

# LEVERAGING LEARNING

THE EVOLVING ROLE OF FEDERAL POLICY IN EDUCATION RESEARCH

DECEMBER 2013



THE ASPEN INSTITUTE  
EDUCATION & SOCIETY PROGRAM



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Any opinions, recommendations, and conclusions expressed in these resources are those of the individual authors and do not necessarily reflect the views of these foundations.

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## About the Authors

**Timothy Knowles** is the John Dewey Director of the University of Chicago’s Urban Education Institute and the John Dewey Clinical Professor in the Committee on Education.

**Nancy Kober** is a freelance reporter and education consultant who specializes in making education research and policy understandable to a broad audience.

**Jens Ludwig** is the McCormick Foundation Professor of Social Service Administration, Law and Public Policy at the University of Chicago and Co-director of its Urban Education Lab.

**Michael J. Petrilli** is Executive Vice President of the Thomas B. Fordham Institute, research fellow at the Hoover Institution, and executive editor at Education Next.

**Robert Slavin** is Director of the Center for Research and Reform in Education at Johns Hopkins University School of Education, Director of the Institute for Effective Education at the University of York (UK), and the co-founder and Chairman of the Success for All Foundation.

**Vivian Tseng** is Vice President of Programs at the William T. Grant Foundation. She spearheads its initiatives on increasing understanding of the use of research in policy and practice and improving research-practice connections.



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Though debates continue over the proper role of the federal government in many aspects of education, there is a broad consensus that federal investment in education research, development, and dissemination is vital for advancing the ability of the field to improve outcomes for all students.

This consensus should result in greater federal attention and increased investment, yet compared to other cabinet-level agencies, the Department of Education (ED) has the fewest resources dedicated to R&D. As a result, investments have not kept pace with emerging, urgent student needs. Furthermore, the fragmentation of research activities among agencies and legislation inhibits the impact of existing federal dollars. The R&D functions in education are not confined to the Institute for Education Sciences (IES) and are not exclusively contained in the authorizing legislation most responsible for those investments, the Education Sciences Reform Act (ESRA). For example, the Comprehensive Centers Program is housed within the Office of Elementary and Secondary Education within ED, while the Investing in Innovation (I3) Program, funded through the American Recovery and Reinvestment Act (ARRA), exists within the Office of Innovation and Improvement.

To catalyze innovation in education R&D, the Obama Administration has proposed to create a new unit of ED, called ARPA-ED, that would be analogous to the high-profile Defense Advanced Research Projects Agency (DARPA) in the Department of Defense. Since ESRA was enacted over ten years ago, IES has made great strides in upgrading the quality of education research. Despite these promising advances, the current federal approach to education R&D—too little investment, scattered across too many programs, with too little attention to dissemination—continues to both undermine and underestimate the capacity of the American education system to meet the pressing needs of students and of the country. The pending reauthorization of ESRA creates new opportunities to better harness the tremendous research capacity we have in America to turn broad consensus into broad benefit for our ever-more diverse schools and students.

In February 2013, the Aspen Institute Education & Society Program held a seminar with our network of senior Congressional education staff to discuss these issues. For the meeting, we commissioned a paper from education writer Nancy Kober on the history of the federal role in education research, and we developed a set of maps that provide an approximate view of the federal investment in education R&D. From those conversations, and many more with leaders in the policy, research, and practice community, we saw an opportunity to elevate and inform discussions on this important set of issues. So we refined these resources to share them more widely. We also offer new essays from a range of expert voices. Tim Knowles and Jens Ludwig, Vivian Tseng, Robert Slavin, and Michael Petrilli bring diverse perspectives to provoke new thinking about how the federal government can best leverage its resources to improve education research and development, and to ensure that the research makes its way to schools and classrooms for the benefit of students. We organize their essays to represent a spectrum from modest yet high-impact policy revisions to a total reimagining of the current research-to-practice pipeline.

We are hopeful that these resources contribute to a more robust discussion and to a renewed focus on the importance of getting high-quality, timely research into the hands of those throughout the system who can translate it into improved outcomes for all students.

Sincerely,



**Ross Wiener**  
Vice President and Executive Director  
The Aspen Institute Education & Society Program



**Christopher Cross**  
Project Director  
Senior Congressional Education Staff Network  
The Aspen Institute Education & Society Program



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# A Brief History of Federal Efforts to Improve Education Research

*Nancy Kober*

*Freelance Reporter and Education Consultant*

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## **Main Themes: Similar Criticisms, Similar Strategies**

Over the past six decades, Congress and the Executive Branch have taken a variety of actions to develop, expand, and improve a system of federal support for research in education. This paper describes the main federal legislative and administrative efforts undertaken in past decades to achieve this goal and the common themes that underlie these actions. The information is drawn from the legislative history and from analyses by individual scholars, policy experts, research groups such as the National Research Council, journalists, and others.

Similar criticisms of the federal role in educational research have been raised by multiple sources across several decades. Three criticisms in particular have come up time and again:

- The federal role lacks clarity and coherence of purpose.
- Federally funded research has problems with quality, usefulness, timeliness, and relevance to the classroom.
- The federal research agenda has been vulnerable to political and ideological influences.

Although policymakers have tried several approaches over the years to address these criticisms and shape the federal research agenda, Congressional and Administration leaders have relied most heavily on two strategies:

- Creating new federal agencies and federally supported research entities or restructuring existing ones
- Cutting or increasing annual budgets for education research and earmarking or restricting funds for specific activities

These themes weave throughout the history of federal efforts to improve education research. The key events and examples described below are intended to give a broad overview of this history; many other significant actions and examples have been omitted for brevity's sake.

## **Origins: Collecting Vital Education Statistics**

The main reason why the federal government became involved in education in the first place was to fulfill a need for national data on education. The mission of the first Department of Education, according to its 1867 authorizing law, was to “collect such statistics and facts as shall show the condition and progress of education in the several States and Territories” and disseminate information about schools and teaching that would “aid the people of the United States in the establishment and maintenance of efficient school systems.”

Data collection remained the chief activity of the Department (later the Office and then the Bureau) of Education for the next 90 years and continues today through the work of the National Center for Education Statistics (NCES). During these early years, research beyond collecting statistics was not considered a federal priority.

## Summary Table: Key Federal Efforts to Support Education Research

EVENT	YEAR INITIATED	AUTHORIZING LEGISLATION	PURPOSE
Federal collection of education statistics	1867	An Act to Establish a Department of Education (14 Stat. 434)	Collect statistics on the condition and progress of education
Federal funding for research projects	1954	Cooperative Research Act (P.L. 83-531)	Support field-initiated studies, primarily at universities
Education research and development centers	1964	Created by executive authority under Cooperative Research Act; codified in Elementary and Secondary Education Act of 1965 (P.L. 89-10)	Conduct large-scale basic and applied research in specific education fields
Regional educational laboratories	1965	Elementary and Secondary Education Act (P.L. 89-10)	Translate research into practice by conducting applied research, disseminating research findings, and providing technical assistance
National Institute of Education	1972	Education Amendments of 1972 (P.L. 92-318)	Strengthen leadership and improve the quality of education research
Office of Educational Research and Innovation	1979	Created by Department of Education Organization Act (P.L. 96-88); reorganized in 1985 by executive action; reauthorized in 1994 by Goals 2000: Educate America Act (P.L. 103-227)	Provide federal leadership and strengthen the educational research and development system; support high-quality research; improve educational techniques and training
Institute for Education Sciences	2002	Education Sciences Reform Act (P.L. 107-279)	Improve federal research, statistics, and evaluation; promote independence and scientific rigor of federally funded research

### The 1950s: Federal Support for Field-Initiated Research

The federal government began taking a more active role in education research in 1954 with passage of the Cooperative Research Act. This legislation made federal funds available for research projects proposed by universities, state education departments, and other entities. But this field-initiated approach “afforded little opportunity for federal officials to shape a national research agenda” and “eventually led to concerns about the fragmented and noncumulative nature” of the funded projects, according to *Research and Education Reform*, a 1992 report by the National Research Council (NRC).

## The 1960s: Centers and Laboratories

In 1964, the U.S. Office of Education under President Johnson sought to develop a more coherent means of supporting large-scale, long-term research on critical educational problems by establishing education research and development centers. Between 1964 and 1966, eleven such centers were created. In the absence of federal guidance on research priorities, each center proposed its own specialized areas of research. In 1965, Congress created a network of regional educational laboratories to develop and disseminate new curricula and teaching methods and adapt research for use in classrooms. By 1969, there were twenty laboratories serving designated regions of the country. In the mid 1960's, the Office of Education also created the Educational Resources Information Center (ERIC) to provide access to research information.

Appropriations for the federal centers and labs grew rapidly at first, although not to the level envisioned by their Congressional sponsors. Some center and lab products had a clear impact. A notable example was a seminal federally funded study—*Equality of Educational Opportunity*, better known as the Coleman report—published in 1966 by James Coleman and colleagues at a Johns Hopkins research center. This study marked an early attempt to document achievement gaps between black and white children and launched an ongoing debate about the impact of family background on disparities in educational outcomes. To cite another example of impact, the centers and labs supported influential research in cognitive science and produced innovative programs for mathematics instruction that were used by thousands of students.

During their first several years of operation, the centers and labs had difficulty fulfilling their ambitious goals. Key policymakers and others charged that the roles of these research entities were fuzzy and their work was fragmented, lacked value, and had not improved practice as much as intended. As a result of this dissatisfaction and other federal budget pressures, Congress cut funding for the lab program substantially, and fourteen labs were closed. Federal funding for the centers dropped from \$14.7 million in fiscal year 1968 to \$10.7 million in fiscal year 1970, and the number of centers was reduced to eight.

In the subsequent decades, the centers and laboratories have weathered ups and downs in funding and have undergone several changes in mission, number, and structure. They continue to play an important role in the federal education research landscape and receive about 10 percent of the current Department of Education research budget.

## The 1970s and Early 1980s: National Institute of Education

The Nixon Administration and key Members of Congress of both parties recognized the need to legitimize and upgrade the quality of federally supported education research. In 1972, the National Institute of Education (NIE) was created within the Department of Health, Education, and Welfare (HEW). The Institute inherited staff and programs from the HEW's Office of Education and from the Office of Economic Opportunity, the lead agency for anti-poverty programs. NIE's mission was to provide the federal leadership needed to build an effective system of educational research and development. It also had a mandate to expand knowledge about promoting equity.

The Institute was intended to draw the best scientific talent to the study of important issues in education, much as the National Institutes of Health and National Science Foundation did for their fields. To help achieve this goal, NIE was given a degree of independence to hire a permanent staff of scholars outside the civil service rules and to contract with other researchers.

“From its inception, NIE was rarely free of turmoil,” the 1992 NRC report observed. “Inadequate levels of funding hampered NIE's ability to sponsor major, long-term research projects.” In just one year, between 1973 and 1974, the NIE budget was cut in half—from \$136 million to \$65 million—and never exceeded \$80 million for the rest of its existence. The Institute had six directors and four acting directors in 13 years, which “did not allow strong, consistent leadership

to be established,” according to the NRC. During NIE’s lifespan, it also underwent several internal reorganizations. Most notably, when the U.S. Department of Education was created in 1979, NIE was placed within a new Office of Educational Research and Improvement (OERI) but retained a fair degree of autonomy.

In this climate of limited funding and organizational churn, NIE tried, with varying degrees of success, to respond to a host of competing demands. These included conducting research that was relevant to practitioners and disseminating the results; evaluating federal programs; fulfilling its equity mission through work focused on the needs of poor, minority, limited English proficient, and female students; and studying fundamental issues in education.

Among the more influential efforts supported by NIE were studies of the characteristics of effective schools, which helped to spawn the school reform movement, and research on reading skills, which culminated in the popular 1984 report *Becoming a Nation of Readers*. Research on early childhood education, career education, and school finance also helped NIE gain credibility among some knowledgeable stakeholders, as did a Congressionally mandated evaluation of Title I of the Elementary and Secondary Education Act and a mandated study of school violence and vandalism.

Through much of its existence, NIE faced ongoing efforts by the Administration and Congress to manage its priorities or exert political or ideological influence over its research agenda. In the early 1980s, for example, President Reagan fired all 15 members of NIE’s policymaking board, despite their staggered statutory terms, in the interest of moving the agency toward a more conservative research agenda. The newly appointed NIE director sent a letter to the President asserting that the federal government has no role in conducting education research, provoking a controversy that ended with the director’s resignation. Members of Congress, for their part, sought to shape the Institute’s agenda by earmarking funds for specific projects. When these earmarks were added to the funding reserved for the regional educational labs, centers, and the ERIC system, this left limited funding for new NIE initiatives or core priorities.

### **The late-1980s and 1990s: The Office of Educational Research and Improvement**

In 1985, Secretary of Education William Bennett abolished NIE, NCES, and the other semi-autonomous entities within OERI, citing his desire to eliminate superfluous layers of bureaucracy. The functions of these entities were merged into a reorganized OERI with offices for research, statistics, improvement of practice, and two other areas. Initially, this approach was “opposed by most education policymakers and researchers as unnecessary and a downgrading of the importance of research,” according to a 2001 analysis by University of Michigan professor Maris Vinovskis.

Over time, OERI was beset by many of the same problems as NIE. The 1992 NRC study of OERI “found an agency that has been challenged by several external difficulties over which it has little control, as well as several internal problems. The external problems begin with [...] controversies about the appropriate roles for federal education research and development. There have been attempts to make OERI serve political purposes, and the agency has been given marginal discretion over new initiatives. The agency has also been inadequately funded.” As a result, OERI had difficulty pursuing and disseminating the type of sustained, high-quality research that was likely to have an impact on critical education issues.

OERI could point to some accomplishments. In the 1980s and 1990s, the National Assessment of Educational Progress (NAEP) sponsored by NCES grew in technical sophistication and came to be seen as a respected source of national data on student achievement. NCES also improved its ability to produce high-quality data reports in a more timely way. Many innovative R & D programs were developed, piloted, and expanded with federal support; examples include computer-based instruction, research on student motivation, and programs to develop higher-order thinking skills. In addition, OERI-sponsored evaluations of federal programs had an impact on legislative actions. For example, a 1989 national assessment of vocational education pointed to the lack of targeted funding for disadvantaged students and the need to improve program quality. Influenced by these and other findings, Congress enacted amendments to the vocational education legislation that focused federal support on districts with concentrations of poor students, on

programs that integrate academic and vocational instruction, and on effective programs that produce the desired results, according to the 1992 NRC report.

At the same time, “only a few lines of research [were] sustained for the time needed to bring them to fruition,” the NRC concluded. “Few efforts are undertaken to synthesize and publicize what the agency has learned and accomplished. Quality control is uneven, and the agency rarely attempts to resolve debates on important issues of education research.”

Like its predecessor agency, OERI was pressured to take on activities beyond its core mission. One such example occurred in the 1990s, when the Clinton Administration used research funding to advance the work of the National Education Goals Panel and pursue development of national voluntary tests. This decision was criticized by some lawmakers and was ultimately overturned by Congress.

Policymakers of both political parties continued to use the legislative process to direct the Department of Education to spend research and development funding on specific activities. An example was a 1997 amendment sponsored by Congressmen David Obey (D-WI) and John Porter (R-IL) to provide federal funds to implement models of comprehensive school reform, such as the Success for All approach originally developed at a federally funded R&D center.

The OERI reauthorization of 1994, based on a proposal by Congressman Major Owens (D-NY), created a semi-independent advisory board for OERI as a way to shield the agency from political influence. The legislation also reorganized OERI around multiple institutes, each devoted to a specific educational problem. But despite growth in OERI’s budget during the George H.W. Bush and Clinton Administrations, the sizeable commitment needed to get the institutes off the ground was never provided, and the plan was abandoned.

## **The 2000s and 2010s: Institute of Education Sciences**

The most recent federal overhaul of the education research agency occurred in 2002, when Congress replaced OERI with a new Institute of Education Sciences. IES consists of three National Centers for research, statistics, and evaluation and regional assistance, plus a special education research center moved from the Office of Special Education and Rehabilitative Services.

One goal of this restructuring was to further buffer the agency from political influence by increasing its autonomy. Toward this end, IES is headed by an independent director with a six-year term and a higher rank than previous OERI directors. A new independent advisory board—a majority of whom must be researchers—has the power to formally approve the agency’s long-term priorities and peer review process.

Another goal of the IES was to strengthen the quality and scientific rigor of federally supported research. This was manifested by provisions in the IES authorizing law (as well as in the No Child Left Behind Act and other statutes) that require the Institute to support “scientifically based” research.

Since 2002, the overall budget for IES has increased, despite some interim years of flat funding. In 2012, close to \$600 million was appropriated for IES. This amount includes funding for NCES and the other national Centers, as well as for the regional labs and R&D centers and other major activities. A 2006 recompetition of the regional educational laboratory contracts led to new operators for some labs and a shift in mission for all labs toward more slow, rigorous research.

During its ten-year existence, IES has demonstrated independence on several occasions. For example, as Dickinson College professor Andrew Rudalevige noted in a 2009 article, the IES director “was careful to cast caveats upon education secretary Margaret Spellings’s claims that rising student test scores in 2005 offered ‘proof’ of NCLB’s effectiveness, adding in 2007 that widely divergent state standards for ‘proficiency’ in fact made it hard to judge NCLB’s impact.” Congress still has some control over the research agenda through budget and legislative decisions.

A report by the National Board for Education Sciences, the independent policy board for IES, cited improvements made by the Institute during its first five years in the “rigor, relevance, and accessibility of federally funded research,” while noting that much remains to be done to institutionalize and build on the gains. In a 2008 biennial report to Congress, “Russ” Whitehurst, the first IES director, pointed to numerous interventions that IES has found to make a difference in student outcomes, such as the Accelerated Middle Schools program.

IES has not been immune to controversy. For example, Whitehurst placed considerable emphasis on randomized, controlled trials as the “gold standard” of rigorous research methods, a position that some researchers and stakeholders felt was too narrow. This stance has softened somewhat under current director John Easton. Some lawmakers have also raised questions about what they see as a lack of IES-supported research on major challenges and policy issues facing education, such as teacher quality and teacher evaluation and the effects of the No Child Left Behind Act.

“Much progress has been made over the past nine years toward establishing IES as a significant contributor to foundational knowledge,” concluded a 2011 report by the American Educational Research Association. The report added that “relatively few proposals for modification of the current legislation can enhance even further the contributions of this small agency to the nation’s well-being.”

## Conclusion

The past six decades of federal support for education research could be characterized as a series of attempts to resolve the same fundamental questions. What is an appropriate mission for federal research agencies? How can the federal government support research that addresses the big questions in education and has an impact on teaching and learning? How can federal leadership improve the quality and reputation of the education research enterprise?

Over the years, policymakers have used similar strategies to address these questions. Chief among them is the strategy of changing the organization, autonomy, placement, and mission of the main federal agency that oversees research. But this has sometimes come at a price of unstable leadership, competing responsibilities, and the turmoil and delays associated with any reorganization.

Administration leaders and Congress have also used their executive, legislative, and budget powers to shape—some might say micromanage—the research agenda. While these strategies have often been used to address clear problems, they have also been applied to achieve political or ideological ends. The result, at times, has been a lack of coherence in the research agenda, energy spent on political battles, and unstable funding—in amounts that many would argue still fall short of what is needed to produce high-quality research with a demonstrated impact.

Even so, progress has been made over time in protecting the independence of the federal research agency, improving its reputation for scientific inquiry, and producing some studies that have changed education. The pending reauthorization of the education research authorizing legislation offers an opportunity to build on these accomplishments and address persistent problems.

## References and Further Reading

The information in this paper is drawn from a review of numerous papers, reports, and articles. Listed below are the sources, from among the broader group reviewed, that are cited in the text or provided the most relevant and extensive information.

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# WHICH FEDERAL AGENCIES CONDUCT RESEARCH RELEVANT TO EDUCATION?

## A SAMPLE

A constellation of federal agencies engages in research, development, and dissemination activities that impact the field of education, yet there is no one catalog of these activities. This map takes a step in that direction by offering a sample of the agencies and programs most involved in the development and dissemination of education research. It is necessarily a rough snapshot: There is no clear definition of a federal education program, much less a definition of one with a full or partial orientation toward research.\* The programs represent activities beyond the formal Office of Management and Budget definition of “research and development,” which is too constrictive to capture many federal activities that meaningfully inform practices for student learning. The map thus includes activities that influence but do not focus explicitly on K-12 education, as well as high-impact program evaluation, statistical collection, and technical assistance activities.

### **U.S. Department of Education (ED)**

In addition to high-profile grant programs like the Race to the Top Fund and Investing in Innovation (i3), ED supports and conducts research, development, and dissemination through a broad swath of programs. National research centers on disabilities and career and technical education complement 22 state-focused regional and content centers under the Comprehensive Centers Program. ED also partners extensively with other agencies, but its main vehicle for driving research is its research unit, the Institute of Education Sciences (IES).

### **Institute of Education Sciences (IES)**

#### **National Center for Education Statistics (NCES)**

NCES is the primary federal entity for collecting and analyzing data related to education. In addition to providing funding for PISA assessments, NCES houses the National Assessment of Educational Progress (NAEP) and National Assessments of Adult Literacy (NAAL), and it oversees state grants for longitudinal data systems.

#### **National Center for Education Research (NCER)**

NCER research programs are designed to produce research that is scientifically rigorous and relevant to the needs of education practitioners and decision makers. NCER also funds pre-doctoral and postdoctoral research training programs to invest in the training and development of the next generation of education researchers.

#### **National Center for Education Evaluation and Regional Assistance (NCEE)**

NCEE conducts unbiased large-scale evaluations of education programs and practices supported by federal funds; provides research-based technical assistance to educators and policymakers; and supports the synthesis and the wide spread dissemination of the results of research and evaluation throughout the United States. In addition to administering regional education lab contracts, NCEE houses the What Works Clearinghouse.

#### **National Center for Special Education Research (NCSER)**

Sponsors a comprehensive program of special education research designed to expand the knowledge and understanding of infants, toddlers and children with disabilities. It oversees six National Special Education Research Centers and works with the other three IES centers to develop and evaluate services for students with disabilities.



## National Science Foundation (NSF)

NSF engages in education research primarily through the Education and Human Resources Directorate (EHR, see below), but smaller programs of research are also housed in partner directorates. Under the President's FY 2014 budget proposal, 114 of 220 programs conducting STEM education activities would be consolidated under three agencies: the Department of Education, NSF, and the Smithsonian Institution.

### Education & Human Resources Directorate

The Education and Human Resources Directorate's (EHR) consists of four divisions: Graduate Education (DGE), Research on Learning in Formal and Informal Settings (DRL), Division of Research on Learning in Formal and Informal Settings (DRL), and Human Resource Development (HRD). DRL is the lead division on research in STEM learning. Due to NSF's focus on undergraduate and graduate STEM work, a number of programs in EHR and its partner directorates allocate small amounts each to the study of why students select particular majors and strategies for recruiting students to STEM studies.

## Department of Defense (DOD)

DOD conducts extensive basic and applied research relevant to education among its various armed services branches, a small fraction of which is represented in the map. DOD has dedicated funding to the Advanced Distributed Learning Initiative (ADL), which works to develop the state of the art in education and training through the use of technology and innovative learning methodologies. DOD also has done significant work in educational technology through the Office of Naval Research and its peer offices in other armed forces branches, as well as under DARPA, focusing heavily on "intelligent" tutoring models. DOD is also collaborating more heavily in recent years with ED on joint STEM-oriented projects.

## Health and Human Services (HHS)

HHS engages in many programs of R&D relevant to education, but most notable are ongoing evaluations of the Head Start pre-K program and work in the National Institutes of Health (NIH). The Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), under NIH, supports basic and translational research into how children develop school readiness skills, reading skills and related disabilities, and math and science cognition and related disabilities. These basic and translational scientific studies further our understanding of the genetic, neurologic, cognitive, behavioral, and social-emotional aspects of learning and reasoning—from both a normative and pathological developmental perspective—and provide the evidence base for a broad range of researchers to understand how children learn and grow, including those supported by other federal agencies, as the basis for more applied education research.

\* Government Accountability Office, *Overview of K-12 and Early Childhood Education Programs*, cover letter, 2010, [www.gao.gov/new.items/d1051.pdf](http://www.gao.gov/new.items/d1051.pdf).

<sup>1</sup> U.S. Dept. of Education, *FY2013 Budget Request to Congress by Program*, <http://www2.ed.gov/about/overview/budget/budget13/summary/13pbapt.pdf>.

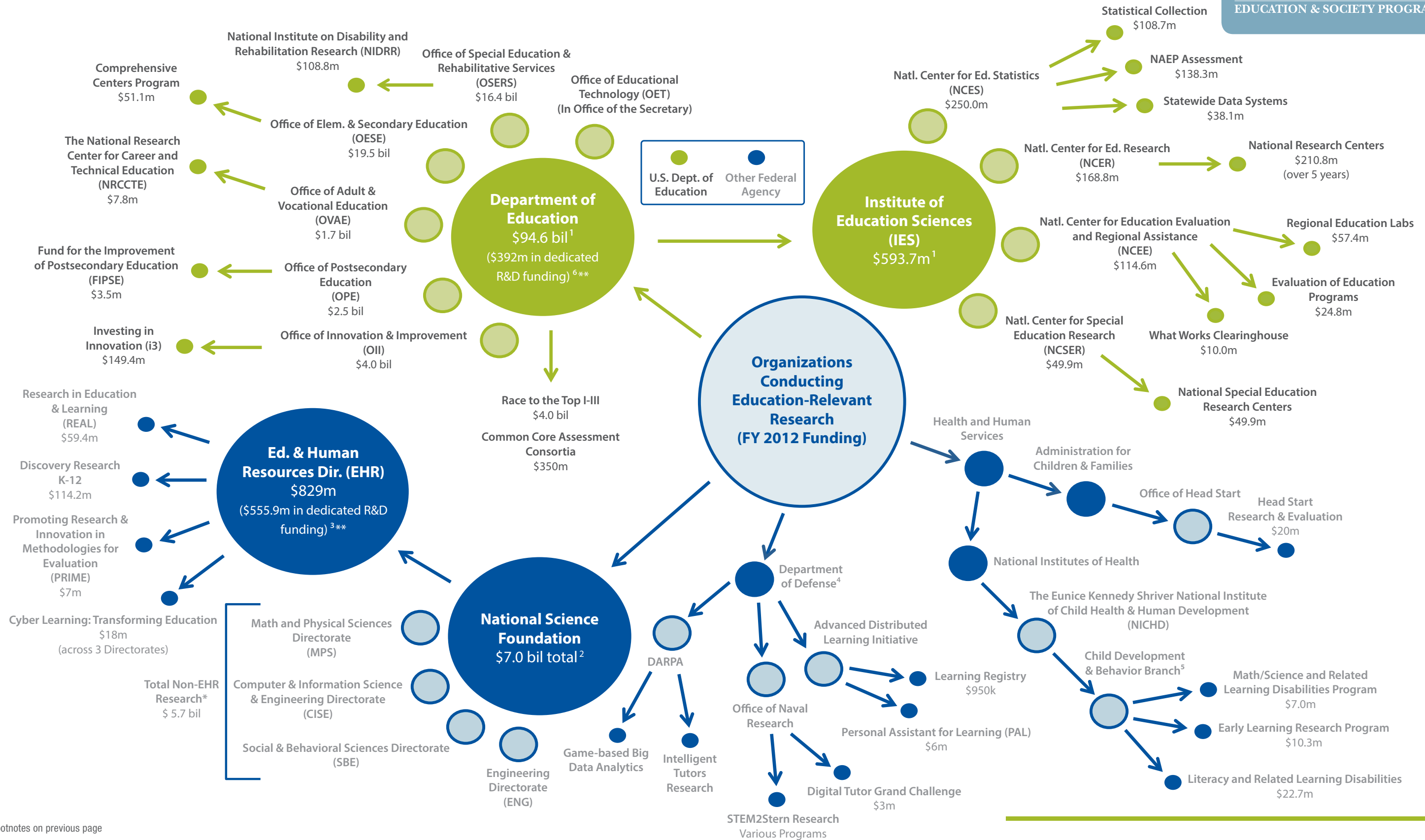
<sup>2</sup> National Science Foundation, *FY2013 Budget Request*, <http://www.nsf.gov/about/budget/fy2013/toc.jsp>.

<sup>3</sup> NSF Education & Human Resources Directorate, *FY2014 Budget Request*, [http://www.nsf.gov/about/budget/fy2014/pdf/12\\_fy2014.pdf](http://www.nsf.gov/about/budget/fy2014/pdf/12_fy2014.pdf).

<sup>4</sup> *Only one armed forces branch represented for sample*. Senior staff of represented offices, Department of Defense, November 2013.

<sup>5</sup> NICHD, *FY2013 Budget*, [http://www.nichd.nih.gov/about/budget/CJ/Documents/CJ\\_NICHD\\_2013.pdf](http://www.nichd.nih.gov/about/budget/CJ/Documents/CJ_NICHD_2013.pdf).

<sup>6</sup> American Association for the Advancement of Science. *FY2013 Appropriations Summary Table*. <http://www.aaas.org/spp/rd/fy2013/total13c.pdf>.



Footnotes on previous page

\*Note: The offices represented are not exhaustive within or across agencies, but rather a small sample of research activities. All figures unless otherwise noted represent total discretionary allocations, not exclusively funds allocated for education research. Figures do not represent changes in funding due to sequestration. Senior staff from cabinet-level agency provided feedback to arrive at represented programs.  
 \*\*Funding classified officially as "R&D" is narrowly defined as funding for basic and applied research that excludes activities such as program evaluation, technical assistance centers, training, or statistical collection. We include these activities to represent the spectrum of R&D and D activities impacting learning. The \$392m in Dept. of Ed. funding includes IES R&D funding under that narrow definition, while IES's budget figure reflects total discretionary appropriations.

## A Sample of Federal Agencies Engaged in R&D and Dissemination Relevant to Education

# REGIONAL EDUCATIONAL LABORATORIES

## THE INSTITUTE OF EDUCATION SCIENCES

### **Administering Office**

National Center for Education Evaluation and Regional Assistance (NCEE)

### **Authorizing Legislation**

P.L. 107-279, Title I (Education Sciences Reform Act of 2002), Part D, Section 174

### **FY 2012 Funding**

Annual Appropriation: \$57,426,000

Total Awarded to Date over 60 Months: \$341.9 million

Number of Awards: 10

Average Annual Award: \$6.8 million

### **Purpose and Mission**

The Regional Educational Laboratories (RELs) work in partnership with school districts, state departments of education, and other stakeholders to use data and research to improve policy and practice, and hence academic outcomes for students. RELs act as research partners, data and analysis coaches, and bridge builders for their constituent states and districts. They conduct peer-reviewed research and evaluation studies, provide technical assistance to assist systems in understanding and applying data and research, and connect education researchers with practitioners through public forums like workshops and webinars.

To ensure that REL scientifically based work meets the IES standards for research and evaluation, all REL fast-response project plans, evaluation study plans, and draft and final reports are required to pass a rigorous external peer review process established under NCEE.

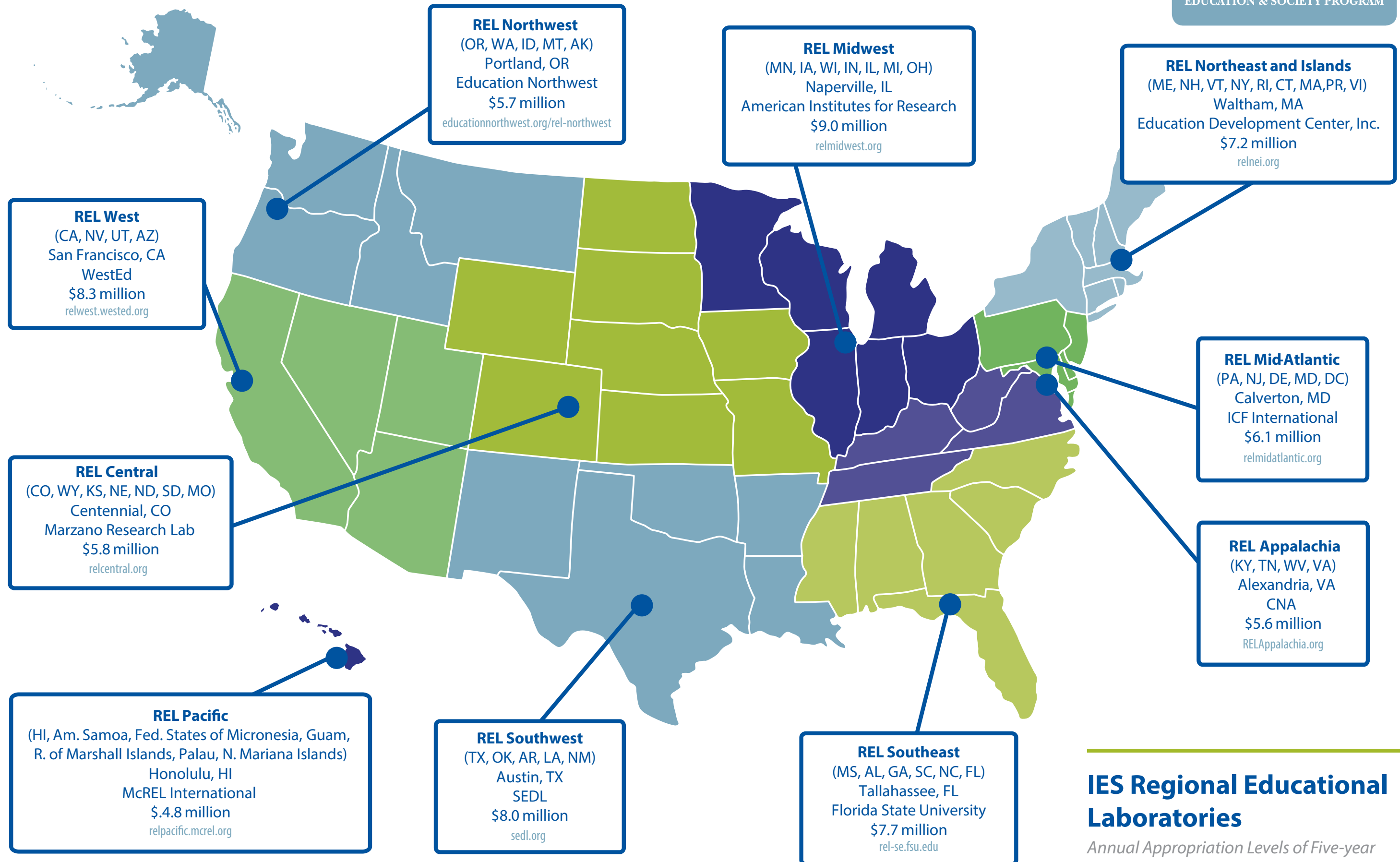
## **FY 2012 Contract Winners**

Each REL operates under contract to the Institute of Education Sciences at the U.S. Department of Education and is overseen by a Governing Board composed of key education stakeholders in the region. After a major overhaul of the labs' design, IES hopes to drive deeper improvements in capacity for research-driven practice through the latest round of five-year REL contracts, awarded in 2012. The program prioritizes five areas of study for 2012-2017:

- Identifying and retaining effective teachers and principals
- Increasing college readiness, access, and completion
- Enhancing early childhood education
- Improving low-achieving schools
- Adopting and implementing rigorous academic standards and assessments

The current group of RELs works in partnership with nearly 70 research alliances comprised of education practitioners and policymakers at the district and/or state levels. Each REL works with multiple alliances that focus on the region's high-priority education topics, but all maintain a concentration on the five program priorities.

**To learn more about the RELs, visit: <http://www.ies.ed.gov/ncee/edlabs/>**



## IES Regional Educational Laboratories

Annual Appropriation Levels of Five-year Contracts Awarded, FY 2012

# COMPREHENSIVE CENTERS PROGRAM

U.S. DEPARTMENT OF EDUCATION

## Administering Office

Office of School Support and Rural Programs  
(Office of Elementary and Secondary Education)

## Authorizing Legislation

P.L. 107-279, Title II (Educational and Technical Assistance Act of 2002), Section 203

## FY 2012 Funding

Annual Appropriation: \$ 51,113,213  
Number of New Awards: 22  
Average Annual Award: \$2,370,237

## Evaluation

In addition to its past five-year evaluations of the program, the Institute for Education Sciences is conducting a five-year project to build an ongoing evaluation system for the 22 centers, to be based on The World Bank's ongoing peer evaluation model.

## Purpose and Mission

The Comprehensive Centers Program awards discretionary grants that support 22 comprehensive centers to help increase state capacity to assist districts and schools in meeting student achievement goals under the Elementary and Secondary Education Act (ESEA). By statute, the Department is required to establish at least one center in each of the 10 geographic regions served by the Department's regional educational laboratories.



The 2012 reorganization of the comprehensive network reorganized the Regional Centers, increased the number of focus-area Content Centers, and reoriented the primary focus of technical assistance to states only. Therefore, the 15 Regional Centers provide services primarily to State Education Agencies (SEAs), while the 7 content centers focus on specific areas of expertise and may work directly with SEAs or through regional centers. Grantees are required to develop five-year plans for carrying out authorized activities that address state and regional needs.

### **15 Regional Comprehensive Centers**

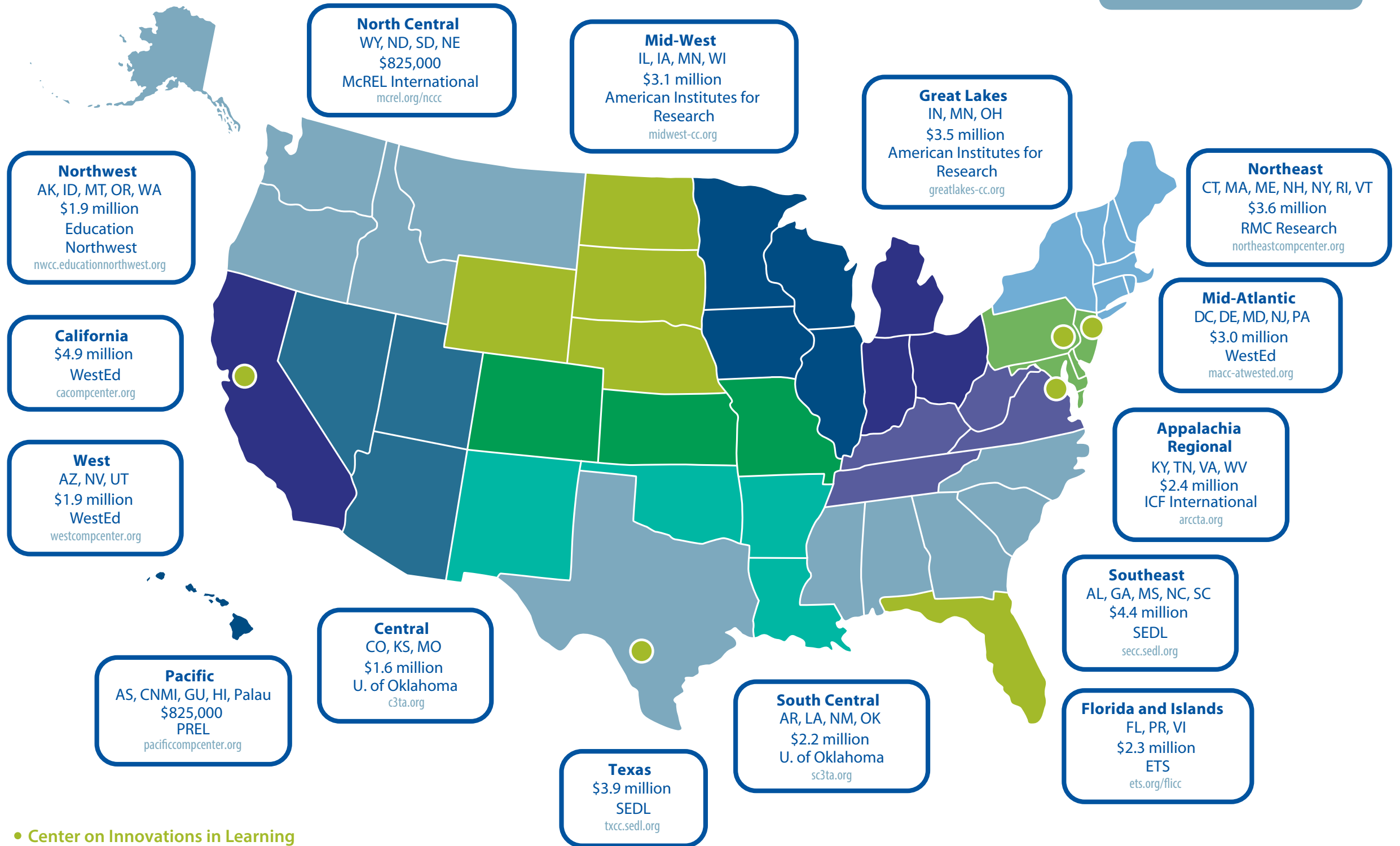
Regional Comprehensive Centers provide frontline technical assistance and training to states to help them implement ESEA and other related federal school improvement programs, as well as to help increase their capacity to assist their districts and schools. Regional Centers are embedded in their regions and responsible for developing strong comprised of education practitioners and policymakers at the district and/or state levels.

### **7 Content Centers**

Together, the seven Content Centers cover a spectrum of school improvement and technical assistance areas. Each of them is responsible for providing in-depth knowledge, expertise, and analyses in its focal area to the Regional Centers and the states they serve. Content Centers disseminate information about scientifically-based research on effective practice and researchbased products in their area of specialty and provide expertise that Regional Centers can use in delivering technical assistance to states.

## Content Centers

- Center on Standards and Assessment Implementation**  
 San Francisco, CA  
 WestEd  
 Partner: CRESST  
 \$1.4 million  
[csai-online.org](http://csai-online.org)
- Center on Great Teachers and Leaders**  
 Washington, DC  
 American Institutes for Research  
 Partners: CCSSO, Public Impact  
 \$2.5 million  
[gtlcenter.org](http://gtlcenter.org)
- Center on School Turnaround**  
 Sacramento, CA  
 WestEd  
 Partners: Academic Development Institute, Darden/Curry Partnership (UVA), NIRN  
 \$1.4 million  
[centeronschoolturnaround.org](http://centeronschoolturnaround.org)
- Center on College and Career Readiness and Success**  
 Washington, DC  
 American Institutes for Research  
 Partners: AYPF, the College Board, Quill Research Associates, NASDCTEC, Forum for Youth Investment  
 \$1.4 million  
[ccrcenter.org](http://ccrcenter.org)
- Center on Enhancing Early Learning Outcomes**  
 New Brunswick, NJ  
 Rutgers University  
 Partners: Education Development Center, CCSSO  
 \$1.4 million  
[ceelo.org](http://ceelo.org)
- Center on Building State Capacity and Productivity**  
 San Antonio, TX  
 Edvance  
 Partners: CRPE, Academic Development Institute, Edunomics Lab (Georgetown U.)  
 \$1.4 million  
[bscpcenter.org](http://bscpcenter.org)



- Center on Innovations in Learning**  
 Philadelphia, PA  
 Temple University  
 Partner: Academic Development Institute  
 \$1.4 million  
[centeril.org](http://centeril.org)

## Comprehensive Centers Network

As Appropriated in FY 2012



# NATIONAL EDUCATION RESEARCH AND DEVELOPMENT CENTERS

Since 2004, the National Center for Education Research (NCER) within the Institute of Education Sciences has funded nineteen National Education Research and Development Centers. The mission of the R&D Centers is to contribute to the production and dissemination of rigorous evidence and products that provide practical solutions to important education problems in the United States. The R&D Centers achieve this mission by developing, testing, and disseminating new approaches to improve teaching and learning, and ultimately, student achievement. Each of the Centers conducts a focused program of education research in its topic area and works cooperatively with NCER to conduct supplemental research and national direction in that area.

## Currently Operating with NCER Funding (by original grant year)

### Center for Analysis of Longitudinal Data in Education Research (CALDER)

American Institutes for Research  
\$10.0 million (2012) and \$12.0 million (2006)

### Center for the Study of Adult Literacy (CSAL): Developing Instructional Approaches Suited to the Cognitive and Motivational Needs for Struggling Adults

Georgia State University  
\$10.0 million (2012)

### Center for Analysis of Postsecondary Education and Employment (CAPSEE)

Columbia University, Teachers College  
\$10.0 million (2011)

### Center on Cognition and Mathematics Instruction

WestEd (Redwood City, CA)  
\$10.0 million (2010)

### Center on Scaling Up Effective Schools

Vanderbilt University  
\$13.6 million (2010)

### Center for Research on Rural Education

University of Nebraska-Lincoln  
\$10.0 million (2009)

### Center for Teacher Effectiveness: Validating Measures of Effective Math Teaching

President and Fellows of Harvard College GSE  
\$10.0 million (2009)

### Center on Cognition and Science Instruction

21st Century Partnership for STEM Education  
\$10.0 million (2008)

### Center on Instructional Technology: Center for Advanced Technology in Schools

UCLA  
\$9.8 million (2008)



**Center on Instructional Technology:  
Possible Worlds**

Education Development Center, Inc.  
\$9.2 million (2008)

**Originally Funded under NCER, Now Operating Under External Funding**

**Center for Postsecondary Research**

Columbia University, Teachers College  
\$9.8 million (2006)

**Center for Data-Driven Reform in Education**

Johns Hopkins University  
\$13.6 million (2004)

**Center on the Gifted and Talented**

University of Connecticut  
\$8.7 million (2006)

**Center on School Choice**

Vanderbilt University  
\$13.2 million (2004)

**Center for Research on Evaluation,  
Standards, and Student Testing (CRESST)**

UCLA  
\$12.5 million (2005)

**No Longer Operating**

**Center for Performance Incentives (NCPI)**

Vanderbilt University  
\$10.8 million (2006)

**Center for Research on the Educational  
Achievement and Teaching of English  
Language Learners (CREATE)**

University of Houston  
\$9.9 million (2005)

**Center for Research on Early Childhood  
Education**

University of Virginia  
\$11.0 million (2006)

**Center on Rural Education Support**

University of North Carolina, Chapel Hill  
\$17.2 million (2004)

\*R&D Center Awards are rounded to the nearest \$100,000. All R&D Center awards are for five years. However, several centers received additional time to complete their activities through no-cost extensions. The Center for Analysis of Longitudinal Data in Education Research received two consecutive five-year awards. Centers no longer receiving IES funding may still be conducting research with other funding sources.

Source: IES staff; NCER Research and Development Centers, [ies.ed.gov/ncer/randd/](http://ies.ed.gov/ncer/randd/).

# SPECIAL EDUCATION RESEARCH AND DEVELOPMENT CENTERS

The Special Education Research and Development Centers are funded through IES's National Center for Special Education Research (NCSEER)\*. The mission of the R&D Centers is to contribute to the production and dissemination of rigorous evidence and products that provide practical solutions to important education problems in the United States. The R&D Centers achieve this mission by developing, testing, and disseminating new approaches to improve teaching and learning, and ultimately, student achievement. The Centers focus their efforts by topic area and provide supplemental research and national direction on that topic in partnership with NCSEER.

## **Improving Reading and Mathematics Outcomes for Students with Learning Disabilities**

Vanderbilt University  
\$10 million (2013)

## **Center on Improving Mathematics Instruction for Students with Mathematics Difficulties**

University of Delaware  
\$9.9 million (2010)

## **Center on Reading Instruction for Deaf and Hard of Hearing Students**

Georgia State University Research Foundation, Inc.  
\$10.0 million (2012)

## **Center for Response to Intervention in Early Childhood**

University of Kansas  
\$10.0 million (2008)

## **Center on Secondary Education for Students with Autism Spectrum Disorders (CSESA)**

University of North Carolina, Chapel Hill  
\$10.0 million (2012)

## **Center on Serious Behavior Disorders at the Secondary Level**

Lehigh University  
\$10.4 million (2008)

## **Center on Assessment and Accountability for Special Education**

University of Oregon  
\$11.7 million (2011)

\*R&D Center Awards are rounded to the nearest \$100,000. All R&D Center awards are for five years. However, several centers received additional time to complete their activities through no-cost extensions. The Improving Reading and Mathematics Outcomes for Students with Learning Disabilities Center was funded through NCSEER's Accelerating the Academic Achievement of Students with Learning Disabilities Research Initiative.

Source: NCSEER Research and Development Centers (<http://ies.ed.gov/ncser/RandD/>), Accelerating the Academic Achievement of Students with Learning Disabilities Research Initiative (<http://ies.ed.gov/ncser/projects/program.asp?ProgID=78>), and IES staff.

# NATIONAL RESEARCH CENTERS FOR CAREER AND TECHNICAL EDUCATION

In 2006, Perkins IV legislation authorized the creation of a National Research Center for Career and Technical Education (NRCCTE) that included the functions of research, technical assistance, professional development, and dissemination. Between 2007 and 2012, the NRCCTE had been led by the University of Louisville in partnership with a consortium of institutions and organizations involved in CTE today. The grant was converted to a contract in 2012 and opened to for-profit competitors. RTI International now has a three-year contract to open a similarly missioned center while NRCCTE continues to operate largely from state technical assistance funding. Given their main activities, the two organizations below resemble comprehensive centers more than formal R&D centers.

## **National Research Center for Career and Technical Education (NRCCTE)**

University of Louisville  
\$19.9 million (2007-2012)

## **National Center for Innovation in Career and Technical Education (NCICTE)**

RTI International  
\$ 9.2 million (2012-2015)

# Investing in Innovation

*“We need innovations that improve outcomes, and that can and will be used to serve hundreds of thousands of teachers and millions of students.”*

– Arne Duncan

Office of Innovation and Improvement  
U.S. Department of Education

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## Investing in Innovation (i3) Overview

The i3 program, established in 2009 under the American Recovery and Reinvestment Act (ARRA), is managed by the Department of Education’s Office of Innovation and Improvement. The program supports the development of ambitious new efforts and the scaling of effective practices that improve K–12 student achievement, particularly among high-need students. Through a competitive grant competition, i3 provides funding to either local educational agencies (LEAs) or nonprofit organizations in partnership with LEAs or schools with proven records of improving student achievement. These grants can be for three to five years. Grantees’ projects focus on a range of issues in urban, suburban and rural settings, including:

- Improving teacher and principal effectiveness
- Improving student achievement in STEM
- Improving family and parental engagement
- Improving low-performing schools
- Improving outcomes for English learners and students with disabilities
- Supporting the effective use of technology

Two features of the i3 program are particularly notable:

- 1 The amount of funding for which grantees are eligible depends on the previously demonstrated level of effectiveness of their program.
- 2 All grantees are required—and receive extensive support—to conduct and publicly share a rigorous evaluation that assesses the impact of the i3-funded program.

## Three Types of i3 Grants

**Development.** Smaller grants to support high-potential but relatively untested projects; grants range from \$3–\$5 million. *There are currently 59 Development grants.*

**The Exploratorium Institute for Inquiry’s project Integrating English Language Development and Science: A Professional Development Approach** provides professional development to teachers at an elementary school in California’s Sonoma Valley School District to improve English learners’ language skills through science. In addition to supporting students’ science and language learning, students’ confidence in their English language ability has also improved.

**Validation.** Grants for programs with moderate evidence of effectiveness to expand their capacity; grants range from \$15–\$30 million. *There are currently 28 Validation grants.*

**University of Missouri’s eMINTS (enhancing Missouri’s Instructional Networked Teaching Strategies)** project is focused on changing teacher practices to improve student learning and build students’ 21st century skills. Teachers are developing engaging, standards-aligned, assessment-informed, classroom-level practices that employ technology. Data to date suggests that classroom instruction is being transformed and student learning in math and arts has improved.

**Scale-up.** Large grants for proven, broad-reaching programs, with strong evidence and track records of success; grants range from \$25–\$50 million. *There are currently 5 Scale-up grants.*

**The Ohio State University’s Reading Recovery** project prepares over 3,500 new Reading Recovery teachers in low-performing and rural schools, and schools with a high concentration of English learners. These teachers are working with 90,000+ students one-on-one, and 400,000+ students in small-group instruction. Initial findings indicate that Reading Recovery students are learning at a rate between 120% and 166% faster than comparable students.

## i3 By the Numbers

- Grantees
  - » 92 grantees total
  - » 49 from FY10
  - » 23 from FY11
  - » 20 from FY12
  - » 59 Development grants
  - » 28 Validation grants
  - » 5 Scale-up grants
- Dollars
  - » Nearly \$1 billion in federal funds invested from FY10 through FY12
  - » Over \$182 million in matching private funds to support i3 projects
- Students
  - » Over 1 million students (total) served in 2011 and 2012
  - » Building evidence of what works, for whom and in what context
  - » 76 projects are on track to meet the Institute of Education Sciences What Works Clearinghouse's (WWC) evidence standards

NOTE: In November 2013, The Department announced its 2013 25 Highest-Rated Applications for the i3 program. These applicants have until December 11, 2013 to secure 50% of their private-sector match funding. Applicants that secure funds become i3 grantees. Early in 2014, updated program information will be available, including number of total grantees, funding amounts, and areas of project focus.

## Building a Portfolio of Solutions

With 92 current projects expending over \$1 billion in federal and private funds, the i3 program represents a large portfolio of solutions to address some of the most important issues facing school leaders, teachers, students and families today. The program invests in innovation in two primary ways. First, the program supports promising projects that are new or untested. These projects, in turn, build evidence of which practices work, for whom, and in what contexts, while enabling the broader education field to learn about their impact. As promising practices are tested and evaluated, solutions that have proven impact to address some of the most pervasive and vexing problems in education begin to emerge.

The program also invests in innovation by supporting the scaling of effective solutions or interventions—whether previously supported by Department programs like i3 or otherwise. Supporting the expansion of proven interventions to serve large populations of high-need students across a range of contexts has the potential to dramatically enhance student performance nationwide. In addition, such efforts could ultimately displace widespread but less effective interventions.

Each i3 project, with the support of the Department of Education's staff and a range of external experts, has various tools to monitor their progress. This enables them to ensure that they are implementing their project with fidelity and on track to meet important project goals and milestones. Additionally, most projects have a "treatment" and a "control" group so that the project can be rigorously evaluated to understand the impact of the intervention or program. To date, 76 of the 92 projects are on track to meet the What Works Clearinghouse's evidence standards (note that this may shift as the projects and their evaluations evolve over time). Generating this kind of new information and enabling broad dissemination about i3-funded interventions is a key element of the program's commitment to knowledge development and sharing.

For more information, visit [www.ed.gov/programs/innovation](http://www.ed.gov/programs/innovation). Follow us on Twitter @ED\_OII

# Why We Need a DARPA for Education (ARPA-ED)

*And in the same way that we invested in the science and research that led to the breakthroughs like the Internet, I'm calling for investments in educational technology that will help create digital tutors that are as effective as personal tutors, and educational software that's as compelling as the best video game.*

– President Barack Obama announcing ARPA-ED proposal, March 8, 2011

## U.S. Department of Education **WORKING DRAFT**

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### Background

Effectively educating all Americans will be critical to maintaining our nation's economic competitiveness and our citizens' quality of life. Achieving our aspirations—ensuring every student is college- and career-ready and our nation is leading the world in college attainment—will require dramatic increases in student achievement, at all levels of the educational system, in a relatively short period of time.

Technology has transformed almost every aspect of society and could have a similar impact on learning: the ever increasing access to technology and subsequent access to information and content that technology affords, the ability to personalize for users, and the creativity and productivity technology has brought to so many other experiences.

Over the past 50 years, DARPA has had a transformational impact on America's military and our nation's economy by making investments in high-risk, high-return research and development (R&D) and gathering the best minds in key fields (both at DARPA as program managers and as funded researchers). This has led to advances like the Internet, GPS, and stealth technology.

The nation needs a similar capability to accelerate transformative innovation in education and learning, particularly learning technology—taking advantage of advances in information and communications technology (e.g., low-cost networked devices, cloud computing, machine learning, speech recognition technology) and building on recent advances in the science of learning (e.g., neuroscience, cognitive psychology).

That's why the President's recent budget proposals have called for the creation of an Advanced Research Projects Agency—Education (ARPA-ED) to aggressively pursue technological breakthroughs that transform educational technology and empower learning and teaching.

### Rationale

The substantial potential of technology to assist learning is unrealized: research has shown that the education sector is among the least-changed by the information technology innovations that have revolutionized other parts of the economy<sup>1</sup>.

This limited investment in R&D in part means that promising research discoveries often are not translated into innovations that can make a difference for students and teachers.

One reason is that research and development (R&D) accounts for only 0.2 percent of total national K-12 expenditures<sup>2</sup>. In contrast, knowledge-intensive sectors of the economy invest 10-20 percent of sales in R&D, and even mature industries devote 2 percent of sales to R&D<sup>3</sup>.

Advances empower both students and teachers. Too often, teachers are expected to diagnose learning needs for a classroom full of students and differentiate instruction with little more than a textbook and a blackboard. ARPA-ED would provide teachers with tools that make them far more effective like those that doctors, engineers, and other professionals take for granted.

DRAFT DOCUMENT. PLEASE DO NOT REPUBLISH OR REDISTRIBUTE.



IT-based solutions have the potential to scale rapidly, since the marginal cost of making software and digital content available to more students is low.

American leadership in learning technologies can also create a new growth industry. Other nations have recognized the importance of using technology to empower teaching and learning. South Korea, already one of the world's highest-performing school systems, recently announced that by 2015 the entire K-12 curriculum will be digital-based<sup>4</sup>. Uruguay has rolled out a “one laptop per child” initiative and is building on top of that infrastructure<sup>5</sup>. Investments by DARPA laid the groundwork for the Internet and GPS, both multi-billion dollar industries employing thousands of Americans, and in much the same way ARPA-ED could catalyze a new domestic and export industry.

### Examples of where promising research could lead to impact

ARPA-ED would help address that underinvestment and accelerate the impact of technology on learning. It will complement and build upon innovative work being done across the public sector and the private sector, and could catalyze projects like:

- Digital tutors that are as effective as personal tutors, moving the average student from the 50<sup>th</sup> percentile to the 98<sup>th</sup> percentile<sup>6,7,8</sup>
- Instructional designs and tools that take advantage of technology and learning sciences research to dramatically improve teacher effectiveness (greatly improving student outcomes or reducing the time to learn content)<sup>9,10</sup>
- Courses that improve the more students use them, based on analyzing user data to identify patterns, tailor results to users' preferences, and provide a more individualized experience (much like consumer companies like Netflix or Pandora already do)<sup>11</sup>
- Discovery games and software that not only teach students advanced topics in core academic subjects but also contribute to scientific discovery—and, in so doing, make students' classroom experience authentic and relevant again<sup>12,13,14</sup>
- Low-cost networked devices that use advances in speech recognition and text-to-speech to teach early literacy and reduce the large gap in the size and sophistication in vocabulary size between young children in rich and poor households<sup>15,16,17,18</sup>

### Demand Strategies for ARPA-ED

To achieve success, ARPA-ED not only must invent technologies that have the potential to improve student achievement but also help transition and implement successful projects that make demonstrable improvements in student achievement, particularly for the highest-need students.

Unlike DARPA, after which ARPA-ED is modeled, and its relationship with the U.S. military, there is no unitary, large purchaser of the tools and products that ARPA-ED will develop. Thus, there is no single adoption and implementation pathway to scale. Successful ARPA-ED projects will need to explore a range of strategies for follow-on funding and adoption.

The Department has identified multiple strategies for supporting the transition and implementation of ARPA-ED projects beyond the period of federal funding. After ARPA-ED starts up, one of the critical early activities of the initial staff will be to formalize these strategies and identify others.

**Demand side strategies.** Different industries have explored a range of strategies to create intelligent demand and increase the ability of adopters to guide markets. In particular, the global health community has used a tool called Advance Market Commitments to create purchase orders for vaccines that do not exist, in order to signal a ready-made market that providers could address. Another approach, purchasing consortia, has been used effectively in education: New Hampshire, Vermont, Rhode Island, and Maine formed a consortium called the New England Common Assessment Program to buy testing materials together, getting a higher quality product at a lower cost.

**Partnerships with early adopters.** Several organizations with substantial purchasing power have expressed interest in being early adopters of advanced education technologies. In a recent Presidential Study Directive on Military Families, the Department of Defense committed to making the Department of Defense Education Authority a leader in the use of advanced learning technologies<sup>19</sup>. In the civilian sector, the League of Innovative Schools, a project of Digital Promise, is convening districts and schools that are interested in being test beds for innovation in education technology, helping validate the most advanced technology and bring it into practice.



**Commercialization support.** The Advanced Research Projects Agency-Energy (ARPA-E), within the U.S. Department of Energy, also does not have a single purchaser and must confront a diffuse market for bringing its products into use. ARPA-E considers prospects for commercialization as a factor in selection of its performers and then aggressively supports its funded projects through an in-house commercialization group, helping performers identify potential customers and develop a go-to-market strategy while they are advancing their technology.

In addition to structural supports to help ARPA-ED projects reach students and teachers, there are other reasons to believe that if ARPA-ED can achieve its ambitions, adoption will follow.

**Response to outsize performance.** Products that emerge to address specific needs in education—such as the tools developed by Wireless Generation or the instructional videos provided by Khan Academy—have been able to expand substantially in reasonable time periods. Because ARPA-ED is focused on specific projects that will create tools and capabilities of practice value and substantial impact, these examples provide strong reason to believe that the market will respond to outsized performance.

**Existing momentum.** ARPA-ED will begin its work with the benefit of current efforts such as the state-led work on common standards that has put over 40 states on track to share common standards in mathematics and English language arts, as well as aligned assessments. The efforts of the National Governors Association and the Council of Chief State School Officers to establish nationwide yardsticks support education research and development generally and will particularly assist ARPA-ED by enabling the organization to develop solutions relevant for large numbers of students.

While commercialization and scale will be substantial challenges to the success of ARPA-ED, the strategies listed above and others that will emerge can help address the challenge. Success in that effort will be beneficial not only to ARPA-ED, but can also increase informed and intelligent demand across the entire market for educational content, materials, and services.

- 1 [http://www.esa.doc.gov/sites/default/files/reports/documents/dig\\_econ\\_2003.pdf](http://www.esa.doc.gov/sites/default/files/reports/documents/dig_econ_2003.pdf)
- 2 <http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-stemed-report.pdf>
- 3 [http://www.booz.com/media/uploads/Innovation\\_1000-2009.pdf](http://www.booz.com/media/uploads/Innovation_1000-2009.pdf)
- 4 <http://www.edweek.org/ew/articles/2011/08/10/37korea.h30.html>
- 5 [http://www.olpcnews.com/countries/uruguay/uruguays\\_plan\\_ceibal\\_unveils\\_its\\_plans\\_for\\_2011.html](http://www.olpcnews.com/countries/uruguay/uruguays_plan_ceibal_unveils_its_plans_for_2011.html)
- 6 <http://www.comp.dit.ie/dgordon/Courses/ILT/ILT0004/TheTwoSigmaProblem.pdf>
- 7 <http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA422304>
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- 19 **PSD-9, Strengthening our Military Families.** “DOD commits to making DOD Education Activity (DODEA) schools a leader in the use of advanced learning technologies that have the potential to significantly improve student performance. DOD will invest in research, development and demonstration projects that involve DODEA schools, building on relevant research by agencies such as the Defense Advanced Research Projects Agency and the Office of Naval Research. Examples of advanced learning technologies include software that is as effective as a personal tutor, engaging and compelling games for learning, student-authored and sharable simulations, and online courses that improve the more students use them.” [http://www.defense.gov/home/features/2011/0111\\_initiative/strengthening\\_our\\_military\\_january\\_2011.pdf](http://www.defense.gov/home/features/2011/0111_initiative/strengthening_our_military_january_2011.pdf)

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# Strengthening the Education Sciences Reform Act: Fostering Innovation and Efficiency through Mechanism Experiments

Timothy Knowles and Jens Ludwig<sup>1</sup>  
University of Chicago

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The US Department of Education founded the Institute of Education Sciences (IES) with a primary focus on running randomized experiments; its annual budget in recent years has been a little under \$600 million.<sup>2</sup> What have we gotten from this investment? In testimony to the House Ways and Means Subcommittee on Human Resources in July 2013, Jon Baron, President of the Coalition for Evidence-Based Policy, noted: “Of the 90 interventions evaluated in randomized trials by the Institute of Education Sciences (IES) since 2002, approximately 90% were found to have weak or no positive effects” (Baron, 2013, Coalition for Evidence-Based Policy, 2013).

Given this track record, what should Congress do as it considers re-authorization of the law that initially created IES back in 2002 (the Education Sciences Reform Act)? One possibility is to give up on the IES focus on randomized experiments. Another would be to give up on IES altogether. We think either would be a mistake. The initial motivation for IES to focus on experiments comes from the difficulty of non-experimental methods and data in isolating causal relationships between student learning and different educational policies and practices. While non-experimental research is important, its limitations have not gone away.

A more constructive response would be to figure out ways of getting more bang-per-buck from the money IES spends on randomized experiments. Specifically we think there would be great value in having IES take a broader view of the sort of experiments it will support to include more “mechanism experiments.” Unlike experiments that test a policy or program (what we call standard “policy evaluations”), mechanism experiments test the key mechanisms-of-action through which policies or programs might affect student learning. By undertaking more mechanism experiments, IES could increase the chances that the full-scale policy experiments that it does fund will show beneficial

impacts and—overtime—improve the quality of teaching and learning in the American school house and beyond.

## Mechanism Experiments

What is a mechanism experiment, and how does it differ from, and relate to, a large-scale randomized trial evaluating a new policy or program? A mechanism experiment does not test a policy, rather it directly tests a causal mechanism that could underlie a policy. Sometimes such experiments can generate much more information per dollar spent about a policy than directly testing the policy itself.

***“A mechanism experiment tests a causal mechanism that could underlie a policy instead of the policy itself.”***

Consider for example the question of whether converting public high schools to “small schools” can improve student achievement. Why might that be the case? Or put differently, what are the mechanisms through which a small school might promote student engagement with school? One possibility is that students might form stronger bonds with school staff in smaller schools. The logic model for this policy is: small schools → bonding → student learning.

How would we test whether small schools are actually as helpful as some people hope? The most obvious way to do this would be to carry out a policy evaluation—randomly assign some schools but not others to

receive the small school reform then compare the effects on student learning in the two types of school environments. While that sort of policy evaluation could be useful, it would typically be incredibly costly, since the costs of the intervention per school are significant and the number of schools that would be required to allow for statistical measurement of program impacts would be large.

But suppose that educators and policymakers already felt confident that smaller schools promote student bonding, but were unsure about whether greater student bonding with teachers would translate into improved student learning. (That is, policymakers felt they understood the small schools → bonding link but did not understand the bonding → student learning link). The large-scale policy evaluation that randomizes some schools to become “small schools” and others to continue operating under the status quo model might not be the most cost-effective experiment to test the value of smaller schools. The reason is that the policy evaluation expends resources testing both links of the chain in the logic model, and doesn’t capitalize on the fact that we think we already know something about one of them.

Consider instead, this alternative. Identify a set of schools, and within those schools assign some teachers but not others the opportunity to earn overtime pay to work after school and on weekends with small, randomly selected groups of students, in an effort to promote faculty-student bonding. If this mechanism experiment found no effect of improved faculty-student bonding on student learning, would that change the thinking of policymakers about the value of small schools? Would we even need to run a full-scale policy evaluation?

To extend this example, suppose that the results of the mechanism experiment were positive—increased student-faculty bonding improved student learning. If policymakers were extremely confident in their understanding of the small schools → bonding link, and if carrying out a full-scale policy evaluation were costly enough, they might choose to adopt the policy straight away. If policymakers were unsure about the small schools → bonding relationship, or if an evaluation of this policy were not overly expensive compared to the cost of carrying out the actual policy itself at scale, policymakers might wish to follow the successful mechanism experiment with a full-blown policy evaluation. But the mechanism experiment has now served as a useful filter to increase the chances that

the policy evaluation will generate positive results. That is, mechanism experiments can increase the efficiency of the IES policy-evaluation portfolio by helping weed out “bad bets” in advance.

Another type of mechanism experiment that can serve this function is one that delivers an intervention that mostly looks like a policy that might be adopted, but is administered at a much higher dose than would ever be done at large scale. The value of this sort of mechanism experiment relative to a policy evaluation that delivers a more realistic dosage is that the former (but not the latter) can help shut down an entire line of inquiry. Consider a conditional cash transfer intervention (CCT) that pays parents or students some amount contingent on how the student does in school. If we carried out a policy evaluation of the sort of CCT payments that might be adopted at scale did not find statistically significant results, there would always be the question of whether a slightly more generous payout structure would generate more pronounced results. If we started with a mechanism experiment that applied a massive dosage but still found no effect, we could avoid the expense of carrying out subsequent CCT policy evaluations.

## Implications for IES

Our argument here runs counter to the critique that was leveled by many economists against the large-scale social experiments carried out by the federal government in the 1970s and 1980s for “not necessarily test[ing] real policy options” (Harris, 1985, p. 161). We think this represents an overly narrow view about what sorts of randomized experiments can have value for education policy. Mechanism experiments can also play a crucial role.

We note that IES does currently support some “tier 1” and “tier 2” experiments that might be considered mechanism experiments. Some of these experiments test interventions applied at some “dosage level” that is much higher than what policymakers might actually implement at large scale.

***“Mechanism experiments can help increase the social good per IES dollar spent.”***

Broadening our view of what sorts of experiments are valuable for education policy to include mechanism experiments can help increase the social good per dollar spent that derives from the IES research budget. This occurs both directly, in some cases by helping rule out candidate policies at lower cost than can be done with a large-scale policy evaluation, and indirectly, by helping winnow out bad bets for experiments to increase the odds of success for the policy evaluations that are carried out.

Put differently, mechanism experiments should best be thought of as complements to, not substitutes for, policy evaluations. We would not argue that the optimal portfolio of IES experiments should consist exclusively of mechanism experiments. Rather, increasing the share of the IES research portfolio devoted to this type of research activity might increase the odds that Jon Baron can report out more optimistic statistics in 10 years at the next re-authorization of IES.

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<sup>1</sup> The arguments presented here build on: "Mechanism Experiments and Policy Evaluations," by Jens Ludwig, Jeffrey R. Kling, and Sendhil Mullainathan, in *The Journal of Economic Perspectives*. Vol. 25, No. 3 (Summer 2011), pp.17-38. Thanks to Jeffrey Kling for helpful comments.

<sup>2</sup> U.S. Department of Education, *Presidential Budget Justification 2014*. <http://www2.ed.gov/about/overview/budget/budget14/justifications/x-ies.pdf>.

# Strengthening the Use and Usefulness of Education Research

*Vivian Tseng*

*William T. Grant Foundation*

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The Education Sciences Reform Act (ESRA) of 2002 launched a period of greater rigor in education research, especially for “what works” studies examining whether programs demonstrate impact. The challenge ahead is strengthening the relevance of education research, without sacrificing the rigor.

Below I discuss six issues pertinent to the reauthorization of ESRA, focusing on ways to improve the use and usefulness of education research.

**1 Relevant to whom?** Calls to make research more relevant have been ringing for decades, but doing so proves challenging. In part, this is because the criteria for judging relevance are not clearly defined. This includes lack of consensus as to whom research should be relevant.

ESRA reflects this challenge. The Act includes a long list of would-be research users: teachers, administrators, librarians, other practitioners, parents, policymakers, voluntary organizations, professional associations, the media, the general public, and researchers themselves. This list makes a great deal of sense given that federally funded research should serve the public interest. But, this far-reaching mandate also presents a big lift. After all, different stakeholders look to research to resolve varying questions and concerns, and satisfying everyone equally is not an easy task.

In other writing, I have argued for greater attention to the research needs of state and local education agencies. No Child Left Behind, Race to the Top, and the Investing in Innovation (i3) program have sought to promote the use of research in state and local decisions about curricula, professional development, turning around low-performing schools, evaluating teachers, and improving student test scores. There is still a sizable gap, however, between the research available to districts and their needs. Reauthorization of ESRA could signal a stronger focus on identifying and addressing the research needs of state and district decision-makers.

**2 Relevant for what questions?** Congress’ reauthorization of ESRA provides a useful juncture to pause and reconsider the goals for federally funded research. Over the past decade, federal efforts have increasingly focused on building knowledge of what works. That agenda has provided a practical focus for the education research community. For district administrators, however, it has not provided enough relevant information to make decisions locally. Knowing what has worked elsewhere is only somewhat useful. What districts need to know is whether a program, curriculum, or professional development strategy will be right for their local context and, if so, how they should implement it. This suggests broadening the “what works” agenda to build evidence of what works for whom and under what conditions. It also entails better addressing districts’ implementation concerns. Researchers often study implementation in terms of dosage (how much of the program was delivered) and fidelity (how closely the services delivered match the original model). This is a more limited look into implementation than what district leaders and administrators actually need. They require knowledge of how to align financing, staffing, and training—among other things—to achieve effects.

There are reasons to believe that an even broader research agenda would be fruitful. According to the Coalition for Evidence-Based Policy, the Institute for Education Sciences (IES) has funded 90 interventions evaluated by randomized control trials (RCTs) since 2002. Approximately 90 percent of them found weak or no positive effects.<sup>1</sup> Focusing narrowly on a “what works” agenda is an exercise in frustration unless it is balanced by other types of research that generate new ideas and deeper knowledge of the persistent challenges in education. Others also worry that the “what works” agenda encourages districts to chase silver bullets, and that simply adopting a new program shown to work in other contexts will not improve their systems. They can’t simply “program” their way out of problems, and research needs to help them understand how to build stronger systems.



**3 Build Research-Practice Connections.** In order to improve relevance, researchers must have ways to learn about the information needs of education decision-makers. Researchers, policymakers, and practitioners work in separate worlds with different incentives, goals, language, and rewards. They also work at very different paces. If work continues in separate spheres with little infrastructure connecting them, the ability to make research more useful and to get it used will remain stunted.

Researchers and would-be research users need opportunities to interact at the beginning when research agendas are formulated. Considering state and district needs only after studies are completed and findings are ready to be distributed is too late. Interaction on the front-end enables researchers to make informed choices in study designs, measurement plans, and sampling choices to address decision-makers' questions.

Research-practice partnerships have emerged as one promising strategy for researchers to collaborate with districts and states to define research agendas jointly.<sup>2</sup> Partnerships are popping up in cities across the country—Baltimore, New York, San Diego, Kansas City, Los Angeles, Houston, and New Orleans. At the federal level, IES began supporting partnerships through a new RFA; they are also funding regional research alliances through contracts for the Regional Education Labs.<sup>3</sup> These partnerships depart from the typical way researchers and districts work together through one-off projects or consultations. Instead, through these partnerships, researchers and districts engage in long-term collaborations that are designed to help practitioners address more complex problems over time.

In addition to supporting partnerships, a crucial role for the federal government is to connect the lessons learned across districts and states and to disseminate that information broadly and to the right stakeholders. Successful partnerships—like marriages—are not made overnight. They confront the challenges of developing research agendas that meet multiple stakeholders' needs, navigating the different timeframes between research and practice, maintaining trust even when research findings can damage districts' public images, and preserving collaboration as district leadership changes. Some partnerships are developing smart strategies to address these challenges, but there are few mechanisms to aggregate and share these strategies.

Progress rests on incentivizing and rewarding research-practice connections. The current system rewards researchers for publishing in academic journals. While the peer review process helps to ensure the scientific quality of research, it does little to address the usefulness of research for policy and practice. Incentive systems should encourage the strongest researchers to focus on the persistent problems of policy and practice. Moreover, if future generations of scholars are to be more apt than their predecessors at conducting relevant research and communicating it clearly, they will need better training than is currently available. They will need to develop the skills for collaborating with policymakers and practitioners in designing research, writing for them, and helping them understand what existing research suggests for improving their work.

**4 Strengthen rigor for different types of research.** IES has greatly improved the field's capacity to conduct randomized controlled trials, but scant attention is focused on improving the rigor of other types of research. Relevant research starts by asking the right questions—when the question calls for assessing the impact of a program, RCTs are the best available research design. But when other questions arise—as they always do—RCTs are not necessarily suited to addressing them. For example, states and districts across the country are designing and implementing new teacher evaluation systems. They need research to help them with strong measures of teaching, ways to combine different measures into indices, and ways to implement teacher evaluations in personnel and professional development decisions. IES provided the national leadership to develop standards for rigor in addressing “what works” questions—standards that have influenced fields outside of education. It can build on and expand that success to strengthen rigor for other types of education research.

**5 Rethink dissemination and promote engagement.** Producing relevant research only gets us part way down the road to research use. Dissemination activities get us a bit further, but those too are insufficient to promote the uptake of research. That is because using research is not simply a matter of transferring research “facts” from researchers to decision-makers, who then apply them. Using research involves busy policymakers deciphering what research means for their local context and determining its implications given their goals, resources, and the political ramifications of any decision. To do that, they need opportunities

to engage with researchers to discuss research implications for their local circumstances and to translate it into concrete actions.

Moreover, we have overly relied on written products and websites as dissemination tools and underestimated the value of strong networks and trusted relationships. State and local agencies often look to their peers working in similar contexts and to key intermediaries—professional associations, technical assistance providers, consultants—as sources of research and for judgments of its credibility. Despite the importance of these relationships, the research community rarely leverages them to enhance research dissemination and use. Future efforts should try to identify these trusted brokers and collaborate with them to ensure that the advice they provide is informed by research and that they are strong conduits for communicating research.

- 6 Maintain IES' role as an honest broker.** The independence of federally-funded education research has never been more important. The marketplace of education research is becoming ever more complex as Foundations, vendors, advocacy groups, and think tanks promote research

to support specific reform agendas and products. This proliferation of research may have its benefits, but there are also limitations. School districts are barraged with products and services marketed as research-based, and many have limited time and capacity to ferret through those claims and judge their credibility. The problem is exacerbated in some places by diminished research departments and capacity during the recession. As IES strives to increase the relevance of research, it must continue to produce nonpartisan work and to communicate it as an honest broker.

In the last decade, federal policy has put research front and center in education reform. ESRA set federally funded education research on a promising path, and reauthorization of it can take the field further down the path to relevance and impact. To do that, we will need to address a few issues: focus on state and local decision-makers as research users, address the questions relevant to them, and ensure rigor in studying those questions. It will also require a stronger infrastructure that connects research and practice, progresses from dissemination to engagement, and maintains IES' role as an honest broker.

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# New Directions in Education Research: The Federal Role

*Robert E. Slavin*  
*Johns Hopkins University*

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The United States spends more on education than most developed nations, but levels of achievement of American children remain mediocre by international standards. On the National Assessment of Educational Progress, reading scores have hardly improved since 1980, and math scores have made only modest gains. Achievement gaps by race and social class have hardly diminished. All of this is true despite constant federal and state tinkering with accountability schemes and other large-scale policy innovations.

How can America's schools become the best in the world, and solve longstanding problems of equity and excellence? The answer lies in creating, rigorously evaluating, and then broadly implementing effective programs and policies. Research and development, followed by policies supporting the use of proven approaches, is essential to any strategy for impactful, sustainable gains in educational effectiveness on a national level.

## The Federal Role in Research

The vast majority of high-quality research in education is funded by the federal government. Yet, compared to other fields such as medicine or agriculture, federal investment in educational R&D is miniscule. The U.S. Department of Education's Institute of Education Sciences (IES) spends about \$239 million annually on R&D, compared to \$31 billion at the National Institutes of Health alone (which is only one of many federal sources for medical research). This equates to roughly 2 days' worth of NIH funding. Yet the federal investment is decisive, dominating all other federal and non-federal sources. Since IES was founded in 2002, it has moved education research rapidly toward a far greater use of experimental evaluations of promising programs. Though IES also funds correlational studies, measure development, and other types of research, its flagship initiatives involve identifying potentially powerful programs and moving them from development to large, randomized evaluations.

*“The Institute of Education Sciences’ annual budget equates to roughly 2 days’ worth of NIH funding.”*

Another more recent source of education R&D within the Department of Education is the Investing in Innovation (i3) grant program, which is housed within the Department's Office of Innovation and Improvement (OII). The i3 program, which began as part of the Obama Administration's stimulus efforts, focuses on the development and evaluation of promising programs, but adds an emphasis on dissemination of programs that already have strong evidence.

The Department keeps track of programs through the What Works Clearinghouse (WWC), which summarizes evidence on programs that have been vetted through high-quality experimental evaluations. To add meaning to experimental evaluations, definitions of “strong,” “moderate,” and other levels of evidence were recently added to the Education Department General Administrative Regulations (EDGAR). Although many promising programs have not fared well in rigorous evaluations, an increasing numbers of programs with promising outcomes are being added to the WWC each year.

## The Education Sciences Reform Act (ESRA)

A key underpinning for the new emphasis on evidence from rigorous evaluations is the Education Sciences Reform Act or ESRA, which is currently being considered for reauthorization. ESRA only applies to IES, not to i3 or to other education R&D elsewhere in government, but it is essential because it sets a standard that others



increasingly follow. Some key suggestions for ESRA and for related policy improvements are as follows:

- 1 Maintain the strong support in ESRA for randomized experiments, when possible, or at least high-quality quasi-experiments, when random assignment is not possible, in evaluating programs and policies. Current ESRA language to this effect should be maintained as it is.
- 2 Designate IES as the lead office for evaluation of programs throughout the Department. Whenever outcome evaluations are carried out anywhere in the Department, IES should be involved to improve coordination among the various evaluations and to ensure that Department evaluations are performed with both scientific rigor and independence.
- 3 Seek opportunities to do inexpensive, high-quality studies of innovative approaches using Department funding. Often, it is possible to do inexpensive studies using routinely collected data, such as state test scores or graduation rates, but such studies need to be designed and put into place in advance as part of the design of the federal grant. IES should be involved at an early stage in such impact evaluations to take advantage of these opportunities. Other offices within the Department of Education should be required to coordinate with IES to embed rigorous outcome evaluations in the design of Department grant competitions and other initiatives as a matter of course.
- 4 Increase funding for all forms of education R&D. The large, randomized evaluations carried out under IES and i3 funding are expensive, and this greatly restricts the number that can be done. Also, correlational and observational research that leads up to development and rigorous evaluation is much needed. Funding levels for all of education R&D, especially in IES and i3, must be substantially larger to truly move the system toward the use of proven practices on a scale that matters.
- 5 Encourage the use of proven programs in all Department grant funding. Whenever possible, Department programs should encourage use of programs that meet the “strong” or “moderate” levels of evidence in EDGAR. They may offer a few competitive preference points in competitive initiatives, or they may create funding streams or matching funds restricted to schools or districts willing to adopt proven programs. Also, clearing away hurdles to adopting proven programs is essential.

For example, Title I schools should be assured that nothing in the “supplement, not supplant” rule should keep them from adopting proven programs. Another example would be to permit Title I funds to be used as matching funds for implementing i3 programs.

## Conclusion

Research, evaluation, and dissemination of effective approaches should be the cornerstone of progress in America’s elementary and secondary schools. The current language in ESRA creates a good foundation for enabling IES to continue to play its leading role in this process. More funding, more integration with other Department of Education grant processes, and more emphasis on seeking cost-effective evaluations can increase the impact of research on educational practices and student outcomes.

# The Evidence-based School District

## A Make-Believe District with a Real-World Mission

Michael J. Petrilli  
Thomas B. Fordham Institute

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Why do many good ideas in education get overlooked? Why don't research-based practices come to dominate the sector? Why don't the very best curricular materials get adopted nationwide?

If you asked me that question twenty years ago, I would have given a pat answer: incentives, or the lack thereof. In our bureaucratic education system, described most accurately as a public monopoly, nobody faced strong incentives to look for ways to build a better mousetrap. And if that mousetrap threatened anyone (as mousetraps tend to do), forget about it; the status quo ruled.

Change the incentives and watch schools embrace change, I used to argue. Hold superintendents, principals, and teachers to account for raising test scores. Subject them to real competition. Then voila: They would spend night and day looking for promising innovations and proven practices to improve achievement and better serve families.

Well, we know how that's turned out. We've put a lot of those incentives in place, and made promising innovations easier to find (via the What Works Clearinghouse, the Regional Educational Labs, and other vehicles) and schools still don't always embrace good ideas, even the non-controversial, inexpensive kind. Take, for instance, the following:

- Bringing “departmentalization” to elementary schools by asking strong math teachers to teach math and strong reading teachers to teach reading, rather than expecting a single person to do both.
- Maintaining a content-rich curriculum in elementary schools. E.D. Hirsch and others have demonstrated for decades that the best way to raise reading scores is to make sure students build a strong vocabulary and a strong knowledge base; otherwise, they won't comprehend what they're reading. Yet schools nationwide have pushed aside science

and social studies, art and music to make room for mega-ELA blocks dominated by a focus on “reading skills.”

- Extending the reach of excellent teachers via larger class sizes (with greater pay), new roles for master teachers, or technology. (Public Impact is chock-full of revenue-neutral ideas on this front.)
- Delaying the start of the high school day to allow adolescents to get more sleep.

***“We’ve put a lot of incentives in place, and schools still don’t always embrace good ideas. What gives?”***

What gives? Some economists would argue that the incentives we've put in place to date aren't strong enough. Even now, few educators lose their jobs if test scores don't rise. Principals and teachers don't generally stand to make much more money if they achieve breakthrough results (or attract gobs more customers). And competition, at least in most locales, is still quite limited.

Or perhaps we've failed to get the details right. In most states, vague content standards, cheap, low-level tests, and incredibly low “proficiency cut scores” conspired to push schools toward basement-level instruction. Maybe now, with the Common Core and its next-generation assessments, we'll finally send the right signals to practitioners, and they will respond by looking for concrete ways to improve instruction.

All plausible. But there could be something simpler

at work: Perhaps many educators have never even encountered many of the ideas in question. Principals and teachers are so busy with the day-to-day struggle of their jobs—and now with new demands brought on by Common Core, new evaluation systems, and more—that they just keep their heads down and try to survive. They don't have the time—or take the time—to read journals or blogs, to look for new innovations, to talk to colleagues, or to wonder about better ways of doing things. In this view, we have an “innovation-dissemination” (or “research-to-practice”) challenge.

I'll admit, that sounds like a bit of a cop-out, especially for superintendents and principals. The leader of any organization knows that part of his or her job is to look for better ways to do things and to stay current on trends in the field. We should expect no less from our educational leaders, and those without an innate curiosity and drive for continuous improvement should be screened out of the profession.

But these actors do face an avalanche of information and advocacy from the government, from think tanks, and especially from vendors. Sifting through it all and turning the best bits and pieces into a coherent approach is no easy task. (And this has been a problem forever.)

Could we make that task more manageable? Could we help principals and superintendents to separate the wheat from the chaff in terms of the ideas that come across their desks on a given day?

## Introducing the Evidence-based School District

Imagine the creation of a make-believe school district. It wouldn't have any actual students, teachers, buses, or facilities, but it would have a school board, a superintendent, and a central office staff. (The superintendent and staff would be paid real salaries and be housed in a real office; the school board would be made up of various “education experts” who, like real school board members, would volunteer their time.) It would be given a demographic profile—say, an inner-ring suburban district of 10,000 with a fair amount of racial and socioeconomic diversity. It would inherit the student achievement results, policies, and practices of a typical district. We'd situate it in an actual state, too.

This simulated “school district” would be charged with developing and constantly updating a strategy for improving achievement and otherwise addressing the needs of its fictitious students. The board and superintendent might start by laying out a schedule for the year in which they would look at different key topics every month. Obvious contenders include:

- An overall strategic plan for the district
- An instructional plan focused on implementing the Common Core (including the adoption of aligned textbooks and other curricular materials)
- A new educator evaluation system
- A strategic approach to teacher recruitment, selection, and induction
- A plan for addressing students' social and emotional Learning
- A strategy for integrating technology with the district's instructional approach
- A plan for improving the district's special education services and outcomes
- A set of policies on student discipline
- An annual budget

The “central office” would have staff working in roles similar to real districts: an assistant superintendent for curriculum and instruction, a chief human resources officer, a budget director, etc. These people might serve a faux district, but they would develop real plans to present to their superintendent and board. And—this is key—they would have tremendous resources to tap in helping them put these plans or policies or budgets together. Namely, they would have a big research budget and/or access to professionals at a think tank like the American Institutes for Research and/or the regional labs to help them sift through all of the relevant research, ideas, promising practices, and vendor pitches.

## The Potential of the EBSD

Imagine what might happen if such a “school district” took off. First, it would develop policies, procedures, and plans that would be as robust as technocratically possible—aligned with the most sophisticated research and thinking available. These policies, procedures, and plans could then be swiped (and adapted) by real school districts for their own use.

*“Imagine an ‘Evidence-based School District’ that would develop policies, procedures, and plans that real districts could adapt for their own use.”*

Second, it would provide small vendors of excellent products, think tankers with promising ideas, and advocacy groups brimming with sound suggestions with a national platform by which to spread the word. Everyone would know that if you wanted your policy or nostrum or solution to spread, you had to convince the EBSD that it was worth embracing.

Of course, this would only work if actual school board members, superintendents, central office staff, and principals knew about it and found it helpful. It would be critical to get them involved—not just as recipients of the “content” produced by the EBSD but as producers themselves. (This would, in effect, make it “open source.”) They could join digital communities with others in their roles (such as HR managers) and interact with EBSD staffers as they develop their work products. If practicing educators had an idea or product or policy or practice that worked, they could share it with the virtual educator—and thus, the entire network. They could also watch the school board in action via a live stream or after the fact via video.

At minimum, an EBSD would be a fascinating experiment and would probably produce some excellent materials. It wouldn’t be perfect—every state is different, for instance, so real-live district folks would have to adapt materials and approaches for their own contexts. Furthermore, there would be no way to replicate the true push and pull of local politics with which real districts must contend. (How to come up with a model teacher union contract, for instance, in the absence of a teacher union?) One could also imagine all manner of lobbying, cajoling, and political pressure being placed on this fake district if its decisions affected the “real” marketplace. Board members and staff would need to be chosen carefully. Everything would need to be totally transparent.

I suspect that those of us in the idea-generating business would be sobered by the experience. We would gain a better appreciation of the huge amount of conflicting advice and pressure that school districts and their leaders face. In fact, the most interesting part of the experiment would be seeing how the EBSD handles competing priorities and a policy environment that is anything but coherent. It might help us better understand which state and federal policies are helping districts improve and which are getting in the way.

And yes, this assumes that school districts still have a major role to play for the foreseeable future. While that may not be the case in some of our big cities, I think the familiar structures will endure throughout most of the country and its suburbs and small towns. And it’s the small- to medium-sized districts—which serve nearly half of the nation’s public school students—that could benefit the most from this initiative, as they don’t have the scale to have much central-office capacity on their own.

*“It’s the small- to medium-sized districts that could benefit the most from this initiative, as they don’t have the scale to have much central-office capacity on their own.”*

## First Steps

How might we turn this nugget of an idea into reality?

- 1 Build support for the EBSD among its potential users.** There’s no point creating yet another organization that’s charged with synthesizing and disseminating information that the field ignores. Step one, then, is to determine whether there’s an appetite for this sort of a simulation—and its products—among superintendents, school board members, central office staff, and principals. The buy-in of the respective membership organizations for these officials will be essential.

- 2 **Determine how to design inclusive processes from the start.** If the EBSD’s “customers” demonstrate interest, the next step is to figure out how to make the simulation as accessible, transparent, and open-source as possible. The assumption is that educators will be more likely to use the materials produced by the EBSD if they have a role in creating them. Aggressive marketing, thoughtful use of technology, and well-designed processes will all be essential.
- 3 **Hire a top-notch staff and recruit a well-respected “school board.”** The members of the staff should come from the field, will decades of real world experience, so as to make the simulation as realistic as possible. They also need to be well versed on the research base, committed to improving student achievement for all students, and open to working in a fishbowl. The school board members should represent the most thoughtful education experts available—with both an understanding of the evidence and a feel for real schools and systems.
- 4 **Develop a research budget.** Determine how the staff and school board will be able to tap other experts for help as they do their work. Will a particular organization, like AIR, be put on retainer? Will each regional lab be expected to donate a certain amount of time? Or will the staff have access to financial resources which they can use as they see fit?

- 5 **Develop the EBSD’s core processes.** These will include an annual process for selecting key work products to be developed; a hearing schedule to allow for public input; a vetting process to apply a rigorous approach to selecting products or approaches; and determination of how the “school board” will make its decisions. (By consensus? By majority vote?)

America’s education system is famously fragmented, an “uncoupled train” that struggles to move in a straight line. That’s going to be the case as long as we have 13,000-odd school districts—in other words, probably forever. But perhaps the creation of one more “school district”—the Evidence-based School District—would help bring a little more coherence, and a little greater quality, to our enterprise.





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**EDUCATION & SOCIETY PROGRAM**

[EducationInfo@aspeninstitute.org](mailto:EducationInfo@aspeninstitute.org)

One Dupont Circle • Suite 700 • Washington, D.C. • 20036