



Consensus Study Report

MARCH 2022

HIGHLIGHTS

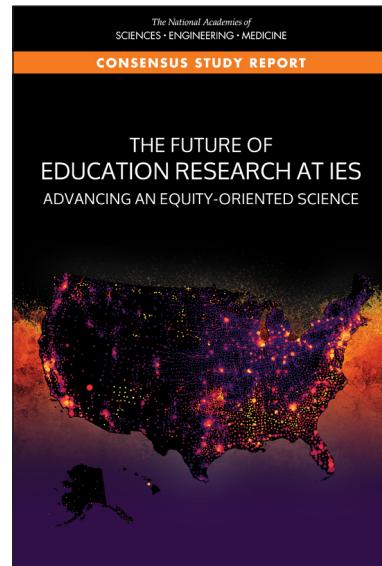
The Future of Education Research at IES: Advancing an Equity-Oriented Science

At the beginning of this century, the landscape of public education in the United States was fundamentally changed with the passage of a suite of new policy initiatives at the federal and state level. The new legislation, which included the No Child Left Behind Act of 2001, placed student achievement at the heart of education and called on researchers and policy makers to use evidence-based programming and practices. There was also a new federal commitment to addressing disparities in achievement among students from a variety of demographic subgroups. Congress passed the Education Sciences Reform Act (ESRA) of 2002, authorizing the creation of the Institute of Education Sciences (IES) as the research arm of the U.S. Department of Education. This legislation crystallized the federal government's commitment to providing "national leadership in expanding fundamental knowledge and understanding of education from early childhood through postsecondary study."

The National Center for Education Research (NCER) and the National Center for Special Education Research (NCSER), two of the new agencies in IES, have been at the forefront of education research since their creation. Now, two decades later, IES called for a review of how these two agencies can improve their current activities and plan for their future work, asking the National Academies of Sciences, Engineering, and Medicine to convene a committee of experts in education research and special education research particularly in the areas of learning, teaching, assessment, and policy as well as experts who represent a range of research traditions and methods. The committee was asked to inform IES on (a) critical problems where new research is needed; (b) new methods or approaches for conducting research; and (c) new types of research training investments. The committee's report offers careful and specific guidance for NCER and NCSER to continue their leadership roles in education research.

EQUITY

In the past two decades, issues around equity have become central to all discussion about education. ESRA puts equity issues front and center, calling on NCER and NCSER to support research that ensures all children have access to a high-quality education and to close the achievement gap between high-performing and low-performing students.



In addition to this federal focus, decades of research have made clear that educational inequity in all facets of the system is one of the most pressing challenges facing education. Simply put, a great majority of the issues facing IES and the entire education and education research enterprise are fundamentally problems of equity. Thus, all of the report's recommendations need to be seen through the lens of equity.

TYPES OF RESEARCH

Both NCER and NCSER organize their grants by types of research projects. The original structure of project types was developed around the assumption that the challenges facing schools and other education settings could be addressed by developing and testing interventions, and that educators would then seek out the best intervention to address a particular problem. These project types have played a key role in shaping what research should be done and defining a process through which interventions ought to be developed and evaluated. The project types also play an administrative role in the centers, as each type of project has different requirements for proposal requests and budgets. In the 20 years since IES's founding, however, it is now clear that this model does not account for the complexities of implementation, nor does it reflect what is now known about how evidence influences changes in practice and policy. Recognizing the need for an updated structure, the committee proposed five revised project types: Discovery and Needs Assessment, Development and Adaptation, Impact and Heterogeneity, Knowledge Mobilization, and Measurement. The revised project types call for research designs that address the highly varied landscape of U.S. education and that pursue questions grounded in the needs of communities, educators, and learners, which will increase the usefulness and use of research findings.

TOPICS

Within the five project types, the two centers organize research proposals by topics. The current set of topics do a good job of representing the field, but the way they intersect with the project types is problematic. Under the current structure, and because IES emphasizes designs that allow for causal inferences, topics that can be readily studied with causal designs tend to be rated higher by reviewers. In addition, the focus of NCER and NCSER on student outcomes means that studies focusing on other outcomes in the system are less likely to receive funding. As a result, some of the most important current topics in education have not received the attention they need.

NCER currently has 11 topics: career and education; civics education and social studies; early learning programs and policies; English learners; literacy; science, technology, engineering, and mathematics (STEM) education; cognition and student learning; effective instruction; improving education systems; postsecondary and adult education; and social and behavioral context for academic learning.

NCSER currently has nine topics: cognition and student learning; early intervention and early learning; educators and school-based service providers; families of children with disabilities; reading, writing, and language; STEM education; social, emotional, and behavioral competence; systems, policy, and finance; and transition to postsecondary education, career, or independent living.

The report recommends that NCER and NCSER add three topics:

- civil rights policy and practice,
- teacher education and education workforce development, and
- education technology and learning analytics.

The report recommends that NCSER add three topics:

- teaching practices associated with improved outcomes for students with disabilities,
- classroom and school contexts and structures that support access and inclusion to improved outcomes for students with disabilities, and
- issues specific to low-incidence populations.

To further expand the kinds of studies funded by NCER and NCSES, the report asks IES to consider expanding the criteria for evaluating proposals in two areas:

- Allowing the use of outcomes beyond the student level (classroom, school, institution, district) as the primary outcome

- Expanding the choice of research designs for addressing research questions that focus on why, how, and for whom interventions work

Looking ahead, the report recommends that IES institute a systematic, periodic, and transparent process for analyzing the state of the field and adding or removing topics as research and the field evolve.

RESEARCH METHODS AND DESIGNS

In accordance with its mandate, NCER and NCSER maintain a focus on causal research. Because causal questions are inherently comparative, however, descriptive work is also needed to conceptualize and describe current practices and the context of schools in order to fully understand the comparisons being made. In addition, questions of what works and how it works need to be addressed.

The report recommends that IES develop competitive priorities for research on methods and designs in five areas:

- small causal studies,
- understanding implementation and adaptation,
- synthesizing knowledge,
- predicting causal effects in local contexts, and
- utilizing big data.

The report also recommends that IES convene a new competition and review panel for supporting qualitative and mixed-methods approaches to research design and methods.

In part reflecting other recommended changes, the report recommends that IES give priority to developing a competition for four areas of measurement research:

- expanding the range of student outcome measures,
- developing and validating measures at levels other than the student level,
- developing and validating measures related to educational equity, and
- using technology to develop new approaches and tools for measurement.

TRAINING

The training supported by NCER and NCSER is an important and vital function that has helped strengthen education research, and it is important to continue. However, both agencies need indicators of the success of their training programs, as well as data on who is participating in them. There is a clear opportunity to build on current programs and respond to the high demand for training among researchers.

The report recommends that IES develop indicators of success for training, collect them from programs, and make this information publicly available.

The report also recommends expansion of the current training on methods in two areas: methods to address questions of how and why policies and practices work, and methods that use machine learning, predictive analytics, natural language processing, administrative data, and other like methods.

FUNDING PROCESSES

The explicitness of the requests for applications used by NCER and NCSER is one of the strengths of the IES grant review system, as is its review process. However, these strengths are undermined by some weaknesses in the processes. One is that the application process is quite lengthy and so hampers IES's ability to be timely and responsive to the educational research community. The report recommends that IES review and fund grants more quickly and reintroduce having two application cycles per year.

A more striking weakness is that IES does not publicly share information on its applicants, reviewers, and grantees so that it is not possible to determine whether the application and review processes result in an equitable distribution of awards, and, if not, where in the process disparities are introduced.

The report recommends that IES regularly collect and publish information on the racial, ethnic, gender, disciplinary, and institutional backgrounds of applicants and funded researchers, as well as the composition of review panels and study samples. More broadly, the report recommends that NCER and NCSER conduct a comprehensive investigation of their funding processes to identify possible inequities, covering application, reviewing, scoring, and monitoring progress. The resulting report can be expected to provide insight into barriers to funding across demographic groups and across research types and topics, as well as a plan for ameliorating any identified inequities.

FUNDING FOR EDUCATION RESEARCH

IES's ability to meet the goal specified in its creation—to provide “national leadership in expanding fundamental knowledge and understanding of education from early childhood through postsecondary study”—is constrained by a relatively modest budget in comparison with other federal science agencies. The many urgent research questions in the field of education and special education cannot be answered without adequate support. For this reason, the report recommends that Congress should re-examine the IES budget, which does not appear to be on par with that of other scientific funding agencies, nor to have the resources to fully implement this suite of recommendations.

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For More Information . . . This Consensus Study Report Highlights was prepared by the Board on Science Education based on the Consensus Study Report *The Future of Education Research at IES: Advancing an Equity-Oriented Science* (2022). The study was sponsored by the U.S. Department of Education. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project. The Consensus Study Report is available from the National Academies Press, (800) 624-6242 or <https://www.nap.edu/catalog/26428>.

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