assessment of Past Performance

IES considers the applicant's performance and use of funds under a previous federal award as part of the criteria for making a funding decision. Performance on previous Department of Education awards is considered as is additional information that may be requested from the applicant, including compliance to the IES Public Access Policy (applicable for all grants funded from 2012 to present; <https://ies.ed.gov/funding/researchaccess.asp>).

2. Post Award

(a) Compliance with IES Policy on Public Access to Data and Results

(1) Access to data

You must include a [data management plan \(DMP\) in Appendix F](#) if you are submitting an [Exploration](#) application or 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.

(2) Access to results: Grantee submissions to ERIC

IES requires all grantees to submit the electronic version of peer-reviewed scholarly publications to ERIC (<https://eric.ed.gov/>), 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 (<https://ies.ed.gov/funding/researchaccess.asp>) 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. **As the designated representative for the grantee institution, IES holds the principal investigator responsible** for ensuring that authors of publications stemming from the grant comply with this requirement.

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 (<https://eric.ed.gov/submit/>), as well as a Frequently Asked Questions page (<https://eric.ed.gov/?granteefaq>). 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).

(b) Pre-Register Exploration and Initial Efficacy Studies

Grantees must register their studies on a suitable platform within the first year of receiving a new award. There are several options for preregistration including the Registry of Efficacy and Effectiveness Studies (REES; <https://sreereg.icpsr.umich.edu/sreereg/>), the Open Science Framework (OSF; <https://osf.io/>), ClinicalTrials.gov (<https://clinicaltrials.gov/>), AEA Registry (<https://www.socialscienceregistry.org/>), EGAP (<https://egap.org/content/registration>), Uri Simonsohn's AsPredicted (<https://aspredicted.org/>), and trial registries in the WHO Registry Network (<https://www.who.int/ictrp/network/en/>).

(c) 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.

(d) Attendance at the Annual IES Principal Investigators Meeting

The principal investigator (PI) is required to attend one meeting each year (for up to 3 days) in Washington, DC with other IES grantees and IES staff. The project's budget should include this meeting. PIs who are not able to attend the meeting may designate another person who is key personnel on the research team to attend.

C. Overview of Application and Scientific Peer Review Process

1. Submitting Your Letter of Intent

Letters of intent (LOIs) are submitted online at the IES Peer Review Information Management Online (PRIMO) system (<https://iesreview.ed.gov/LOI/LOISubmit>). **Select the Letter of Intent form for the competition 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; <https://ies.ed.gov/funding/pdf/submissionguide.pdf>) that the FY 2021 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 2021 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 2021 application is a new application. In Appendix B, you should provide a rationale explaining why your FY 2021 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 2021 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 2021 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 20, 2020 through the internet using the software provided on the Grants.gov (<https://www.grants.gov/>) website. 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/>).

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 PRIMO system (<https://iesreview.ed.gov/>). PRIMO allows applicants to track the progress of their application via the Applicant Notification System (ANS).

Approximately one to two 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 four to six 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 (<https://ies.ed.gov/funding/pdf/submissionguide.pdf>) 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/application_review.asp) by a panel of experts 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 review panels (<https://ies.ed.gov/director/sro/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 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 provide reliable information about the education practices that support learning and improve academic achievement and access to education for all learners. IES expects reviewers to assess the scientific rigor and practical significance of the research proposed in order to judge the likelihood that it will make a meaningful contribution to the larger IES mission. Information about each of these criteria is described in [Part III Project Type Requirements and Recommendations](#) and [Part II Topics](#).

(a) Significance

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

(b) 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?

(c) Personnel

Does the applicant address the recommendations described in the Personnel section for the project type under which the applicant is submitting the application? Do the principal investigator, project director, and other key personnel possess appropriate training and experience and will they commit sufficient time to competently implement the proposed research?

(d) Resources

Does the applicant address the recommendations described in the Resources section for the project type under which the applicant is submitting the application? Does the applicant have the facilities, equipment, supplies, and other resources required to support the proposed activities? Do the commitments of each partner show support for the implementation and success of the project?

(e) Dissemination

Does the application address the recommendations described in Appendix A: Dissemination History and Plan? Does the applicant present a dissemination plan that is tailored to the purpose of the project type and designed to reach a wide range of audiences? Does the applicant describe a dissemination history that demonstrates past success in sharing results of education research widely and appropriately?

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

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- 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
- Availability of funds

Part VI: Compliance and Responsiveness Checklist

Only compliant and responsive applications will be forwarded for scientific peer review. 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?
Do the project narrative and other narrative content adhere to all formatting requirements
Do the project narrative and other narrative content adhere to all page maximums as described in the RFA? IES will remove any pages above the maximum before forwarding an application for scientific peer review.
Have you included Appendix A: Dissemination History and Plan?
If you are resubmitting an application, have you included Appendix B: Response to Reviewers?
If you are submitting an Exploration or Initial Efficacy and Follow-Up application, have you included Appendix F: Data Management Plan?
General Requirements for Responsiveness
Have you met all the Requirements for an application?
Does your proposed research include measures of academic outcomes?
<ul style="list-style-type: none"> If you are applying under the Effective Instruction topic, does your proposed research include the additional required measures of educator outcomes?
<ul style="list-style-type: none"> 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?
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 as listed below?

This checklist continues on the next page.

Required Project Narrative Elements for Responsiveness				
	<u>Measurement</u>	<u>Exploration</u>	<u>Development and Innovation</u>	<u>Initial Efficacy and Follow-Up</u>
Significance	<ul style="list-style-type: none"> the instrument you propose to develop, refine, and/or validate 	<ul style="list-style-type: none"> the factor(s) you will study 	<ul style="list-style-type: none"> the intervention you propose to develop or revise 	<ul style="list-style-type: none"> the intervention you propose to evaluate for a Follow-Up study, the evidence from the original evaluation
Research Plan	<ul style="list-style-type: none"> characteristics of your sample research design, methods, and data analysis plans for the instrument's <ul style="list-style-type: none"> development and/or refinement, as applicable validation 	<ul style="list-style-type: none"> characteristics of your sample research design and methods data analysis plan 	<ul style="list-style-type: none"> characteristics of your sample research design, methods, and data analysis plans <ul style="list-style-type: none"> for developing the intervention for determining the intervention's usability and feasibility for determining the fully developed intervention's promise for generating beneficial learner outcomes through a pilot study cost analysis plan for determining the costs of implementing the fully developed intervention in the context of the pilot study 	<ul style="list-style-type: none"> characteristics of your sample research design and methods power analysis data analysis plan <p>In addition, for an Initial Efficacy study</p> <ul style="list-style-type: none"> cost analysis plan cost-effectiveness analysis plan or a rationale for why a cost-effectiveness analysis cannot be done
Personnel	<ul style="list-style-type: none"> project team 	<ul style="list-style-type: none"> project team 	<ul style="list-style-type: none"> project team 	<ul style="list-style-type: none"> project team
Resources	<ul style="list-style-type: none"> resources to conduct the project 	<ul style="list-style-type: none"> resources to conduct the project 	<ul style="list-style-type: none"> resources to conduct the project 	<ul style="list-style-type: none"> resources to conduct the project

Part VII: Topic and Project Type Codes

Applications to the **Education Research (CFDA 84.305A) program** are submitted under a single topic and a single project type. You must enter the appropriate topic and project type code in Item 4b of the SF 424 Application for Federal Assistance form (see the IES Application Submission Guide for more information about this form; <https://ies.ed.gov/funding/pdf/submissionguide.pdf>). For example, an application to the Education Research Grants program (CFDA 84.305A) under the Science, Technology, Engineering, and Mathematics (STEM) Education topic and the Exploration project type should have the code “NCER-STEM-Exploration” entered in the field for Item 4b.

Topics	Codes
Career and Technical Education	NCER-CTE
Civics Education and Social Studies	NCER-SocStu
Cognition and Student Learning	NCER-CASL
Early Learning Programs and Policies	NCER-ELPP
Effective Instruction	NCER-Teach
English Learners	NCER-EL
Improving Education Systems	NCER-SYS
Literacy	NCER-Literacy
Postsecondary and Adult Education	NCER-PostsecAdult
Science, Technology, Engineering, and Mathematics (STEM) Education	NCER-STEM
Social and Behavioral Context for Academic Learning	NCER-SocBeh

Project Types	Codes
Measurement	Measurement
Exploration	Exploration
Development and Innovation	Development
Initial Efficacy and Follow-up	Initial Efficacy