Responses to the Request for Public Comment on IES-Funded Efficacy, Replication, and Effectiveness Studies

Summarized by

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In July 2017, the National Center for Education Research (NCER) and the National Center for Special Education Research (NCSER) in the Institute of Education Sciences (IES) issued a request for public comment (see Appendix) on its Education and Special Education Research Grants programs, specifically around two of its five research goals: Efficacy and Replication (Goal 3) and Effectiveness (Goal 4). The request was part of an ongoing effort to seek stakeholder input on whether Goals 3 and 4, as currently configured, are meeting the needs of the field. Goal 3 - Efficacy and Replication supports the evaluation of fully-developed interventions to determine whether they produce a beneficial impact on student education outcomes relative to a counterfactual when they are implemented under ideal or routine conditions in authentic education settings. Goal 4 - Effectiveness supports the independent evaluation of fully-developed interventions with prior evidence of efficacy to determine whether they produce a beneficial impact on student education outcomes relative to a counterfactual when they are implemented under routine conditions in authentic education settings.

In October 2016, NCER and NCSER convened a group of experts for a Technical Working Group (TWG) on how best to support the advancement of evidence beyond an efficacy study (a summary of the TWG meeting and a blog post summarizing the discussion are available on the IES website). The TWG agreed that more emphasis on replication is needed, and discussed various actions IES could take to increase visibility and support for replication studies. The TWG also discussed how the requirements for Goal 4 studies – in particular, the emphasis on an independent evaluation of an intervention under routine conditions – may be impeding efforts to build more evidence on interventions that have prior evidence of efficacy. Finally, the TWG called for more attention to examining causal mechanisms of interventions, variability across studies or study sites, and strategies to produce greater impacts and/or to help end users implement and sustain interventions with fidelity.

IES issued a request for public comment to obtain additional feedback from the broader field. The request for public comment was posted on the IES website and announced in a Newsflash. In addition, the NCER and NCSER Commissioners reached out to various education research

associations to ensure they were aware of the request and to encourage their members to respond. The deadline for comments was October 2, 2017. The request for public comment invited responses to the following questions:

1. What can IES do to encourage more visible and systematic replication research?
2. How can IES revise the current requirements for Goal 4 to encourage more effectiveness studies? Specifically:
   2a. How important is IES' current requirement for an independent evaluation, that is, an evaluation carried out by individuals who did not and do not participate in the development or distribution of the intervention? Are there other ways that an independent evaluation might be conceptualized?
   2b. Do we need a different definition of routine conditions? Currently, IES uses the term to refer to conditions under which an intervention is implemented that reflect (1) the everyday practice occurring in classrooms, schools, and districts; (2) the heterogeneity of the target population; and (3) typical or standard implementation support.
3. Does IES pay sufficient attention to collecting and analyzing data on program implementation under the current research goal structure? If not, how can IES better support this type of research?
4. Does IES place enough emphasis on examining causal mechanisms and variation in impacts under the current goal structure? If not, what can IES do to better support work in these areas?

This document summarizes the input NCER and NCSER received in response to the request for public comment. The report begins with descriptive information on the letters received, followed by a summary of the responses received for each of the questions posed.

Methods for Summarizing Responses

NCER and NCSER received 36 responses to the request for public comment. There were no identical or duplicate letters submitted. Four responses were excluded because they did not address the questions set forth in the request. Thus, 32 distinct responses were used in producing this summary, with 24 of the letters submitted by individuals and 8 submitted by organizations or coalitions.

Table 1 shows that responses from individuals were primarily from those based at universities. Table 2 shows that letters from organizations/coalitions were primarily from research institutions (e.g., research firms, universities).

Table 1. Affiliations of individual respondents to public comments.

Affiliation	Responses from Individuals
Research Institution	
University	16
Research Firm	3
Federal/State/Local Agency	0
School Administrators, Teachers, and Staff	1
Other[1]	4
Total	**24**

[1]Individuals not currently affiliated with a research institution, federal/state/local agency or school (e.g., retired teacher, independent research consultant).

Table 2. Affiliations of organizational respondents to public comments.

Affiliation	Responses from Organizations
Research Institution	
University	3
Research Firm	2
Researcher Association	2
Other[2]	1
Total	**8**

[2]Coalition of research colleges of education.

The process for summarizing responses involved several steps. First, three staff from NCER and NCSER separately read each response, screened the responses for relevance to the questions asked in the request for public comment, and began to identify themes based on the content of the responses. Second, the same three staff members read through all responses again and refined the themes. Then, one of the three staff members assumed the lead in coding the themes in each letter, tallying the responses that addressed each theme, and summarizing the responses. There were no inter-rater reliability checks for these steps.

The summary of the responses is presented below, grouped by the questions asked in the request for public comment. The responses to each question yielded no overall consensus, although recurring themes did emerge for each question. The summary describes the numbers of responses IES received to each question, as well as the major themes emerging from those responses (and the number of responses per theme). The summary describes themes that were mentioned by at least two respondents and, thus, does not capture the full content of every response received. Because some responses to a particular question included comments that touched on more than one theme, the sum of responses across themes may exceed the number of responses to the question. For example, if a question yielded 20 responses, 12 of those responses may have touched on two or more themes, resulting in a total number of responses represented in the summary that is greater than 20.

Results

1. What can IES do to encourage more visible and systematic replication research?

The Institute received 20 responses to this question. The majority of respondents to this question agreed that encouraging replications in education research is important, but recommendations for how to encourage replications varied. The most common theme, mentioned in 11 of the 20 responses (55%), was to ***Incentivize and Prioritize Replications***. These responses included general feedback to further encourage replication studies as well as more specific suggestions to prioritize (e.g., through a separate Goal, competition, or competitive preference) and/or incentivize replication (e.g., by increasing the maximum duration for replication projects and/or publicizing replication awards).

Other themes that emerged were suggestions to ***Support Training in Replication Research*** for researchers and reviewers (*n* = 5, 25%) and ***Target Certain Replications and/or Competitions*** (*n* = 3, 15%). For instance, suggestions included encouraging replications under the Early Career Development and Mentoring, or Researcher-Practitioner Partnership programs, and prioritizing certain types of replications over others (e.g., replications of effective interventions that address unanswered questions). Another suggestion for how to encourage more replication research was to ***Support Data Transparency/Sharing*** (*n* = 3, 15%) in order to facilitate systematic replications, ranging from re-analyses of original data to conceptual replications that vary certain aspects of a previous study. Lastly, respondents suggested that the Institute ***Clarify Definitions and Guidance*** around replications in the Requests for Applications (RFA) (*n* = 2, 10%); for example, by delineating different types of replications and providing guidance on how to design replications. See Table 3 for a description, example quotes, and number of responses for each theme.

Table 3. Themes emerging from responses to Question 1.

Theme	Description of Theme	Example Quote(s)	Number of Responses (% of Responses to Question 1)[3]
Incentivize and Prioritize Replications	Prioritize and/or incentivize replication (e.g., through a separate competition or competitive preference)	*Create a specific competition (separate from the Efficacy goal) or priority for funding replication research.*	11 (55.0%)
Support Training in Replication Research	Provide training for researchers and reviewers	*IES should consider vehicles that would educate early career investigators and advanced graduate students in the principles and practices of replication research.*	5 (25.0%)
Target Certain Replications and/or Competitions	Target particular competitions or researchers (e.g., early career researchers) for replications	*Identify programs with strong evidence that are ready for replication and examine implementation of*	3 (15.0%)

	and/or encourage particular types of replications (e.g., conceptual replications that vary one or more aspects of a previous efficacy study that showed positive effects)	*these programs in different contexts… through research-practice partnerships.*	
Support Data Transparency/ Sharing	Encourage researchers to pre-register study designs and share data	*IES support for the use of data repositories/archives by investigators would advance quality research and encourage replication.*	3 (15.0%)
Clarify Definitions and Guidance	Clarify the definitions and guidance around replication in the RFA	*Clearer replication research guidance could be included in the RFA… information about the number and types of changes in replication studies (from the original), limits to such changes, and how to extend the generalization of research through replication in a systematic way.*	2 (10.0%)

[3] The sum of responses across themes exceeds the total responses for Question 1, as a single response could contain comments that addressed more than one theme.

2. How can IES revise the current requirements for Goal 4 to encourage more effectiveness studies?

The Institute received 10 responses that directly addressed this specific question. The most common theme (*n* = 5, 50%) was that IES should ***Clarify or Reframe the Purpose of Goal 4*** in the RFA; for instance, by providing clearer distinctions between Goal 3 and Goal 4, and further clarifying the purpose of and criteria for a Goal 4 study.

Another theme was that IES should ***Encourage Researcher-Practitioner Partnerships*** (*n* = 3, 33%) in order to increase the appreciation and demand for evidence of effectiveness by education leaders and to increase the relevance of research for education decision making. The final theme was that IES should ***Allow/Emphasize Alternative Designs*** (*n* = 2, 20%) under Goal 4; for example, by placing more emphasis on quasi-experimental designs that may be more feasible with larger samples and under routine conditions. See Table 4 for a description, example quotes, and number of responses for each theme.

Table 4. Themes emerging from responses to Question 2.

Theme	Description of Theme	Example Quote(s)	Number of Responses (% of Responses to Question 2)
Clarify or Reframe the	Clarify or reframe the purpose and criteria for an effectiveness	*IES [should] consider the value that Goal 4 projects*	5 (50.0%)

Purpose of Goal 4	study (e.g., by further distinguishing it from Goal 3, revising the terminology)	*add over and above Goal 3 projects. Rather than simply answering the question of whether an intervention can be taken to scale, we believe Goal 4 projects could offer the opportunity to explore interesting questions about what it takes to bring an intervention to scale.*	
Encourage Researcher-Practitioner Partnerships	Encourage researchers to partner with education leaders and practitioners in developing research questions and increasing the appreciation and demand for evidence of effectiveness	*Outreach to school systems and educational leaders regarding the utility of research and the value of evidence-based practices could enhance the receptiveness of school districts to collaborate with IES researchers in Goal 4 projects.*	3 (33.3%)
Allow/Emphasize Alternative Designs	Allow other rigorous methodologies or place greater emphasis on quasi-experimental designs under Goal 4	*It might be more useful for IES to emphasize quasi-experiments that can be more easily done with larger populations and under conditions that could be considered more typical.*	2 (20.0%)

2a. How important is IES' current requirement for an independent evaluation, that is, an evaluation carried out by individuals who did not and do not participate in the development or distribution of the intervention? Are there other ways that an independent evaluation might be conceptualized?

The Institute received 17 responses to this specific question. Of these, the most common theme (n = 6, 35%) was to ***Encourage a Team Approach*** among the developer(s) and the independent evaluator(s). Such an approach would allow both parties to apply their unique knowledge and skills to the evaluation. With regard to the independent evaluator, respondents were divided. Some respondents said to ***Keep the Independent Evaluator Requirement*** (n = 4, 24%), while others suggested to ***Reduce or Eliminate the Focus on an Independent Evaluation*** (n = 4, 24%). Those in favor of keeping the independent evaluator requirement cited a variety of reasons, including that it reduces bias, that it ensures the analytic team does not have a personal or financial stake in the outcome of the evaluation, and that it cannot be achieved through other means such as transparency. Those in favor of reducing or eliminating the requirement commented that it was too strict and that data integrity could be achieved through transparency

and checks built into the design as opposed to independence. Some respondents also felt that researchers who have greater expertise and familiarity with the intervention are in a better position to evaluate its effectiveness. Finally, some respondents suggested that IES should ***Clarify or Increase the Developer's Role*** (*n* = 3, 18%), by providing clearer guidance on what activities the developer could engage in or by allowing them to play a more prominent role in the evaluation. Table 5 presents the description, example quotes, and number of responses for each theme.

Table 5. Themes emerging from responses to Question 2a.

Theme	Description of Theme	Example Quote(s)	Number of Responses (% of Responses to Question 2a)
Encourage a Team Approach	Encourage independent evaluators and developers to work as a team	*A team approach may be helpful, involving a combination of those who know the intervention well and those who are truly impartial evaluators. Perhaps individuals who did not participate in intervention development could design and carry out the evaluation, but with the details that require intervention expertise overseen by the intervention developer to ensure that fidelity and outcomes are being assessed in ways that are consistent with the intervention model.*	6 (35.3%)
Keep the Independent Evaluator Requirement	Continue to require an independent evaluation under Goal 4	*Independent evaluation is critical… In some cases, the use of an external evaluator provides key checks and balances.*	4 (23.5%)
Reduce or Eliminate the Focus on an Independent Evaluation	Remove the requirement for an independent evaluation as it is overly restrictive	*Restricting to those who did not participate in development or distribution is perhaps too strict… It leaves out the people who have the most expertise and knowledge of the intervention – namely those who implemented the intervention.*	4 (23.5%)
Clarify or Increase the Developer's Role	Provide clear expectations about the developer's role and/or allow them to play a	*We suggest IES consider including a specific role for the original researcher/*	3 (17.6%)

	more prominent role	*research team. For example, the researcher could serve in an advisory role that is somewhat removed from the primary activities of the project but still allows for substantive input into the design and implementation of the study.*	

2b. Do we need a different definition of routine conditions? Currently, IES uses the term to refer to conditions under which an intervention is implemented that reflect (1) the everyday practice occurring in classrooms, schools, and districts; (2) the heterogeneity of the target population; and (3) typical or standard implementation support.

The Institute received 12 responses that directly addressed this question. The most common theme (*n* = 4, 31%) included suggestions to ***Keep the Current Definition***, as it is generally appropriate. Another recommendation was to ***Reframe or Eliminate the Requirement*** (*n* = 2, 15%). For example, respondents stated that Goal 4 should allow for some time to alter the intervention conditions so that the intervention is ready for implementation under routine conditions, or for a gradual release of the control of the intervention's implementation to the school. A final suggestion was to ***Clarify the Definition*** (*n* = 2, 15%) of routine conditions, and in particular whether typical or standard implementation support means support that is standard for the setting, or support that is standard for the program. See Table 6 for a description, example quotes, and number of responses for each theme.

Table 6. Themes emerging from responses to Question 2b.

Theme	Description of Theme	Example Quote(s)	Number of Responses (% of Responses to Question 2b)[4]
Keep the Current Definition	Keep the current definition of routine conditions as it is generally appropriate	*The current definition is generally appropriate.*	4 (33.3%)
Reframe or Eliminate the Requirement	Reframe or eliminate the requirement to implement under routine conditions (e.g., by allowing researchers to define the level of implementation support provided)	*I especially agree with the [technical working group's] recommendations about defining conditions of practice/implementation in Goal 4 studies rather than strictly limiting these to "typical" practice conditions. It may be that a system for rating or defining the level of support provided in the study would be a further valuable*	3 (25.0%)

		addition that would help in interpreting the outcomes.	
Clarify the Definition	Further clarify certain parts of the definition (e.g., clarify what is considered typical or standard implementation support)	*"Typical or standard implementation support" could be more clearly defined. For example, if the developer recommends that a program receive implementation support in order for the program to be successful, and that support is provided, would the program still be considered "effective in routine conditions"?*	2 (16.7%)

[4] The sum of responses across themes is less than the total responses for Question 2b as themes that were only mentioned by one respondent are not included in the summary.

3. Does IES pay sufficient attention to collecting and analyzing data on program implementation under the current research goal structure? If not, how can IES better support this type of research?

The Institute received 11 comments that directly addressed this question. Themes that were only mentioned by one respondent are not described here. The most common suggestion was to ***Place More Emphasis on Implementation*** (*n* = 7, 64%), for example by investing in longer-term studies of implementation and providing more funding for implementation research. On the flip side, some respondents said to ***Keep the Current Emphasis*** (*n* = 3, 27%), arguing that IES already pays sufficient attention to implementation. See Table 7 for a description, example quotes, and number of respondents for each theme.

Table 7. Themes emerging from responses to Question 3.

Theme	Description of Theme	Example Quote(s)	Number of Responses (% of Responses to Question 3)[5]
Place More Emphasis on Implementation	Provide more support for implementation research under Goal 3 and/or Goal 4 (e.g., provide more funding, encourage more longitudinal studies)	*There is a need to invest in longer term studies of implementation and the conditions that are conducive to full and meaningful implementation of stable change in programs, procedures, and practices.*	7 (63.6%)
Keep Current Emphasis	Keep the current emphasis on implementation as it is generally appropriate	*IES does, indeed, pay sufficient attention to collecting/analyzing data on program*	3 (27.3%)

		implementation.	

[5] The sum of responses across themes is less than the total responses for Question 3 as themes that were only mentioned by one respondent are not included in the summary.

4. Does IES place enough emphasis on examining causal mechanisms and variation in impacts under the current goal structure? If not, what can IES do to better support work in these areas?

The Institute received 10 responses to this question. Half of the comments (*n* = 5, 50%) included suggestions to ***Further Emphasize/Incentivize*** these types of analyses in the RFAs and through training. Specific suggestions about the types of analyses to encourage under each goal were mixed. For instance, some respondents suggested placing less emphasis on mediators due to the complexity of these analyses and the need for large samples, and instead, encouraged exploration of moderators as this is generally more feasible and offers information that may be more useful to practitioners.

The other major themes that emerged were suggestions for IES to ***Keep the Current Emphasis*** (*n* = 2, 20%) on causal mechanisms and variation in impacts and to ***Acknowledge Complexities and Challenges*** (*n* = 2, 20%) associated with these analyses, for example by reconsidering the current emphasis on moderators and/or mediators due to the difficulties in study design and analysis. See Table 8 for a description, example quotes, and number of responses for each theme.

Table 8. Themes emerging from responses to Question 4.

Theme	Description of Theme	Example Quote(s)	Number of Responses (% of Responses to Question 4)[6]
Further Emphasize/ Incentivize	Provide more support and training for these types of analyses (e.g., increase emphasis in the RFA, fund teams of researchers to examine causal mechanisms)	*Continue to encourage researchers to investigate mediators and moderators, especially in Goal 3 and 4 studies, and provide in-depth explanations for all of these concepts in the [RFA]… [also] continue investing in methodological advances to support mediational analyses.*	5 (50.0%)
Keep Current Emphasis	Keep the current emphasis on causal mechanisms and variation in impacts under Goals 3 and 4	*IES puts sufficient emphasis on examining causal mechanisms.*	2 (20.0%)
Acknowledge Complexities and Challenges	Reconsider current emphasis on causal mechanisms and/or variation in impacts under Goals 3 and 4 due to large sample size needs and complexity of analyses	*The search for causal mechanisms underlying program effects is extremely complex… The procedures are so complex and demanding that they*	2 (20.0%)

		seem infeasible in the context of a Goal 4 study.	

[6] The sum of responses across themes is less than the total responses for Question 4 as themes that were only mentioned by one respondent are not included in the summary.

Next Steps

NCER and NCSER appreciate the individuals and organizations that provided thoughtful and wide-ranging feedback to our questions regarding Goals 3 and 4. IES will use the feedback and recommendations from the TWG and the public comment letters to inform our discussion on how best to refine Goals 3 and 4. Though there was no overall consensus among the responses, the comments and recommendations offered valuable feedback on how we can continue to improve our research programs. NCER and NCSER will continue engaging our stakeholders and welcome further input into how the centers can best support a coherent body of research for evidence-based decision making by education policymakers and practitioners.

UNITED STATES DEPARTMENT OF EDUCATION
INSTITUTE OF EDUCATION SCIENCES

National Center for Education Research
National Center for Special Education Research

Invitation for Public Comment on IES-Funded Efficacy, Replication, and Effectiveness Studies
July 26, 2017

Each year, the Institute of Education Sciences (IES) invites applications for education and special education research projects that address one of five research goals, including Efficacy and Replication (Goal 3) and Effectiveness (Goal 4). We write to request your feedback on whether Goals 3 and 4 as currently configured are meeting the needs of the field, or whether we should consider making changes to incentivize and support more replication and effectiveness studies.

The requirements and recommendations for Goal 3 and Goal 4 projects are described in the Request for Applications for Education Research (84.305A) and Special Education Research (84.324A). Briefly, *Goal 3* supports the evaluation of fully-developed interventions to determine whether they produce a beneficial impact on student education outcomes relative to a counterfactual when they are implemented under ideal or routine conditions by the end user in authentic education settings. *Goal 4* supports the independent evaluation of fully-developed interventions with prior evidence of efficacy to determine whether they produce a beneficial impact on student education outcomes relative to a counterfactual when they are implemented by the end user under routine conditions in authentic education settings. To date, IES has funded 321 Goal 3 studies and 18 Goal 4 studies.

In October 2016, IES convened a group of experts for a Technical Working Group (TWG) to discuss the broad question of what should come after an efficacy study (a summary of the TWG meeting (PDF) and a blog post summarizing the discussion are available on the IES website). The TWG agreed that more emphasis on replication research is needed, and recognized that replication may take different forms, including re-analysis of original datasets; direct replications (in which the elements and conditions of the original study are repeated as closely as possible); and conceptual replications (in which the parameters of the original study are modified in some way, such as altering an aspect of the intervention to improve outcomes or re-testing an intervention on a different population or in a different context). About half of all Goal 3 and Goal 4 studies funded by IES have been conceptual replications; re-analysis of datasets and direct replications are relatively rare.

The TWG considered various actions IES could take to increase the visibility and support it provides for replication studies. The TWG also discussed whether the requirements for a Goal 4 study – in particular, the emphasis on an *independent evaluation* of an intervention *under routine conditions* – are impeding efforts to build more evidence on interventions that have prior evidence of efficacy. Finally, the TWG considered whether more attention is needed to examine causal mechanisms of interventions, variability across studies or study sites, and strategies to produce greater impacts and/or to help end users implement and sustain interventions with fidelity.

As we consider the TWG's comments and recommendations, we would also like to invite input from the field on the following questions:

1. What can IES do to encourage more visible and systematic replication research?

2. How can IES revise the current requirements for Goal 4 to encourage more effectiveness studies? Specifically:

    - How important is IES' current requirement for an independent evaluation, that is, an evaluation carried out by individuals who did not and do not participate in the development or distribution of the intervention? Are there other ways that an independent evaluation might be conceptualized?
    - Do we need a different definition of routine conditions? Currently, IES uses the term to refer to conditions under which an intervention is implemented that reflect (1) the everyday practice occurring in classrooms, schools, and districts; (2) the heterogeneity of the target population; and (3) typical or standard implementation support.

3. Does IES pay sufficient attention to collecting and analyzing data on program implementation under the current research goal structure? If not, how can IES better support this type of research?

4. Does IES place enough emphasis on examining causal mechanisms and variation in impacts under the current goal structure? If not, what can IES do to better support work in these areas?

Please send your feedback to Comments.Research@ed.gov by **Monday, October 2, 2017**. We also encourage you to forward this request to anyone interested in providing suggestions. Thank you.

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Delegated the Duties of IES Director