

Research-Practice Partnerships and ESSA: A Learning Agenda for the Coming Decade

William R. Penuel

Caitlin C. Farrell

University of Colorado Boulder

Book chapter

DRAFT: 8/11/16

Research-Practice Partnerships and ESSA: A Learning Agenda for the Coming Decade

For more than a decade, the federal government has promoted policies to encourage greater use of research evidence to inform educational reform efforts. The new federal law, the Every Student Succeeds Act (ESSA), reflects a continued commitment among policymakers to this idea. ESSA puts a much greater responsibility on local decision makers for knowing about, using, and even developing evidence. To succeed, local leaders will need support to meet these expectations. As in all other reform efforts, making use of research will require the collaborative engagement of leaders and educators, as well as with researchers. Productive evidence use is an interactive process, most likely when there are sustained opportunities for interactions between researchers and educators.

The premise of this chapter is that RPPs are essential supports for implementing federal policies like ESSA as a foundation for a new infrastructure for relating research and practice. Traditional research and development imagines a one-way path from research to practice. Partnerships are a two-way endeavor, in which practice informs the questions researchers ask, making research more relevant. In partnerships, researchers and educators work together to search for and test solutions to practice, blending ideas and evidence from research with the wisdom of practice. Partnerships are an infrastructure for turning the insight that reform is a social process into a systematic design for collaborative improvement that leverages the expertise and passion of both researchers and educators.

Below, we argue that research-practice partnerships (RPPs) that include educators from schools, districts, and out-of-school organizations are positioned to play an important role in supporting educators to incorporate evidence in reform efforts. Using ESSA as a context, we lay out four roles partnerships may play in supporting the provisions of ESSA regarding the use of

evidence, and we conclude with a set of questions for researchers, practitioners, and policymakers that can increase the field's capacity to engage in successful partnership work.

The Federal Role in Promoting the Use of Evidence in Educational Reform

Over the two decades, we have seen an ongoing conversation at the federal level around how research evidence should inform local practice. In the early 2000s, the focus was on how practitioners could use findings from large-scale experimental studies with randomized control trials (RCTs), the “gold standard” of educational research.¹ The 2001 federal policy No Child Left Behind (NCLB) included over 100 references to “scientifically based research,” with expectations that programs funded under the law draw on such evaluation evidence in school improvement decisions.² There was a parallel investment from the Department of Education in the What Works Clearinghouse, with its goal of improving dissemination of research evidence from RCTs.

Recently, the debate has shifted to focus on a broader approach to understanding and scaling “what works” from education research. The Bush and Obama Administrations invested in tiered evidence grant-making initiatives, like the Investing in Innovation (i3) Program. In a tiered-evidence design, programs with more rigorous evidence of impact are eligible for the most funding, while programs with less rigorous or emerging evidence are still eligible for smaller grants. The recent reauthorization of the federal Elementary and Secondary Education Act is a most recent example of the push for evidence in federal education policy, one that recognizes a role for different tiers of evidence for selecting and implementing programs and practices.

Implementation of policies like ESSA that include provisions for research evidence will not only requires technical solutions (e.g., additional administrative guidance) but also attention to the social conditions that support such efforts. Research in this volume and elsewhere points to

the critical role of social relationships in improvement efforts.³ Policy implementation is a set of interactive, social processes, occurring as actors make sense of, co-construct, and respond collectively. Therefore, we must consider the social infrastructure required to relate research and practice in new ways. We turn to research-practice partnerships, structures that are rich in relationships and commitment to solving substantial problems of education.

The Promise of Research-Practice Partnerships

RPPs are collaborative efforts between practitioners and researchers, focused on solving critical problems facing educational leaders through research efforts.⁴ Rather than “translating” research done by others and “disseminating” it to practitioners, research partnerships engage in joint research and development activities *with* educators. Research partnerships seek to identify problems of practice, co-design solutions with practitioners, implement the design, and then study this process and its results. RPPs share common strands of DNA. First, RPPs are *long term*. Instead of being focused on a single study, researchers and educational leaders in RPPs sustain their work across multiple projects. Second, RPPs organize their work around a *problem of practice*, instead of leading with gaps in existing theory or research. Third, these partnerships are *mutualistic*; all involved jointly negotiated, and hold authority over, the lines of work. This approach stands in contrast to traditional research studies where the researchers often play a central role in setting the research agenda. Fourth, RPPs develop and employ *strategies to foster partnerships*. These strategies may include carefully designed rules, roles, routines, protocols, or “ways of doing business” that structure RPP engagement. Finally, the partnerships involve *original analysis of data* where RPP participants in an RPP gather data and conduct analyses to provide insight into communities’ pressing questions. This analysis can be anchored by and advance educational theory.

Outside of this shared DNA, RPPs can look quite different from one another in terms of organization and strategy.⁵ In research alliance models, RPPs engage around analyses of implementation of district policies, where the researchers share findings for educational decision makers and work with them to develop solutions (e.g., the University of Chicago Consortium for Chicago School Research). In design research partnerships, co-design work plays an even greater role, with researchers and district leaders co-developing and testing strategies or tools for improving teaching and learning system-wide.⁶ Still other RPPs organize as networks of schools, districts, or other institutions, such as afterschool or informal organizations, and engage in continuous improvement research to work on problems of practice.⁷

Not all partnerships may neatly fit into this typology. A partnership may engage in different activities based on the goals of their work together. For instance, a partnership could engage in activities that are more typical of research alliances, like integrating together multiple datasets or perform independent analyses of district administrative data. The same group could also be involved design work as they co-design and test strategies or tools for addressing identified needs, a feature of design research partnerships. With recent investments by local and federal funders like the Institute of Education Sciences (IES) and the National Science Foundation, RPPs of all forms and types have multiplied.⁸

One claim made about research-practice partnerships is that they are an effective mechanism for supporting research use. For instance, the theory of action for IES' researcher-practitioner partnership program names improved research use as a central goal.⁹ Recent evidence from studies of research use give some support to this claim. Evaluation utilization scholars find that participation in the research process—a key component of work in some kinds of RPPs—is important for utilization.¹⁰ Several studies suggest participation in partnerships is

associated with greater access to research, another important contributing factor for research use.¹¹

A key reason why RPPs may support research use is that they create opportunities for the interactive social processes involved, including persuasion, negotiation, and sensemaking.¹² Research findings do not speak for themselves. Instead, engagement with research requires leaders to make sense of findings, discuss their relevance to the current district context, and design policies or programs in that particular context in light of other financial, political, or temporal constraints.¹³ Within this interactive space, researchers and practitioners can sift through the range of evidence-based programs and strategies available to select programs that may work for a particular issue.¹⁴ Partnerships can create spaces to adapt these programs via collaborative design efforts to fit local context or iterate on the design of a program or strategy to tailor to new, unfolding needs, a key theme emphasized in this volume. Finally, conducting local evaluations of these programs within a partnership may lead to results that are seen as more timely, credible, and central to district leaders' needs, making it more likely that leaders will act upon the findings in their decision making. Research-practice partnerships are poised to play an important role in supporting district leaders' use of research, a key task of local leaders under the new Every Student Succeeds Act (ESSA).

Key Provisions Regarding Evidence Use in ESSA

In December 2015, Congress passed the Every Student Succeeds Act (ESSA), the long-awaited reauthorization of the Elementary and Secondary Schools Act (ESEA). ESSA represents a significant devolution of decision-making authority from the federal government to state and local agencies. With this new authority comes the explicit expectation that local policymakers are “evidence-based” in their decision making.

ESSA, for the first time in ESEA history, defines the four levels of evidence that constitute an “evidence-based” program, intervention, or activity (Section 8002). These four tiers draw on those in the Investing in Innovation grant program (i3) – a stimulus program that supported large-scale development of innovations. The evidence tiers are based on the strength of the research base:

- *Strong evidence*: has at least one well-designed and implemented experimental study, meaning a randomized controlled trial, that shows a positive impact;
- *Moderate evidence*: has at least one well-designed and implemented quasi-experimental study, e.g., a regression discontinuity analysis, that shows a positive impact;
- *Promising evidence*: has at least one well-designed and implemented correlational study that controls for selection bias that shows a positive impact.
- *Research-based rationale*: has a body of evidence from research and evaluation to support the claim that the strategy or intervention is likely to improve student outcomes.

ESSA applies the term “evidence” or “evidence-based” more than 80 times. This language is most notable in the regulations for the large formula and competitive grant programs. For Title I funds, for instance, school districts are to develop improvement plans for low-performing schools that include “evidence-based” interventions, programs or activities that meet the first three tiers of evidence. Further, seven of the authorized competitive grant programs (i.e., Literacy Education for All, Results for the Nation, Section 2221) similarly restrict “evidence-based” activities or interventions to the top three tiers of evidence. In these grant competitions, the U.S. Department of Education will give priority to applications with evidence-based approaches, presumably by awarding more points to proposals with strong evidence than those proposals with promising evidence. Other ESSA formula grant programs, including Title II (Preparing, Training, and Recruiting High Quality Teachers, Principals, and Other School Leaders) and Title IV, Part A (Student Support and Academic Enrichment Grants) encourage state and local school districts to invest in “evidence-based” interventions or programs, including

in afterschool and summer initiatives supported through the 21st Century Community Learning Centers program. Here, activities may qualify via the fourth tier, a demonstration “of a rationale based on high-quality research findings or positive evaluation” that also “includes ongoing efforts to examine the effects of such activity, strategy, or intervention” (Section 8002).

ESSA also includes a number of provisions that further signal a federal commitment to building the evidence base in education. The law authorizes the Education Innovation and Research (EIR) Grants program (Section 4601). Similar to the Investing in Innovation (i3) program, this program will provide tiered grants to support the testing and replication of new strategies or programs and will require grantees to independently evaluate the effect of their grant-funded activities, adding to the research base. ESSA also allows the U.S. Department of Education to set aside portions of Title I and Title III funds for program evaluations (Section 8601). Table 1, below, highlights key provisions in ESSA that have a role for research evidence.

[INSERT TABLE 1]

The rollback of federal authority, combined with a commitment to interventions and strategies supported by evidence, create serious new demands on state and local leaders. ESSA requires that state and local leaders identify and select programs or interventions that meet the standards of evidence. In the cases where there is not research that meets the top tiers, the work of using research evidence will occur in the space of design, adaptation, and improvement. Local decision makers will need to determine whether and how these strategies will work in their context and adapt as needed. Based on what we know from implementation research more generally, and the specific case of i3 grants more recently, it is likely that these evidence-based programs or interventions will need to be iteratively refined to meet the needs of particular communities.¹⁵ ESSA also requires that local policymakers and practitioners become partners in contributing to the evidence base, through evaluation of the strategies in the fourth tier of evidence (“research-based rationale”) or EIR grant efforts. In sum, ESSA puts a much greater

responsibility on local decision makers for knowing about, using, and even developing evidence, and local leaders will need support to meet these expectations.

Proposed Roles for RPPs Under ESSA

Research-practice partnerships are positioned to play important roles to help realize ESSA's vision for evidence-based policymaking. Where they exist, partnerships are positioned to play an important role helping leaders in identifying and selecting evidence-based programs; adapting evidence-based programs through collaborative design; iteratively refining evidence-based programs through improvement science strategies; and conducting local evaluations of evidence-based programs.

Identifying and Selecting Evidence-Based Programs

One role that RPPs can play is to help leaders *identify and select evidence-based programs* that are appropriate for their context and the address the needs of their schools and districts. Under Title I, for instance, local educators will need to identify those programs that meet the top three evidence tiers in their action plans for low-performing schools. Identifying an evidence-based program is not a simple matter of looking up evidence reports from a site like the What Works Clearinghouse or Campbell Collaboration and selecting a program with strong evidence of impact on student learning. Nor is it as simple as accepting a claim from a publisher that the program or curricula includes “strong evidence” for its efficacy. Identifying evidence-based programs requires knowing where to look for programs that have a strong evidence base that matches the needs of a particular program, school, district, or community. Intervention reports from the What Works Clearinghouse, summaries of evidence related to specific programs, typically provide little guidance on the resources required to implement programs or on the

processes that educators might need to undertake to select programs based on a careful balancing of needs and resources.

A good example of a research-practice partnership model that helps with the identification and selection of programs is the Communities That Care (CTC) model created by the Social Development Research Group at the University of Washington. In this model, researchers work with multi-agency collaboratives to assess needs and then select and implement evidence-based programs in primary prevention for adolescents. The model aims to build a culture of evidence-based decision-making and commitment to primary prevention across a community. Although this example comes from outside education, schools are integral implementation partners, and the model shows the benefits of partnerships for helping identify and select evidence-based programs. Researchers who tested the CTC model have found that when compared to control communities, leaders in communities that formed partnerships with researchers to implement CTC were more likely to devote resources to primary prevention than in comparison communities.¹⁶ They have also documented positive impacts on youth, documenting lower levels of alcohol and cigarette use and fewer delinquent behaviors compared to youth in control communities.¹⁷

Developing Evidence-Based Programs through Collaborative Design

A few competitive grant programs in ESSA call for the development of evidence-based programs. For example, the Supporting Effective Educator Development, under Section 2243, names the creation of a comprehensive center that would “identify or develop evidence-based professional development” targeting teachers of students at risk in literacy. Developing new programs rooted in evidence is a labor-intensive process that takes time and extensive collaboration. It is also a tall order for districts and states to do on their own or researchers to do

without significant input from educators regarding the design of programs that are feasible to implement in schools and districts.

Some partnerships use an approach to develop interventions collaboratively with practitioners where more realistic conditions of implementation occur from the start. This is the strategy of design-based research, first developed in the learning sciences in the early 1990s.¹⁸ Design-based research involves the specification of a theory of how best to support learning of particular goals that is then tested in the crucible of classrooms.¹⁹ It aims to produce not only usable innovations but also knowledge and practical principles for guiding the design of future innovations.²⁰

A good example of design-based research within a partnership is a multi-year project conducted collaboratively by researchers from the Strategic Education Research Partnership (SERP) and the Minority Student Achievement Network (MSAN), a network of eight districts focused on closing achievement gaps.²¹ The challenge that MSAN members gave to SERP researchers was to design an intervention to close gaps in outcomes in algebra without isolating students of color for intervention. The district leaders also emphasized that the program should fit easily within teachers' existing routines and that the program should value teachers' expertise and contributions in the classroom.

The team drew upon research about the importance of worked examples to create an initial version of the intervention. A worked example is a clear, step-by-step demonstration of how to solve a particular problem that illustrates a class of problem-types in a discipline.²² There is strong evidence that worked examples can help develop problem-solving strategies, yet they are not integrated into most mathematics texts.²³ A collaborative design team of researchers and teachers co-developed a set of assignments with worked examples that targeting difficult

mathematics concepts. Teachers piloted the assignments, and the team made subsequent revisions based on teacher input. Subsequent iteration resulted in further refinements. The team concluded its efforts, which involved several years of development and testing, with an experimental study. The study examined the impact of the assignments with worked examples on conceptual and procedural knowledge of algebra. The researchers found a significant main effect of the treatment, with greater gains made by low-achieving students.²⁴

This example illustrates the power of design-based research conducted within partnerships to design usable, effective interventions. The iterative process of design research resulted not only in successive refinements to the assignments to enhance their effectiveness, but the repeated testing in a variety of classrooms also yielded improvements that aligned better and better to the needs teachers and district leaders had expressed. A focused addition to practice yielded significant gains in the long run.²⁵

Iteratively Refining Evidence-Based Programs to Improve Reliability of Outcomes

To achieve better outcomes for students at scale, states and local agencies will need to continuously refine their programs, activities, or interventions. For instance, findings from evaluations supported under different provisions or as part of the Education Innovation and Research (EIR) program could be leveraged to support continuous improvement efforts.

One strategy for iteratively refining a program is to employ methods of improvement research within a research-practice partnership. Improvement research is widely used in medicine to design and test strategies for improving practice using a Plan-Do-Study-Act (PDSA) cycle.²⁶ In these cycles, a partnership decides on a small change to be tested, define the steps needed to test it, and determine the measures that will be used to gauge its success (Plan). Next,

the partnership carries out the plan (Do), analyzes data collected to see if their predictions were borne out (Study), and finally determines what changes need to be made for the next cycle (Act).

This approach to improvement research is being more fully developed in a range of initiatives facilitated by the Carnegie Foundation for the Advancement of Teaching.²⁷ One such initiative involves a partnership among the Harrisonburg City Public Schools, Motivation Research institute, Carnegie Foundation for the Advancement of Teaching, and the Raikes Foundation. It has employed improvement research methods to test and refine a brief intervention focused on student motivation that had previously proven successful in other settings. The team was compelled by evidence from previous studies that brief social psychological interventions that target students' feelings and thoughts about school can lead to large gains in achievement.²⁸

Three motivation researchers worked closely with six teachers and two administrators on the effort. They first worked to identify what they perceived to be top motivational challenges to students. The group concluded that the most pressing challenge was that "Students who do not believe in themselves and give up at anything that is not quick and easy for them." They used a tool from improvement research called a "Key Driver Diagram" in order to name key leverage points for addressing this problem. The diagram, constructed through both conversations with partners and an analysis of the literature, highlighted four key drivers: Students believe they can learn, students value learning, students feel that they belong in the context, and students use effective learning strategies. The team decided to start with the first key driver, "Students believe they can learn," to select a brief intervention to adapt.

They chose an intervention focused on building growth mindset among students that had been developed by Carol Dweck's team at Stanford.²⁹ The intervention had been developed for a

different age group, and it lasted longer than the partnership was willing to support. The team made three adaptations to the intervention: developing material to make it engaging for middle schoolers with limited English proficiency, shortening the intervention's length, and making it so the intervention could be delivered on a handheld tablet.

They used a careful approach to scaling prescribed by improvement research. First, the team tested the adapted intervention in one classroom with older students, mainly to establish that the content was comprehensible to them. Next, they moved to a handful of fifth grade classrooms and addressed usability issues with the handheld devices through a PDSA cycle. In the process, they learned a lot from testing in classrooms that they used to refine the intervention, such as the need to add follow up activities for students who finished tasks early and to develop new material for when students saw the handheld application more than once. The testing also resulted in refinements to the assessment. The team is now testing the intervention in a large-scale study throughout the district.

This example shows the potential of improvement research in a research-practice partnership to refine an existing evidence-based intervention. Through working in close collaboration with teachers and district leaders in what might be called a multi-tiered partnership because it involves educators working at different levels of a system,³⁰ a team was able to work systematically to ensure that the social psychological intervention they adapted could be reliably implemented. The project also illustrates in a powerful way that even the shortest and most straightforward-to-implement evidence-based programs can require significant adaptation when introduced into a new context.

Conducting Local Evaluations of Programs to Build a Research Base

Under ESSA, there is a role for evaluation of federally funded activities, and some research-practice partnerships are well positioned to serve an evaluative role. Research alliances are a type of partnership that function as independent voices in a community that document the implementation and effectiveness of local school district policies and programs.³¹ Here, educators take primary responsibility for the design and implementation of policies and programs, while researchers serve as evaluators of those policies and programs. The evaluations are not undertaken as many studies are, however, where contractors have no ties to the community. Rather, alliances are place-based and committed to an ongoing relationship with partner school districts to address problems of practice and to inform the search for solutions to those problems of practice.

What Do We Need to Learn Together? A Collaborative Learning Agenda

Though the examples above illustrate the potential for research-practice partnerships to contribute to key aspects of ESSA implementation, we are a long way from being able to claim that partnerships are a viable strategy for all educational settings. There is much for us to learn, not just about ESSA but also about how best to form and sustain partnerships that can impact local policies, practices, and student outcomes. Below, we outline an agenda -- a learning agenda, rather than a research agenda -- framed by questions that we need to explore in order to increase the field's capacity to engage in successful partnership work.

Making Sense of the Evidence Base

Under ESSA, educators in both formal and informal settings will have new roles as research consumers. In some situations, this may involve selecting from programs that have demonstrated success in an RCT setting. While the application of strong evidence likely continue to be privileged, it is also important to recognize the very limited body of knowledge that meets

the criteria for the top two tiers. Therefore, educational leaders will need support to access, interpret, and make use of research in a range of ways. This set of tasks will include interpreting the results of standalone RCTs or quasi-experimental studies, an area where educational leaders may need support.³² Additionally, it will require an ability to assess evidence for claims that something is “research-based” or to gauge the strength of the research base across studies. Partnerships will need to develop answers to the question: *How can partners help local leaders find and interpret “bodies of evidence” relative to specific problems that go beyond single studies?*

Further, decision makers at the local level will need to determine whether a research-based program, curricula, tool, or strategy may work within their own setting given local conditions. Beyond whether a program will “work” or not, educational leaders will need information on how to implement those strategies given available resources, staffing, and previous initiatives. This requires knowledge about the applicability of a program to one’s own context, considering the generalizability of findings and evidence of replication.³³ It will require strategies for implementation and plans for adapting the program to meet local conditions in order to achieve student outcome results. Partnerships may be well positioned to focus on this demand. We need to know more about, *how can RPPs iterate upon evidence-based programs to improve reliability of implementation and equity of outcomes?*

Developing Evidence-Based Programs

Another key question to address is, *How can collaborative design processes best support the development of evidence-based programs?* Traditional research and development puts researchers in control of the design process, but in RPPs, educators and researchers design collaboratively. In real educational contexts, moreover, iteration must be based on both emerging

evidence of impact and on changing district environments.³⁴ Co-design in such environments must wrestle with multiple tensions across organizational structures, such as district units or partnering institutions, and between central offices and schools.³⁵ At present, we do not have a range of well-tested models to draw upon for organizing collaborative design of evidence-based programs that partnerships can use.

For instance, Title II provisions call on local leaders to “identify and develop” evidence-based programs for professional development for teachers, principals, and other school leaders. Although researchers have conducted experiments to test a number of different programs over the past decade, only a few have been found to be effective, and fewer programs still have been sustained. Recently, there have been calls to develop professional learning opportunities that are better integrated into school and district infrastructures.³⁶ Researchers working in partnerships with districts could accomplish such a task.

Getting Better at Getting Better

Collaborative design is but one process that is important for developing evidence-based programs. To meet the demands of practitioner timescales for rapid improvement, we need faster ways to go from early stage development to reliable impact at scale. Traditional research and development cycles take too long to generate such evidence, and by the time it is generated, it may no longer be useful for decision makers. One of the promising aspects of the Carnegie Foundation’s development of improvement research methods for education is the speed and systematicity with which evidence can be generated from studying an innovation in a few classrooms and learning quickly to improve the reliability of outcomes and integrity of implementation. In 90-day cycles, small tests of change can be undertaken and an aspect of an intervention can be refined based on evidence collected using practical measures that are targeted

to studying a few outcomes. Over the course of 1-2 years, a comprehensive “change package” can be developed that can then be tested with large numbers of classrooms.

To implement these kinds of methods in schools and districts, we need to know: *How can networked improvement communities support the development and improvement of specific programs and practices?* At present, few researchers and educators have the capacity to form networked improvement communities (NICs). Researchers need to develop the facilitation skills to bring them about, and districts, for their part, do not have mechanisms for building in time for educators to take on new roles and responsibilities required of them. Further, in a NIC, there is no clear delineation of who is a researcher and who is an educator. All work together as a network to carry out the work, but such a blurring of roles is counter-normative.³⁷ To “get better at getting better,” a chief aim of a NIC, we will need to learn much more about how best to take on new roles in the midst of our respective organizations and their demands on us.

ESSA reflects a continued commitment among policymakers to the idea that research evidence has an important role to play in supporting improvement efforts. RPPs can provide the foundation for a new, collaborative infrastructure for relating research and practice. The place-based nature of RPPs is a strength of RPPs and not a weakness, because the work of adapting programs to be effective in a new context requires collaboration with people who have a stake in the outcomes and responsibility for implementation of reforms. It is the infrastructures of partnerships and processes of adaptation that can travel from place to place, so that others can learn from these intentional efforts to foster collaborative reform.

Table 1.

Evidence provisions in ESSA

ESSA Provision	Focus
Title VIII, Section 8002	<ul style="list-style-type: none"> Defines the four levels of evidence that constitute an “evidence-based” activity, strategy, or intervention by a state, local school district, or individual school.
Title I, Section 1003	<ul style="list-style-type: none"> Requires states to set aside a portion of their ESEA Title I, Part A funds for a range of activities to help school districts improve low-performing schools. Local school districts need to select “evidence-based” interventions that meet strong, moderate, or promising levels of evidence in their improvement plans.
Title II	<ul style="list-style-type: none"> Focus is on improving the quality and effectiveness of teachers, principals, and other school leaders in preparation programs, professional learning initiatives, or recruitment efforts. Encourages states and local school districts to use their Title II funds on “evidence-based” activities (where there is available evidence).
Title III, Section 4611	<ul style="list-style-type: none"> Authorizes the Education Innovation and Research (EIR) Grants program, a federal evidence-based education innovation fund, similar to the existing i3 program
Title IV, Part A	<ul style="list-style-type: none"> Student Support and Academic Enrichment Grants section encourages states and local school districts to use invest their Title IV funds in “evidence-based” activities (where there is available evidence).
Competitive grant programs	<ul style="list-style-type: none"> U.S. Department of Education to give priority to applications that demonstrate strong, moderate, or promising levels of evidence for following grant programs: <ul style="list-style-type: none"> Sec. 2221, Literacy Education for All, Results for the Nation; Sec. 2242, Supporting Effective Educator Development; Sec. 2243, School Leader Recruitment of Support Sec. 4502, Statewide Family Engagement Centers Sec. 4624, Promise Neighborhoods Sect. 4625, Full-service Community Schools Sect. 4644, Supporting High-Ability Learners and Learning
Title VIII, Section 8601	<ul style="list-style-type: none"> Allows U.S. Department of Education to dedicate funds towards ESSA program evaluations

-
- ¹ Grover J. Whitehurst, "The Institute of Education Sciences: New Wine, New Bottles" (paper presented at the Annual meeting of the American Educational Research Association, Chicago, IL, April 2003).
- ² Meredith I. Honig and Cynthia E. Coburn, "Evidence-Based Decision-Making in School District Central Offices: Toward a Research Agenda," *Educational Policy* 22, no. 4 (2008).
- ³ Nienke M. Moolenaar and Alan J. Daly, "Social Networks in Education: Exploring the Social Side of the Reform Equation," *American Journal of Education* 119, no. 1 (2012).
- ⁴ Cynthia E. Coburn, William R. Penuel, and Kimberley E. Geil, "Research-Practice Partnerships: A Strategy for Leveraging Research for Educational Improvement in School Districts," (New York, NY: William T. Grant Foundation, 2013).
- ⁵ Ibid.
- ⁶ Paul A. Cobb et al., "Design Research with Educational Systems: Investigating and Supporting Improvements in the Quality of Mathematics Teaching and Learning at Scale," in *Design-Based Implementation Research: Theories, Methods, and Exemplars*, ed. William R. Penuel, et al. (New York, NY: National Society of the Study of Education Yearbook, 2013).
- ⁷ Bronwyn Bevan et al., "Enriching and Expanding the Possibilities: Research-Practice Partnerships in Informal Science Education " (San Francisco, CA: Research + Practice Collaboratory, 2015).
- ⁸ W. R. Penuel et al., "Conceptualizing Research-Practice Partnerships as Joint Work at Boundaries," *Journal of Education for Students Placed at Risk* 20 (2015).
- ⁹ Institute of Education Sciences, "Researcher-Practitioner Partnerships in Education Research," https://ies.ed.gov/funding/ncer_rfas/partnerships.asp.
- ¹⁰ Kelli Johnson et al., "Research on Evaluation Use: A Review of the Empirical Literature from 1986 to 2005," *American Journal of Evaluation* 30, no. 3 (2009).
- ¹¹ William E. Bickel and William W. Cooley, "Decision-Oriented Educational Research in School Districts: The Role of Dissemination Processes," *Studies in Educational Evaluation* 11, no. 2 (1985).
- ¹² Nabil Amara, Mathieu Ouimet, and Rejean Landry, "New Evidence on Instrumental, Conceptual, and Symbolic Utilization of University Research in Government Agencies," *Science Communication* 26, no. 1 (2004); Damien Contandriopoulos et al., "Knowledge Exchange Processes in Organizations and Policy Arenas: A Narrative Systematic Review of the Literature," *The Milbank Quarterly* 88, no. 4 (2010).
- ¹³ National Research Council, "Using Science as Evidence in Public Policy," (Washington, D. C.: Author, 2012).
- ¹⁴ Cynthia E. Coburn and Mary K. Stein, eds., *Research and Practice in Education: Building Alliances, Bridging the Divide* (Lanham, MD: Rowman & Littlefield, 2010).
- ¹⁵ Anthony S. Bryk et al., *Learning to Improve: How America's Schools Can Get Better at Getting Better* (Cambridge, MA: Harvard Education Press, 2015); Milbrey Wallin McLaughlin, "Implementation as Mutual Adaptation: Change in Classroom Organization," *Teachers College Record* 77, no. 3 (1976); Donald J. Peurach, "Educational Innovation and Problems of Improvement: Aligning Politics, Policies, and Practice," in *National Center on Scaling Up Effective Schools Conference* (Nashville 2015).
- ¹⁶ Eric C. Brown et al., "Prevention Service System Transformation Using Communities That Care," *Journal of Community Psychology* 39, no. 2 (2011).

-
- ¹⁷ J. David Hawkins et al., "Early Effects of Communities That Care on Targeted Risks and Initiation of Delinquent Behavior and Substance Use.," *Journal of Adolescent Health* 43, no. 1 (2008); J. David Hawkins et al., "Results of a Type 2 Translational Research Trial to Prevent Adolescent Drug Use and Delinquency: A Test of Communities That Care," *Archives of Pediatrics and Adolescent Medicine* 163, no. 9 (2009).
- ¹⁸ Ann L. Brown, "Design Experiments: Theoretical and Methodological Challenges in Creating Complex Interventions in Classroom Settings," *The Journal of Learning Sciences* 2, no. 2 (1992).
- ¹⁹ Paul Cobb et al., "Design Experiments in Educational Research," *Educational Researcher* 32, no. 1 (2003).
- ²⁰ Carl Bereiter, "Principled Practical Knowledge: Not a Bridge but a Ladder," *The Journal of the Learning Sciences* 23, no. 1 (2014); Daniel C. Edelson, "Design Research: What We Learn When We Engage in Design," *ibid.* 11 (2002).
- ²¹ Julie L. Booth et al., "Design-Based Research within the Constraints of Practice: Algebra by Example," *Journal of Education for Students Placed at Risk* 20, no. 1-2 (2015).
- ²² Robert K. Atkinson et al., "Learning from Examples: Instructional Principles from the Worked Examples Research," *Review of Educational Research* 70, no. 181-214 (2000).
- ²³ Harold E. Pashler et al., "Organizing Instruction and Study to Improve Student Learning," in *NCEER 2007-2004* (Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education, 2007).
- ²⁴ Booth et al., "Design-Based Research within the Constraints of Practice: Algebra by Example."
- ²⁵ William R. Penuel, Jeremy Roschelle, and Nicole Shechtman, "The Whirl Co-Design Process: Participant Experiences," *Research and Practice in Technology Enhanced Learning* 2, no. 1 (2007).
- ²⁶ Donald M. Berwick, "The Science of Improvement," *The Journal of the American Medical Association* 299, no. 10 (2008).
- ²⁷ Bryk et al., *Learning to Improve: How America's Schools Can Get Better at Getting Better*.
- ²⁸ David Yeager and Gregory M. Walton, "Social-Psychological Interventions in Education: They're Not Magic," *Review of Educational Research* 81, no. 2 (2011).
- ²⁹ David Paunesku et al., "Mind-Set Interventions Are a Scalable Treatment for Academic Underachievement," *Psychological Science* 26, no. 6 (2015).
- ³⁰ Sam Severance, Heather Leary, and Raymond Johnson, "Tensions in a Multi-Tiered Research Partnership," in *Proceedings of the 11th International Conference of the Learning Sciences* ed. Joseph L. Polman, et al. (Boulder, CO: ISLS, 2014).
- ³¹ Melissa Roderick, John Q. Easton, and Penny Bender Sebring, "The Consortium on Chicago School Research: A New Model for the Role of Research in Supporting Urban School Reform," (Chicago, IL: Consortium on Chicago School Research, 2009).
- ³² William R. Penuel et al., "Findings from a National Study on Research Use among School and District Leaders," in *Technical Report No. 1* (Boulder, CO: National Center for Research in Policy and Practice, 2016).
- ³³ Matthew Makel, C. and Jonathan A. Plucker, "Facts Are More Important Than Novelty: Replication in the Education Sciences," *Educational Researcher* 43, no. 6 (2014).
- ³⁴ Joshua L. Glazer and Donald J. Peurach, "School Improvement Networks as a Strategy for Large-Scale Education Reform: The Role of Educational Environments," *Educational Policy* 27, no. 4 (2013).

³⁵ Raymond Johnson et al., "Teachers, Tasks, and Tensions: Lessons from a Research-Practice Partnership," *Journal of Mathematics Teacher Education* 19, no. 2 (2016).

³⁶ National Research Council, "Science Teachers' Learning: Enhancing Opportunities, Creating Supportive Contexts," (Washington, D. C.: National Academies Press, 2015).

³⁷ Coburn, Penuel, and Geil, "Research-Practice Partnerships: A Strategy for Leveraging Research for Educational Improvement in School Districts."