Contestation and Change in National Policy on "Scientifically Based" Education Research

by Margaret Eisenhart and Lisa Towne

In this article, we examine the definitions of "scientifically based research" in education that have appeared in recent national legislation and policy. These definitions, now written into law in the No Child Left Behind Act of 2001 and the Education Sciences Reform Act of 2002, and the focus of the National Research Council's 2002 publication, *Scientific Research in Education*, are being used to affect decisions about the future of education programs and the direction of education research. Perhaps because of the high stakes involved, there has been some tendency to lump together the definitions emanating from Washington sources. From our perspective as participants in some of this activity, we argue that there are important differences among these definitions and their purposes. Furthermore, we suggest that the various definitions, together with public input about them, can provide leverage for altering the meanings of scientifically based research and education research that are being operationalized in current public policy.

Recent federal education policies (e.g., the No Child Left Behind [NCLB] Act of 2001 [NCLB, 2001] and the Education Sciences Reform Act [ESRA] of 2002 [ESRA, 2002]) have generated considerable debate among education researchers. Much of the debate has been about what is meant by "scientifically based research" in these policies and the implications for research in education. Some researchers are pleased to see experiments, meta-analyses, and randomized trials cited as exemplary methods of scientifically based research; from their perspective, these powerful research methods are not currently being used to good advantage in education research (e.g., Slavin, 2002). Other researchers are deeply troubled by the prominence of experimental designs and the positivist epistemology that sometimes underlies them; they point out that decades of widely accepted critiques of positivism and "science modeled on physics" are being ignored if scientifically based research is conceived primarily in terms of experimental design (e.g., Howe, in press; Lather, 2003). Some researchers have worried, with good reason, given the current political climate, that important ways of knowing, sometimes referred to as "nonscientific," (e.g., philosophical, historical, cultural, affective, postmodern, and practice-oriented), will be forgotten in the rush to achieve scientifically based research (e.g., Berliner, 2002; Erickson & Gutierrez, 2002; St. Pierre, 2002; Willinsky, 2001). Still others have argued that the perceived sorry state of education research is not a matter of science at all, but of money and politics (e.g., David Berliner, remarks at the AERA session, "The Science in Education Research," New Orleans, LA, April 3, 2002; Patricia Graham, remarks at the National Academy of Sciences' release of *Scientific Research in Education* [*SRE*] [NRC, 2002], Washington, D.C., January 7, 2002; Lather, 2003). Debates about these issues have been prominent at many recent policy conferences and professional meetings (e.g., the National Academy of Sciences, January 2002; American Educational Research Association, April 2002 and 2003; American Anthropological Association, November, 2002; American Association of Colleges for Teacher Education, January, 2003), headlined in major media outlets (see Benton, 2002; Brainard, 2002; Morgan, 2002; Olson & Viadero, 2002), discussed on the web (e.g., caelists@listserv.vt.edu; over 100 Google listings), and written about in the pages of *Educational Researcher* (Jacob & White, 2002).

Much of this public debate has turned on two questions: What constitutes "scientifically based" research in education? and Is scientifically based research the only or the best approach to meaningful studies of educational phenomena? In response to a request from the National Educational Research Policy and Priorities Board (NERPPB), a National Research Council (NRC) committee took up the first question in late 2000. Like all NRC committees, the group was assembled by soliciting suggestions for membership from a number of individuals (e.g., members of the National Academy of Sciences), institutions (e.g., officials in schools of education), and professional associations (e.g., the leadership of the American Educational Research Association). From a list of more than 75 names, the NRC appointed a panel of leading scholars reflecting a range of perspectives and backgrounds to tackle the task of articulating the nature of scientific research in education.[1]

In the spring of 2002, the committee published its report, *SRE* (NRC, 2002), which argued for a postpositivist approach to scientifically based research in education, including a range of research designs (experimental, case study, ethnographic, survey) and mixed methods (qualitative and quantitative) depending on the research questions under investigation. Although *SRE* recognized the legitimacy and importance of "nonscientific" ways of knowing for education research (pp. 26, 74–76), the report attempted a broad, inclusive answer to the first question and did not address the second question in any detail.

In response to *SRE* (NRC, 2002) and other developments on the national scene (e.g., NCLB, 2001; ESRA, 2002), a number of education researchers have taken up the second question. Many of them can be identified as interpretivist (e.g., Erickson & Gutierrez, 2002; Howe, in press), critical (e.g., Lather, 2003; Willinksy, 2001), postmodernist (e.g., St. Pierre, 2002), or

qualitative researchers. They have posed serious questions about the wisdom and value of the *SRE* position and the national policy agenda for education with which it is sometimes aligned.

In this context, there has been some tendency to lump together the policy statements about scientifically based research emanating from Washington sources (ESRA, 2002; NCLB, 2001; NRC, 2002; and the new Institute of Education Sciences [IES]). However, there are important differences in the purpose, meaning, and implications of "scientifically based research" in these Washington documents, just as there are among those who have critiqued them. From our vantage points as a member and study director of the NRC committee that produced *SRE*, we first set the record straight on a few key points—the chronology of events in Washington and the various definitions of SBR in the national policy documents about it. Second, we want to suggest that these various definitions, together with other public input on the Washington documents and critiques of them, provide leverage for altering the meanings of scientifically based research and education research as they are operationalized in public policy for the near future.[2]

In our view, it is important that education researchers, regardless of their position on the existing documents or the education agenda of the Bush administration, find constructive ways to encourage and extend the debate and diversity that the current situation highlights. The danger, if this does not occur, is that political forces will foreclose on a narrow definition of national education research and make it the standard for federal support. We hope that the chronology we present next makes clear that public participation can shape a more robust education research agenda that draws on the strengths of a diverse array of investigators and investigatory techniques. We believe such dialogue will extend the current interest in education research in a way that advances the field and the uses of its products.

Chronology of National Efforts to Define Scientifically Based Research in Education

Definitions of education research first appeared in federal education law with the passage of the Reading Excellence Act (REA) in 1999 (REA, 1999). Around the time Congress began considering the reauthorization of federal K–12 reading programs in 1997, the NRC committee that authored *Preventing Reading Difficulties in Young Children* (NRC, 1998) and the panel that produced the congressionally mandated *Teaching Children to Read* (National Reading Panel, 2000) were at work synthesizing related aspects of the research literature in early reading. Some members of Congress, including Rep. Bill Goodling (R-PA), then chairman of the House Education and Workforce Committee, saw these efforts as having the potential to inform and improve education policy and practice. Thus, the era of congressional coupling of education research with federally funded programs was born.

According to Robert Sweet, professional staff member for the majority members of the House Education and Workforce Committee (personal communication with Lisa Towne, July 16, 2003), he (acting on behalf of the elected members he serves) set out to ensure that federal funds for reading education be used in ways that reflected the best available scientific evidence. The main vehicle for codifying this goal into law was to require grantees to develop, select, or implement reading programs grounded in the best science. In making such a requirement, legislators were obligated to devise a definition of scientifically based research that set the standard for what would count toward this end. To craft this definition, which would be the starting point for all of the now numerous definitions that appear in major federal education laws, Sweet visited the websites of several DC-based research institutions (including the NRC, although this took place well before the committee was convened to produce *SRE* [NRC, 2002]), consulted with numerous university-based researchers (primarily with backgrounds in cognitive psychology), and shared drafts with these researchers (he estimates approximately 20–25 of them). The language that emerged from the several-months-long process was inserted into REA (1999), and passed without fanfare.

The draft legislation that spurred more recent federal involvement in defining education research was introduced in Congress in the summer of 2000; the definitions used were based on the REA definitions. Referred to here as the "original Castle Bill" (introduced by Rep. Castle [R-DE] as H.R. 4875 [2000]), this legislation pertained to the reauthorization of the Office of Research and Improvement (OERI) and included the goal of improving "Federal education research, evaluation, information, and dissemination" (p. 1). In the original bill, education research that could be supported with federal dollars was defined as "scientifically valid research," and was to be designed in accord with "scientifically-based quantitative" and "scientifically-based qualitative" research standards (p. 3). Figure 1 gives the language used in H.R. 4875.

Figure 1 shows that the original Castle Bill (H.R. 4875, 2000) proposed two different sets of standards for quantitative and qualitative research in education. Acceptable quantitative studies required hypothesis testing for research and experimental designs with random assignment for evaluations. Acceptable qualitative research was described—quite incomprehensively—as a list of methods and a preliminary form of investigation requiring additional assessment of the "experimental knowledge" derived from the methods.

Here, key differences in purpose among the definitions we are considering are important. Definitions in REA (1999) and related statutes that authorize funds for the provision of educational services (e.g., NCLB [2001], bills pending to reauthorize the Individuals with Disabilities Education Act [IDEA] [IDEA, 2003], and parts of the Higher Education Act [HEA] [HEA, 2003])[3] affect *service providers* and the kind of *existing* research they can use to justify program expenditures. In contrast, definitions appearing in bills to reauthorize OERI (e.g., H.R. 4875 [2000], H.R. 3801 [2002], and ESRA [2002]) set parameters for the kinds of education research that can be funded by (now) IES. Thus, they affect *researchers* and the kind of work they do.

As OERI reauthorization progressed, researchers began to take notice that such definitions would directly shape the future of education research. Kenji Hakuta, the chair of NERPPB at the time, turned to the NRC to inject the voice of researchers into policy initiatives of this kind. Thus, in early fall 2000 the NRC was formally asked to assemble a committee of education researchers to investigate what constitutes scientific research in education. In De-

(5) SCIENTIFICALLY BASED QUANTITATIVE RESEARCH STANDARDS.—The term "scientifically based quantitative research standards"—

(A) means the application of rigorous, systemic, and objective procedures to obtain valid knowledge relevant to education activities and programs; and

(B) includes research that—

(i) employs systematic, empirical methods that draw on observation or experiment;

(ii) involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;

(iii) relies on measurements or observational methods that provide valid data across evaluators and observers and across multiple measurements and observations and across studies by the same or different investigators;

(iv) is evaluated using experimental designs in which individuals, entities, programs, or activities are assigned to different conditions with appropriate controls to evaluate the effects of the condition of interest through random assignment experiments, or other designs to the extent such designs contain within-condition or across-condition controls; and

(v) ensures experimental studies are presented in sufficient detail and clarity to allow for replication, or at a minimum offer the opportunity to build systematically on its findings.

(6) SCIENTIFICALLY BASED QUALITATIVE RESEARCH STANDARDS.—The term "scientifically based qualitative research standards"—

(A) means the systematic collection and analysis of data often associated with traditions of inquiry historically based in the humanities, such as narrative analysis; and

(B) includes research that—

(i) uses some combination of participant observation, in-depth interviewing and document collection;

(ii) is intended to explore issues and hypotheses whose underlying dynamics and factors are not sufficiently well refined, understood, or amenable to experimental control to permit adequate study through quantitative research;

(iii) may include case studies, ethnographies, life histories, multi-site case studies, and participatory action research; and

(iv) uses approaches to assess the experimental knowledge acquired to assure that the findings are scientifically valid and replicable.

FIGURE 1. *Language defining scientifically based research in the "original Castle Bill" (H.R. 4875, 2000, p. 3).*

cember 2000, the NRC Committee on Scientific Principles for Educational Research began its work.

In November 2001, *SRE* (NRC, 2002) was released in prepublication form. In it, the committee argued that scientifically based research is defined by a set of principles (see Figure 2), not by research methods (quantitative or qualitative), and that the principles guiding scientific research in education are in many ways the same regardless of method. The committee reached this conclusion after reviewing *actual* research programs—both basic and applied—in natural science, social science, education, medicine, and agriculture. Several of these research programs, representing various fields, are discussed in the report to illustrate the grounds for this conclusion. The conclusion rests on the finding that most research programs in all these fields proceed in ways consistent with postpositivism (not logical positivism) and are attuned to values, complex interactions, and contextual features in the manner of social science (not physics) research.

A few months after the release of *SRE* (NRC, 2002), the Subcommittee on Education Reform of the U.S. House Education and Workforce Committee, chaired by Rep. Castle, called a hearing to invite expert testimony on issues about the then-still-pending reauthorization of OERI. The NRC was called to testify on pertinent findings from *SRE*, which includes a chapter of recommendations for a federal education research agency. In outlining these findings, the testimony challenged the wisdom of the definitions appearing in

SCIENTIFIC PRINCIPLE 1
Pose Significant Questions That Can Be Investigated Empirically

SCIENTIFIC PRINCIPLE 2
Link Research to Relevant Theory

SCIENTIFIC PRINCIPLE 3
Use Methods That Permit Direct Investigation of the Question

SCIENTIFIC PRINCIPLE 4
Provide a Coherent and Explicit Chain of Reasoning

SCIENTIFIC PRINCIPLE 5
Replicate and Generalize Across Studies

SCIENTIFIC PRINCIPLE 6
Disclose Research to Encourage Professional Scrutiny and Critique

FIGURE 2. *Principles used to define scientifically based research in Scientific Research in Education (NRC, 2002, pp. 3–5).*

H.R. 4875 (2000), arguing that they had no place in federal legislation authorizing education research funding:

> The problem [with the definitions] is with their use as a federal mandate. The NRC report makes clear that the objectivity and progress of scientific understanding in any field—**not** just education research—derives not from a given methodology or a given person. Rather, it comes from the community of researchers. . . . A federal education research agency should play a major role in spurring those improvements . . . through mechanisms like . . . developing high standards of quality in close collaboration with the field. (See http://edworkforce.house.gov/hearings/107th/edr/oeri22802/towne.htm for the complete written testimony submitted to the *Congressional Record*.)

For their part, the *SRE* principles outline a general form of inquiry and stress that researchers must have the flexibility to choose methods based on their research questions and to draw conclusions that are valid for the questions and methods used.

In January 2002, 2 months after the initial release of *SRE* (NRC, 2002), NCLB (2001) was passed by Congress and signed by the president. NCLB also included a definition of scientifically based research, but it was not the same as what was proposed in the original Castle Bill (H.R. 4875, 2000) or in *SRE*. Furthermore, as discussed above, the reason for defining scientifically based research in NCLB was to specify what would count as evidence to justify federal program dollars (not to specify the kind of education research that could be federally funded).

In NCLB (2001), scientifically based research is defined more narrowly than in either H.R. 4875 (2000) or *SRE* (NRC, 2002). Scientifically based research becomes testing hypotheses and using experimental and quasi-experimental designs only, and preferring random assignment (see Figure 3).

In the summer of 2002, a preference for the narrower NCLB-type (2001) definition became evident at OERI (before its reestablishment as IES). For example, in August 2002, OERI awarded the What Works Clearinghouse (WWC) $18.5 million to "assess and report . . . the strength and nature of scientific evidence on the effectiveness of different educational programs, products, and practices . . . claimed to enhance important student outcomes. . . . Claims of effectiveness will be assessed with respect to the quantity, quality, and relevance of evidence, and the magnitude of effects . . ." (see http://www.ed.gov/offices/OERI/whatworks/). A look at the WWC website that August made clear that clinical trials were the model for assessment of effectiveness, and achievement test scores were the outcome of paramount interest. At about the same time, the Department of Education's 2002–2007 strategic plan (see http://www.ed.gov/about/reports/strat/plan2002-07/plan.pdf) was announced, including the goal that 75% of its funded research addressing causal claims should use random assignment by 2004. In fact, in FY 2002 approximately 74% of all IES projects (100% of projects addressing causal claims) used this design (see FY 2002 Dept. of Ed. Performance and Accountability Report at http://www.ed.gov/about/reports/annual/2002report/obj.pdf).

In the fall of 2002, the final version of the Castle Bill (now H.R. 3801 [2002]) to reauthorize OERI and to define the standards for federally funded education research (and the bill that *SRE* [NRC, 2001] was intended to affect) passed Congress and was signed by the president. Thus, ESRA (2002) became law. It replaced OERI with IES, and it contained yet another set of definitions for scientifically based research in education (see Figure 4).

As in *SRE* (NRC, 2002), the ESRA (2002) definitions of scientifically based research that can receive federal education funding are relatively broad. There are neither different standards for quantitative and qualitative work, nor is it implied that qualitative research has no standards (i.e., is simply a list of methods) or is only preliminary. More importantly, in ESRA research is not confused with research methods; that is, its definitions are for research writ large rather than for methods only. Furthermore, ESRA no longer includes the requirement that studies always "test hypotheses," thereby opening up space for exploratory, descriptive, naturalistic, and hypothesis-generating studies critical to scientific research. ESRA also acknowledges that causal conclusions can be drawn from nonrandom assignment designs, and it revises the original Castle Bill language (H.R. 4875, 2000) associated with other causal methods from insisting on "controls" to the more appropriate call for the research to rule out competing explanations for observed differences. And, ESRA includes the key phrase "as appropriate to the research being conducted" (Sec. 102, No.18, p. 4). The inclusion of this phrase signals that research cannot be prescribed a priori, but is nuanced according to the nature of the individual investigation. Finally, ESRA includes the

The term "scientifically based research":

(A) Means research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs; and

(B) Includes research that:

(i) Employs systematic, empirical methods that draw on observation or experiment;

(ii) Involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;

(iii) Relies on measurements or observational methods that provide reliable and valid data across evaluators and observers, across multiple measurements and observations, and across studies by the same or different investigators;

(iv) Is evaluated using experimental or quasi-experimental designs in which individuals, entities, programs, or activities are assigned to different conditions and with appropriate controls to evaluate the effects of the condition of interest, with a preference for random-assignment experiments, or other designs to the extent that those designs contain within-condition or across-condition;

(v) Ensures that experimental studies are presented in sufficient detail and clarity to allow for replication, or, at a minimum, offer the opportunity to build systematically on their findings; and

(vi) Has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective, and scientific review.

FIGURE 3. *Definition of scientifically based research in No Child Left Behind Act of 2001 (pp. 126–127).*

provision that methods be appropriate to address the particular question associated with an investigation.

Changes Over Time Based on Public Input

Comparing the original Castle Bill (H.R. 4875, 2000) with its final version as ESRA (2002), important changes occurred over time in the language and scope of federal education research. These changes may seem minor to many in the education research community, but we think it is clear that the ESRA definitions are more inclusive of various research designs and more sensitive to the realities of research in practice than those in the original Castle Bill. And although there are many potential sources of these changes, the differences between the original Castle Bill and ESRA and the similarities between *SRE* (NRC, 2002) and ESRA suggest that *SRE* and the congressional testimony based on it had some effect on the law.

Similarly, there are indications that the procedures to be used by the WWC are being modified and broadened based on public input. In November 2002, WWC released its draft procedures for identifying the characteristics of research studies to be included in its "evidence-based reports" of educational topics. The procedures, referred to as a Study DIAD (Design and Implementation Assessment Device), were published on the WWC website (http://www.w-w-c.org), and public comment was invited. In early March 2003, WWC updated the website to include the comments it received ($n = 47$) and the changes it planned to make. Below is an excerpt taken from the website on May 25, 2003, and dated March 5, 2003; a complete list of the changes made and the comments received during the November–December 2002 comment period are available at www.w-w-c.org/standards.html.

Summary of Changes to the Study DIAD as a Function of Public Input

The current version of the Study DIAD has changed significantly. . . .

Quantitative research focus. Many individuals were concerned by the focus on quantitative research. For example, the WWC received comments expressing concern that the WWC neglected qualitative research. Others suggested that the WWC develop a parallel set of guidelines for qualitative research. In response, the WWC reworded statements in the introduction to the Study DIAD to emphasize that (a) the work of the WWC focuses on the best methods for assessing causal effectiveness but that (b) the WWC does not believe that quantitative methods are the only methods that can be called "scientific."

SCIENTIFICALLY BASED RESEARCH STANDARDS—

(A) The term "scientifically based research standards" means research standards that—

(i) apply rigorous, systematic, and objective methodology to obtain reliable and valid knowledge relevant to education activities and programs; and

(ii) present findings and make claims that are appropriate to and supported by the methods that have been employed.

(B) The term includes, appropriate to the research being conducted—

(i) employing systematic, empirical methods that draw on observation or experiment;

(ii) involving data analyses that are adequate to support the general findings;

(iii) relying on measurements or observational methods that provide reliable data;

(iv) making claims of causal relationships only in random assignment experiments or other designs (to the extent such designs substantially eliminate plausible competing explanations for the obtained results);

(v) ensuring that studies and methods are presented in sufficient detail and clarity to allow for replication or, at a minimum, to offer the opportunity to build systematically on the findings of the research;

(vi) obtaining acceptance by a peer-reviewed journal or approval by a panel of independent experts through a comparably rigorous, objective, and scientific review; and

(vii) using research designs and methods appropriate to the research question posed.

FIGURE 4. *Scientifically based research in the Education Sciences Reform Act of 2002.*

Treatment of different research designs. Other commentors wondered if and/or how research designs other than randomized trials could be accommodated by the Study DIAD. There is a new section in the current version of the Study DIAD for assessing studies using regression discontinuity designs. There is also a separate section assessing experimental designs and a separate section assessing quasi-experimental designs. In the future, the revised structure of the Study DIAD will allow the WWC to add sections for assessing other designs (e.g., single subject and interrupted time series designs).

Other important design features. Commentors proposed an extensive array of additional design features they felt should be included in the Study DIAD. The WWC discussed many of these . . . , weighing (a) the desire to have the Study DIAD be as comprehensive as possible versus (b) the frequency with which features actually appear in studies and the need to prevent the instrument from becoming unwieldy. The Study DIAD now includes a list of "Other Characteristics to Code from Studies and Examine as Potential Moderators of Effect Size." The previous version of the Study DIAD contained a reference to this list, but it is now explicitly part of the Study DIAD materials, appearing as an appendix. It contains over 30 features of study design and implementation that should be coded about studies included in WWC Evidence Reports. . . .

Alignment of intervention and outcome. Some features were added to the Study DIAD in response to suggestions. For example, in response to articulated concerns, an additional question is now included which assesses the alignment of the intervention and the outcome. . . . Alignment problems can occur when there is little relation between an intervention and an outcome (e.g., when students are taught math but reading outcomes are measured) or when there is too much overlap between an intervention and the outcome (e.g., in a study of reading comprehension, the intervention students were exposed to specific reading passages that appear verbatim on the outcome measure, while comparison students did not receive this exposure). . . .

Again, many are likely to be disappointed that the changes anticipated by WWC are not more extensive. But an equally important point here is that *some changes are being made*, and they are apparently being made, at least in part, be-

cause members of the public, including the education research community, are expressing their views and concerns.

Conclusion

The idea of scientifically based research in education is contested, continuing a long history of debate within the field (Lagemann, 2000). Many agree that research in education can and should be "scientifically based," but they disagree about the meaning of the phrase. Others believe that the drive for scientifically based education research is misguided. In this contested arena, federal education policymakers are moving forward to define and implement scientifically based research for their own practices. They are doing so with varying amounts of public input and varying degrees of responsiveness to it. In the chronology outlined here, "scientifically based research," narrowly conceived for service providers trying to justify their use of federal dollars, was initially proposed as the standard for all federally funded education research. With public input, including some from education researchers and not all of it consistent, definitions of scientifically based research for education research were broadened somewhat and eventually adopted as law in broader form. Although many researchers may argue that the broader definitions are still ill conceived or too restrictive, it is encouraging that some changes to federal policy can and do occur in accord with public input and scrutiny from the education research community. Would that there be more of it.

NOTES

We wish to thank Tina Winters, research staff at the Center for Education of the National Research Council, for her able assistance researching the congressional history of the scientifically based research definitions.

[1] Members listed with their affiliations—at the time of the *SRE* (NRC, 2002) publication—included Richard Shavelson (chair), Stanford University and Center for the Advanced Study of Behavioral Sciences; Donald Barfield, WestEd; Robert Boruch, University of Pennsylvania; Jere Confrey, University of Texas at Austin; Rudolph Crew, Stupski Foundation; Robert DeHaan, Emory University; Margaret Eisenhart, University of Colorado at Boulder; Jack Fletcher, University of Texas at Houston; Eugene Garcia, University of California at Berkeley; Norman Hackerman, Welch Foundation; Eric Hanushek, Hoover Institution; Robert Hauser, University of Wisconsin at Madison; Paul Holland, Educational Testing Service; Ellen Condliffe Lagemann, New York University and Spencer Foundation; Denis Phillips, Stanford University; and Carol H. Weiss, Harvard University.

[2] The views expressed in this article are ours. They do not represent the position of the NRC or the other members of the NRC Committee on Scientific Principles for Educational Research on which we served. We would like to thank the *Educational Researcher* editors and anonymous reviewers for their help in developing this article; they have sharpened our thinking in numerous ways.

[3] Reauthorization bills for IDEA and parts of HEA have passed the House with similar definitions. They await Senate action, conference, and presidential signature or veto.

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