

ONE

ON “EDUCATION RESEARCH”

Scientists are not content with running their own playpens in accordance with what they regard as the rules of scientific method, they want to universalize these rules, they want them to become part of society at large and they use every means at their disposal—argument, propaganda, pressure tactics, intimidation, lobbying—to achieve their aims.

—Paul Feyerabend

Taking a cue from Jacques Derrida, who asked a similar question of the university, we ask in this book: *Today, how can we not speak of education research?*¹ One of our answers to this question will be that we cannot not speak of education research. Given the importance of education in our society, its research cannot but be spoken about, and perhaps with a certain urgency. Indeed, since the idea of “education research” came into existence, there has been much speaking about it. The interesting thing is that such speaking is done without a clear sense of an object. After all, what is “education”? Is it simply training? Is it schooling? Does it specify a particular set of individual and institutional phenomena? Does it have a “product?” Is it a service? In this sense, adding the term *research* to *education* is not particularly problematic, since these kinds of questions can be answered empirically. Research, we are told, is the “empirical part of science,”² and it explores and discovers new situations and relationships to understand.³ But does not “education” also entail particular ideals—about individuals, institutions, society, the past, the

Paul Feyerabend, *Against Method* (New York: Verso, 1975), 220.

1. Jacques Derrida, “The Principle of Reason: The University in the Eyes of its Pupils,” *Graduate Faculty Philosophy Journal* 10, no. 1 (1984): 5–29, 5.

2. Andrea Vierra and Judith Pollock, *Reading Educational Research*, second ed. (Scottsdale, AZ: Gorsuch Scarisbrick Publishers, 1992), 5.

3. David R. Krathwohl, *Methods of Educational and Social Science Research: An Integrated Approach* (New York: Longman, 1993).

future, and so on? If so, adding the word *research* to *education* appears more troublesome. Inquiry on ideals need not be—perhaps should not be—entirely an empirical practice. Education as an ideal requires that one rethink the term *education research* as possibly incoherent, since it implies an empiricism that may be opposed to ideas and, hence, ideals. Moreover, we tend not to see educational ideals as such, that is, as *ideals*, often formulating them in notions that appear empirical, at first glance, such as “teaching,” “learning,” and even the idea of “the child” itself.⁴

Yet we have another response to our initial question. Also taking a cue from Derrida, in rephrasing the question in the negative, “How *can we not* speak of education research,” we want to alert the reader that our real purpose is to suggest how one *should not* speak of education research. We will urge readers to reject much of the empiricism and most of the ideas that formulate the current discourse on education research. We will, of course, speak of “education research” throughout this book, but we are tempted to place the term always within quotation marks to signify that the term is to be made problematic. For now, we say simply that we will question both its empiricism and its ideas.

Education research is spoken about quite frequently, though not as if the concept was problematic, as we have just indicated. This is not to say that others have not problematized particular aspects of education research. Indeed, that is all they have done, it seems to us. While it may have always been so, it seems from reading the literature about education research that there appears today a sense in which education research is in a state of flux. It seems to be grounded predominantly in positivist theories, emphasizing often quantitative inquiries into educational phenomena, which is likely due to its roots in psychology and behaviorism.⁵ One can see, however, an increase (perhaps a great one over the last thirty years or so) in constructivist understandings of reality, leading to qualitative, ethnographic, and critical inquiries into educational problems.⁶

4. Bernadette Baker argues that the “child” is not a natural phenomenon, but a political space for the productions of categories, distinctions, techniques, and reasonings. See Bernadette Baker, “‘Childhood’ in the Emergence and Spread of U.S. Public Schools,” in *Foucault’s Challenge: Discourse, Knowledge, and Power in Education*, ed. Thomas S. Popkewitz and Marie Brennan (New York: Teachers College Press, 1998), 117–43, 138.

5. Ellen Condliffe Lagemann, “Contested Terrain: A History of Education Research in the United States, 1890–1990,” *Educational Researcher* 26, no. 9 (1997): 5–17, 5.

6. See Harry F. Wolcott, “Ethnographic Research in Education,” in *Complementary Methods for Research in Education*, second ed., ed. Richard M. Jaeger (Washington, DC: American Educational Research Association, 1988), 327–53; see also Thomas A. Schwandt, “Constructivist, Interpretivist Approaches to Human Inquiry,” in *Handbook of Qualitative Research*, ed. Norman K. Denzin and Yvonna S. Lincoln (Thousand Oaks, CA: SAGE, 1994), 118–37.

The one thing about education research that can be said without offending anybody is that it privileges the empirical. In other words, education research is understood as discovering/uncovering, analyzing, reporting, and representing human experiences. Such study of human experiences, as is the case with all the studies of human phenomena, is premised on an understanding that such experience is external to the research act itself, a premise we will critique in subsequent chapters, particularly in chapter 4. For now, let us say that this empirical understanding of education research leads to critiques taking the form of polemics about (1) the methods and methodologies used by researchers,⁷ (2) the so-called "paradigms" undergirding the study of human subjects,⁸ and (3) the purposes to which education research should be put to use.⁹ Some of these critiques, however, seem directed at something more "ethical," for lack of a better word. These other critiques, as Yvonna Lincoln suggests, destabilize the notion of the detached observer and call for a better understood (and more ethical) relationship between the researcher and the researched.¹⁰ Here the research act is viewed as one of power, and so researchers must be concerned with questions associated with representation and voice, such as: Who speaks for whom? How does one do such speaking? and Is all this correct, ethical, and reciprocal? The concern with voice and representation leads to critiques, such as James Scheurich and Michelle Young's, asserting that much education research privileges (but unconsciously so) Western theories that devalue those of non-Western cultures.¹¹ Such criticisms have led to recent questions about the extent to

7. See, for example, Elliot W. Eisner, "The Promise and Perils of Alternative Forms of Data Representation," *Educational Researcher* 26, no. 6 (1997): 4–10; Richard E. Mayer, "What Is the Place of Science in Educational Research?" *Educational Researcher* 29, no. 6 (2000): 38–39; and Richard E. Mayer, "Resisting the Assault on Science: The Case for Evidence-Based Reasoning in Educational Research," *Educational Researcher* 30, no. 7 (2001): 29–30; Tom Barone, "Science, Art, and the Predispositions of Educational Researchers," *Educational Researcher* 30, no. 7 (2001): 24–28.

8. See, for example, Mark A. Conatas, "The Changing Nature of Educational Research and a Critique of Postmodernism," *Educational Researcher* 27, no. 2 (1998): 26–33, and "Deciphering Postmodern Educational Research," *Educational Researcher* 27, no. 9 (1998): 36–42; Egon G. Guba and Yvonna S. Lincoln, "Competing Paradigms in Qualitative Research," in *Handbook of Qualitative Research*, ed. Norman K. Denzin and Yvonna S. Lincoln (Thousand Oaks, CA: SAGE Publications, 1994), 105–17; Mayer, "What Is the Place of Science in Educational Research?"

9. George Keller, "Does Higher Education Research Need Revisions?" *The Review of Higher Education* 21, no. 3 (1998): 267–78; William G. Tierney, "On Translation: From Research Findings to Public Utility," *Theory into Practice* 39, no. 3 (2000): 185–90; John Willinsky, "The Strategic Education Research Program and the Public Value of Research," *Educational Researcher* 30, no. 1 (2001): 5–14.

10. See Yvonna S. Lincoln, "Emerging Criteria for Quality in Qualitative and Interpretive Research," *Qualitative Inquiry* 1, no. 3 (1995): 275–89.

11. See James J. Scheurich and Michelle D. Young, "Coloring Epistemologies: Are Our Research Epistemologies Racially Biased?" *Educational Researcher* 26, no. 4 (1997): 4–16.

which education research can represent “reality” (even a socially constructed one), since what is deemed “real” is a product of multiple, shifting meanings and is, therefore, necessarily partial and incomplete.¹²

In short, much of the discourse on education research relates to the empirical realm and leads one to ask questions about which methods are most appropriate in any given situation (e.g., quantitative versus qualitative), as well as, more generally, which of the so-called “paradigms” suit particular questions (e.g., positivism versus constructivism or critical theory). Yet, we can subsume the “paradigm” concerns within the methodological ones, since each is an aspect of the other. That is, “paradigms” cannot exist outside of the methodological theories that determine which questions can be asked and how.¹³ However, and to repeat, what seems often spoken about education research, then, is its empiricism, which to us means also its methodology. It is in this context of debate over education research’s empiricism and methodology that one can read the recent attempts at defining education research as “scientific.”

The concern with whether education research is scientific is not new.¹⁴ Ellen Lagemann points out that the formal study of education did not begin until the turn of the twentieth century, with the establishment of university schools and departments of education and the institutionalization within them of an aspiration to create a “science of education.” Since then, it has elicited a continuous litany of complaints regarding its value and validity.¹⁵ Lagemann argues that such criticisms have reflected a deep-seated American ambivalence toward education, with a tendency to rely on education to solve social problems yet discounting the costs and complexities involved in educating.¹⁶ Lagemann appears to us to deem such ambivalence problematic, but we think that this “ambivalence” should be celebrated rather than feared and controlled. Schools are powerful instruments of normalization, and dictating what and how they do things also gives a tremendous amount of power to particular individuals and institutions.

It seems to us that the debate over whether education research can and should be scientific has reached a fevered pitch of late, a phenomenon often attributed to recent federal initiatives to define “quality” education

12. See Lincoln, “Emerging Criteria.”

13. James Paul Gee, “It’s Theories All the Way Down: A Response to Scientific Research in Education,” *Teachers College Record* 107, no. 1 (2005): 10–18, 13; Thomas S. Popkewitz, “Is the National Research Council Committee’s Report on Scientific Research in Education Scientific? On Trusting the Manifesto,” *Qualitative Inquiry* 10, no. 1 (2004): 62–78, 66–68.

14. For two examples of such a history, see Ellen Condliffe Lagemann, *An Elusive Science: The Troubling History of Education Research* (Chicago: University of Chicago Press, 2000); Robert M. W. Travers, *How Research Has Changed American Schools: A History from 1840 to the Present* (Kalamazoo: Mythos Press, 1983).

15. Lagemann, “Contested Terrain,” 5.

16. *Ibid.*

research via a narrow scientism.¹⁷ We think this attribution is largely correct, but not entirely so. The concern with a "science of education" has been concomitant with the institution of education research in universities, as Lagemann points out. And even before the recent federal initiatives there was increased debate within the field about whether education research should be scientific. For example, Richard Mayer, taking exception to Elliot Eisner's argument that education research could be broadened to include studies that are not scientific,¹⁸ argues that education research should be kept "firmly within the domain of science," since the failure to do so will slow the progress of educational theory (which "must be tested against empirical data") and would "diminish the reputation in our field."¹⁹ (We think these remarks reflect a concern with professionalizing education researchers, a point we elaborate upon later in this chapter.) We will argue in this book that while the recent federal initiatives are largely responsible for the increased debate over the scientific nature of education research, other political forces made such federal initiatives possible, and that they continue to be at work to ensure that such a debate is not left open.

In this chapter we discuss the federal initiatives defining "good" education research as a particular kind of scientific method, and we introduce our critique of the National Research Council's (NRC) 2002 report, *Scientific Research in Education (SRE)*.²⁰ *SRE* purports to explain what constitutes scientific research in education. This report is symptomatic of the social, political, and economic forces shaping educational inquiry, five of which form the primary bases of the chapters in this book: (1) the professionalization of education researchers, (2) the scientism and positivism of education research, (3) the normalization of doctoral work, (4) the institution of science in our lives, and (5) the political economy of research. Before we proceed with these arguments, we need to establish the context for the NRC's attempt to define a science of education, namely, the federal government's recent attempts to ensure "scientifically based" education research.

A "FEDERAL" SCIENCE?

Since *SRE* was written in the context of the federal government's attempt to create a science *for* education, it is important to give an account of such

17. See Patti Lather and Pamela Moss, "Introduction: Implications of the Scientific Research in Education Report for Qualitative Inquiry," *Teachers College Record* 107, no. 1 (2005): 1–3.

18. Eisner, "The Promise and Perils of Alternative Forms of Data Representation."

19. Mayer, "What Is the Place of Science in Educational Research?" 38. Mayer iterated these points in a response to Tom Barone's critique of his article; see Tom Barone, "Science, Art, and the Predispositions of Educational Researchers;" and Mayer, "Resisting the Assault on Science."

20. National Research Council, *Scientific Research in Education*, ed. Richard J. Shavelson and Lisa Towne (Washington, DC: National Academy Press, 2002). Available at <http://www.nap.edu/> (Retrieved February 5, 2005).

an initiative. Federal attempts to define education research as scientific first appeared in the *Reading Excellence Act* in 1999 (REA), providing funds for “scientifically based reading research,” which

(A) means the application of rigorous, systematic, and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties; and (B) shall include 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 (iv) has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective, and scientific review.²¹

REA, in essence, requires grantees to develop, select, or implement reading programs grounded in its definition of the “best science.”²² It is clear that what this legislation defines as the best science is one grounded in narrow theories of experimentalism, quantifiability, and generalization. Yet, it is important to note that while President George W. Bush’s administration has intensified these efforts at establishing a science for education, the REA was passed under President Bill Clinton’s term in office. This movement toward science, as we argue in more detail in chapter 4, transcends the particular political ideologies of the politicians who codify it in law.

After REA, but in line with it, draft legislation was introduced in the summer of 2000 by United States Representative Mike Castle (R-Del) that pertained to the reauthorization of the Office of Educational Research and Improvement (OERI). The proposed “Castle Bill” sought to improve education research by requiring that federal dollars be spent on “scientifically valid research” and proposed standards for “scientifically based quantitative” and “scientifically based qualitative” research.²³ The bill as such never came to fruition, but it sparked a great deal of debate about scientific education research and likely led to the establishment of the NRC committee that drafted *SRE*.

It was, however, passage of the *No Child Behind Act* of 2001 (NCLB) that brought this issue of scientific education research to a head. NCLB

21. Reading Excellence Act of 1999, Pub. L. No. 105–277 (1999). Available at: http://www.ed.gov/offices/OESE/REA/reading_act.pdf (Retrieved July 1, 2005).

22. Margaret Eisenhart and Lisa Towne, “Contestation and Change in National Policy on ‘Scientifically Based’ Education Research,” *Educational Researcher* 32, no. 7 (2003): 31–38, 32.

23. *Ibid.*, 32–33.

contains more than one hundred references to "scientifically based research," which it defines, similar to REA, as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs." Such research

(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 quasiexperimental 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 controls; (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.²⁴

As with REA, the NCLB privileges scientism over scientific inquiry, establishing experimental methods as providing the best evidence of educational effectiveness. This legislation led to more legislation that explicitly sought to recreate education research within its narrow scientism, specifically the *Education Sciences Reform Act of 2002* (ESRA).

ESRA similarly defines "scientifically based research standards" as those that "(1) apply rigorous, systematic, and objective methodology to obtain reliable and valid knowledge relevant to education activities and programs; and (2) present findings and make claims that are appropriate to and supported by the methods that have been employed." To be "rigorous, systematic, and objective," and to be deemed "reliable and valid" the research must be:

(1) employing systematic, empirical methods that draw on observation or experiment; (2) involving data analyses that are adequate to support the general findings; (3) relying on measurement or

24. No Child Left Behind Act of 2001, Pub. L. No. 107-110 (2001). Available at <http://www.ed.gov/policy/elsec/leg/esea02/107-110.pdf> (Retrieved February 5, 2005).

observational methods that provide reliable data; (4) 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); (5) 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; (6) obtaining acceptance by a peer-reviewed journal or approval by a panel of independent experts through a comparably rigorous, objective, and scientific review; and (7) using research designs and methods appropriate to the research question posed.²⁵

ESRA further defines “scientifically valid education evaluation” as that which

(a) adheres to the highest possible standards of quality with respect to research design and statistical analysis; (b) provides an adequate description of the programs evaluated and, to the extent possible, examines the relationship between program implementation and program impacts; (c) provides an analysis of the results achieved by the program with respect to its projected effects; (d) employs experimental designs using random assignment, when feasible, and other research methodologies that allow for the strongest possible causal inferences when random assignment is not feasible; and (e) may study program implementation through a combination of scientifically valid and reliable methods.²⁶

The ESRA is important for a number of reasons. First, it defines scientific research narrowly as experimental in nature. Second, it was the first explicit attempt to establish a science for education research, unlike the REA and the NCLB, which arguably were concerned with larger educational issues.²⁷ Third, ESRA replaced OERI with the Institute of Education Sciences (IES), which is in charge of funding education research, and it does so via a narrow vision of science.

The IES was officially established in 2002 by President George W. Bush. President Bush also appointed Grover J. Whitehurst, who was the assistant secretary of OERI, as the director of IES for a six-year term. IES

25. The Education Sciences Reform Act of 2002, Pub. L. No. 107-279 (2002): 4. Available at <http://www.ed.gov/policy/rschstat/leg/PL107-279.pdf> (Retrieved February 5, 2005).

26. *Ibid.*

27. We found it more than a little hypocritical that the federal government under George W. Bush insisted upon science in education while it sought to impose its religious, “faith-based,” and arguably antiscientific views of the world seemingly everywhere else.

is composed of the National Center for Education Research, the National Center for Education Statistics, and the National Center for Education Evaluation and Regional Assistance. Its purported mission is to provide and expand knowledge on the condition of education, to promote practices that improve academic achievement, and to monitor the effectiveness of federal and other education programs. Its goal is to transform education "into an evidence-based field in which decision makers routinely seek out the best available research and data before adopting programs or practices that will affect significant numbers of students."²⁸

Whitehurst's *Statement of Research Methods* on the IES Web site is important to this discussion, so it is worth quoting at length:

The methods supported by the Institute vary with the question being addressed. They include methods for producing sound descriptive summaries, including surveys, observational data, and administrative records; methods appropriate for isolating possible relationships such as multivariate analysis; and methods designed to address questions concerning the effectiveness of particular policies or practices, including single-subject, quasi-experimental, and experimental approaches. *We strongly prefer, as do policy makers and the public, randomized field trials when the question is the effectiveness of mature programs and practices.* Such trials virtually always include the collection of process data that can provide insight into why an *intervention* does or does not work and that allow an examination of the relationship between implementation and outcomes. However, randomized trials are only a part of our portfolio. A substantial portion of our funding goes to upstream work in which researchers are developing new programs or identifying promising practices, using methods appropriate for those investigations. We also invest in the *development and validation of measurement and assessment tools.* All of the Institute's research programs are embedded in practice, requiring both the selection of topics that are *highly relevant* to practitioners and the conduct of research in authentic education delivery settings. The Institute aims to transform education into an *evidence-based* field. We are devoted to establishing the *rigorous and relevant* research base and the effective dissemination strategies that are a prerequisite to that goal.²⁹

28. Institute of Education Sciences, *About the Institute of Education Sciences* (Washington, DC: Institute of Education Sciences, n.d.). Available at <http://www.ed.gov/about/offices/list/ies/index.html> (Retrieved June 25, 2005).

29. Grover J. Whitehurst, *Statement on Research Methods* (Washington, DC: Institute of Education Sciences, n.d.), emphasis added. Available at <http://www.ed.gov/about/offices/list/ies/statement042104.html> (Retrieved June 25, 2005).

We are not sure to which “public” Whitehurst’s statement refers and are inclined to think that the reference is meaningless, since, we dare say, much of the public does not give this any thought at all. Regardless, the “we strongly prefer” makes it clear that the IES will privilege randomized field trials in the projects it will fund. This statement also mentions particular quantitative methods by name (“surveys,” “multivariate analysis,” “single-subject,” “quasi-experimental,” and “experimental”), indicating that these too will be given privileged consideration. It also seems to privilege studies on the “effectiveness” of programs, “interventions,” and “development and validation of measurement and assessment tools.” All these studies tend to be positivist. What it leaves out by name and by implication (e.g., qualitative and other interpretive approaches) is not considered “highly relevant” to practitioners, and it will not support the IES’s goal of making education an “evidence-field” or constitute the kind of “rigorous and relevant research” that will further that goal.

This movement toward privileging narrow methods was made clear in a report written by the Coalition for Evidence-Based Policy and commissioned by the IES.³⁰ This report purports to give practitioners the “tools to distinguish interventions supported by scientifically-rigorous evidence from those which are not.”³¹ It supposedly gives educators a guide for determining a study’s effectiveness, giving ratings to studies according to the strength of their evidence and designs. Some studies will have “strong” evidence of effectiveness; others will have “possible” evidence; and some will not have “meaningful” evidence. The report privileges the randomized controlled trial, which, when well designed and implemented, is considered the “gold standard” for evaluating an intervention’s effectiveness in fields such as medicine, welfare and employment policy, and psychology, and thus will constitute “strong” evidence of an intervention’s effectiveness.³²

Such narrow scientism is the kind of logic that supports the projects of the What Works Clearinghouse (WWC), which is controlled by the IES but was actually commissioned by the now defunct OERI. The WWC claims to provide “the public with a central and trusted source of scientific evidence of what works in education.” It aims to promote informed education decisions through a set of easily accessible databases and user-friendly reports that provide “education consumers” with ongoing, high quality review of the effectiveness of replicable educational interventions that seek to improve

30. Coalition for Evidence-Based Policy, *Identifying and Implementing Educational Practices Supported by Rigorous Evidence: A User Friendly Guide* (Washington, DC: Institute for Education Sciences, 2003). Available at <http://www.ed.gov/rschstat/research/pubs/rigorousetid/rigorousetid.pdf> (Retrieved June 25, 2005).

31. *Ibid.*, iii.

32. *Ibid.*, 1.

student outcomes.³³ WWC has selected a series of topics for which it will provide systematic review, including interventions seeking to improve middle school and elementary school mathematic achievement, beginning reading, character education, high school dropout, English language learning, pre-school children's school readiness, reductions of delinquent behavior, adult literacy, and peer-assisted learning in reading, math, and science.³⁴ It rates the intervention after determining the causal validity of each study. Studies will receive one of three ratings: (1) "Meets Evidence Standards," which will be assigned to "randomized controlled trials" that "do not have problems with randomization, attrition, or disruption, and regression discontinuity designs that do not have problems with attrition or disruption"; (2) "Meets Evidence Standards with Reservations," which will be assigned to "strong quasi-experimental studies that have comparison groups and meet other WWC Evidence Standards, as well as randomized trials with randomization, attrition, or disruption problems and regression discontinuity designs with attrition or disruption problems"; and (3) "Does Not Meet Evidence Standards," which will be assigned to "studies that provide insufficient evidence of causal validity or are not relevant to the topic being reviewed."³⁵

In addition to the narrow scientism that undergirds these policies, projects, and reports, what is also disturbing to us as education professors who must "prepare" future educators and researchers is the gutter utilitarianism associated with these projects. The notion that what counts as valuable research is "what works" reduces education to the least common denominator and will promote more, rather than less, "faddishness,"³⁶ as few educators will give any program the longevity that it may require to "prove" its effectiveness. Moreover, the presumptiveness of telling educators how to do their jobs reinforces the re-skilling (or re-professionalizing) of the field and, as a result, might mean fewer and fewer qualified teachers at a time when teacher shortages abound. The IES might help educators make better decisions by leaving them alone, rather than legitimate what will become an increased amount of "interventions" into their lives. Students

33. What Works Clearinghouse, *Who We Are* (Washington, DC: Institute for Education Sciences, n.d.). Available at: <http://www.whatworks.ed.gov/whoweare/overview.html> (Retrieved April 18, 2005).

34. What Works Clearinghouse, *Topics* (Washington, DC: Institute for Education Sciences, n.d.). Available at: http://www.whatworks.ed.gov/topics/current_topics.html (Retrieved April 18, 2005).

35. What Works Clearinghouse, *Review Process* (Washington, DC: Institute for Education Sciences, n.d.). Available at: <http://www.whatworks.ed.gov/reviewprocess/standards.html> (Retrieved April 18, 2005).

36. Because it has purportedly lacked scientificity, education research is seen as moving "from fad to fad." See Robert E. Slavin, "Evidence-Based Education Policies: Transforming Educational Practice and Research," *Educational Researcher* 31, no. 7 (2002): 15–21, 15.

and teachers are now mere widgets, to be manipulated and controlled by a slew of researchers seeking money and prestige from IES grants. Students and teachers will indeed become “oil wells,”³⁷ to be drilled and discarded if they do not produce as expected, regardless of the environmental impact of this search and discard mentality.

Thus, in the name of utility, the federal government now seeks to create a science for education research. Yet it must be stressed that this is not the first time the federal government has become interested in educational research; indeed, such involvement, in small or in large part, has coincided with the history of public education. And while the role of the federal government in education research has changed, it is a role it nevertheless has always had.³⁸ But there can be little question that these federal initiatives seek to promote scientism and utilitarianism at the expense of inquiry. The IES unabashedly privileges randomized trials in education, which are now defined as the “gold standard” of science. Many education researchers have little problem with this, since this is the logic of much of quantitative research. These education researchers *want* this intervention into their research by the federal government, an intervention that, ironically, is itself not subject to a randomized field trial or to a “what works” logic. For example, Robert Slavin, who is also on the board of directors of the Coalition for Evidence-Based Policy, argues that because of these federal initiatives education research is “on the brink of a scientific revolution that has the potential to transform policy, practice, and research,” and so at the “dawn of the 21st century, education is finally being dragged, kicking and screaming, into the 20th century.”³⁹ The federal movements toward defining valuable education research as experimental are good, Slavin argues, because they “create the kind of progressive, systematic improvement over time that has characterized successful parts of our economy and society throughout the 20th century, in fields such as medicine, agriculture, transportation, and technology.” Education has failed to do this in Slavin’s view, and so has simply “moved from fad to fad.”⁴⁰ For Slavin, only rigorous experiments evaluating replicable programs and practices can ensure confidence in

37. This is an analogy that SRE makes, paradoxically, to counter the simplistic logic of the “what works” mentality. Its logic being that as with oil wells, some projects will not produce effective results right away, and there will need to be much “drilling” before any such results come to fruition. The studies themselves are less important than the process of continually searching for good results. We discuss further the use of the oil well as an analogy for education research later in the chapter.

38. Maris A. Vinovskis, “The Changing Role of the Federal Government in Educational Research,” *History of Education Quarterly* 36, no. 2 (1996): 111–28.

39. Slavin, “Evidence-Based Education Policies,” 15.

40. *Ibid.*, 16.

education research by policy makers and educators, although he does allow that there still is a need for correlational, descriptive, and other disciplined inquiry in education.⁴¹

We agree with those who claim that the move to define education research as scientific in such a narrow way is highly problematic. Such a move toward scientism may also represent a kind of fundamentalism that threatens to turn education research solely into the large, randomized-sample, experimental design studies created on the clinical model—a model that promises to be another “gold standard” for producing scientific knowledge.⁴² What is interesting about this so-called “gold standard” that clinical trials are deemed to be is that federal initiatives assume in them rigor, reliability, and validity, and yet clinical trials may be sites of contested meaning, practices, and ethics.⁴³ Matthew Weinstein points out that while such trials are deemed emblematic of science, truth, and certainty, narratives of participants in clinical trials reveal different stories, ones of unruly participants who try to control the violence they feel foisted onto their bodies.⁴⁴

Yet, the federal government’s recent movement toward making education research scientific, even in such a narrow way, provides the context in which *SRE* is to be read and understood. Indeed, the NRC’s report apparently had an impact on the ESRA.⁴⁵ This report, as we have indicated, provides for us the point of departure for our concerns with education research. In chapter 2, we conduct a more extensive critique of the report, arguing that it is internally incoherent. In the next section, however, we summarize the salient features of the report and highlight a few of the critiques of the report in the literature.

41. David Olson’s response to Slavin’s article points out how problematic experiments are in education research, especially given that what counts as “treatment” is difficult to define, and causality is impossible to achieve in education. See David R. Olson, “The Triumph of Hope Over Experience in the Search for ‘What Works’: A Response to Slavin,” *Educational Researcher* 33, no. 1 (2004): 24–26. Slavin’s response to Olson’s article simply reiterates that we need reliable studies that we can give to practitioners and policy makers, and that while difficult, there are no better options to experimental methods for comparing alternative programs or policies. See Robert E. Slavin, “Education Research Can and Must Address ‘What Works’ Questions,” *Educational Researcher* 33, no. 1 (2004): 27–28. As we discuss later, we find these debates over whether experiments are possible in education to be beside the point about the federal intrusion into the education research arena in such an aggressive way.

42. Yvonna S. Lincoln and Gaile S. Cannella, “Dangerous Discourses: Methodological Conservatism and Governmental Regimes of Truth,” *Qualitative Inquiry* 10, no. 1 (2004): 5–14, 7.

43. Matthew Weinstein, “Randomized Design and the Myth of Certain Knowledge: Guinea Pig Narratives and Cultural Critique,” *Qualitative Inquiry* 10, no. 2 (2004): 246–60, 247.

44. *Ibid.*, 255.

45. Eisenhart and Towne, “Contestation and Change in National Policy,” 35.

THE NRC AND *SRE*

The National Research Council, as we said, is the operating arm of the National Academy of Sciences (NAS), which was established by President Abraham Lincoln in 1863 and is now an honorific society of distinguished scholars engaged in scientific and engineering research and, according to its self-proclamations, is “dedicated to the furtherance of science and technology and to their use for the general welfare.” The NAS eventually expanded to include the NRC in 1916, the National Academy of Engineering in 1964, and the Institute of Medicine in 1970. Since 1863, “the nation’s leaders have often turned to the National Academies for advice on the scientific and technological issues that frequently pervade policy decisions.” The NAS’s membership is comprised of approximately two thousand members and three hundred fifty foreign associates; members and foreign associates are elected in recognition for their distinguished and continuing achievements in original research, and such election is considered one of the highest honors that can be accorded a scientist or engineer. To conduct its work, the NAS enlists scientists, engineers, and other experts who volunteer their time to study specific concerns.⁴⁶

The NRC is the operating arm of the NAS. Its purpose is to further public knowledge and advise the federal government on engineering, science, and technology.⁴⁷ The NRC was commissioned by the United States Department of Education (DOE) to write *SRE*.⁴⁸ At the invitation of the DOE’s National Educational Research Policy and Priorities Board in the fall of 2000, the NRC assembled the Committee on Scientific Principles for Education Research (the “committee”) to address the question of what constitutes scientific research in education.⁴⁹ Its charge was to review and synthesize recent literature on the “science and practice of scientific research in education and consider how to support high quality science in a federal education research agency.”⁵⁰ The committee then translated this charge into three questions that organized its study: (1) What are the principles of scientific quality in education research? (2) How can a federal research agency promote and protect scientific quality in the education research it supports? (3) How can research-based knowledge in education accumulate?⁵¹

46. National Academy of Sciences, *About the NAS* (n.d.). Available at http://www.nasonline.org/site/PageServer?pagename=ABOUT_main_page (Retrieved June 25, 2005).

47. National Academy of Science, *The National Research Council* (n.d.). Available at <http://www.nationalacademies.org/nrc/> (Retrieved June 25, 2005).

48. In accordance with its mission of disseminating knowledge of science and technology, the NAS makes available free of charge the reports of its committees, including *SRE*. These reports are available at <http://www.nap.edu/> (Retrieved February 5, 2005).

49. *SRE* is the fifth report by the NRC concerning education research since 1958. See *SRE*, 21.

50. *Ibid.*, 22.

51. *Ibid.*, 22–24.

According to Bruce Albers, president of the National Academy of Sciences, *SRE* "offers a comprehensive perspective of 'scientifically-based' education research for the policy communities who are increasingly interested in its utilization for improving education policy and practice."⁵² Other than making the "policy communities" its target audience, rather than the people who will be most affected by the research the report advocates (i.e., students, teachers, administrators, parents, etc.), this statement is innocuous enough, since it appears to say only that the report seeks to provide a perspective on "scientifically-based" education research. It may have been written with that intention, but this report must be viewed in light of the federal government's attempt to create a science for education. The DOE, which commissioned the report, was restructuring itself to emphasize "scientific-based research" because the "field of education operates largely on the basis of ideology and professional consensus . . . and is incapable of the cumulative progress that follows from the application of scientific method."⁵³ (We do think the NRC report seeks to counter such a de-professionalizing view of education researchers.) The committee's explanation of what legitimately can be called "scientific education research," therefore, is not merely an academic exercise—it is not merely a perspective on what counts as scientific research. It will be part of the material practices that have and will continue to shape the course of education research, and thus of education itself, for the foreseeable future. Moreover, its understanding of scientific research in education was to be a way of countering what the committee accepted, uncritically, as the "prevailing view [that] the findings from education research studies are of low quality and are endlessly contested—the result of which is that no consensus emerges about anything."⁵⁴ This report, then, sought to legitimize education research, and since such research is deemed the empirical knowledge of education, the report would legitimize education itself. What it says, then, is not to be taken lightly.

The committee appears to challenge the recent federal initiatives to dictate experimentalism (i.e., privileging randomized field trials) and gutter utilitarianism (i.e., defining good research only as "what works") as emblematic of the scientific method. One of the assumptions it seeks to dispel was that "although science is often perceived as embodying a concise, unified view of research, the history of scientific inquiry attests to the fact there is no one method or process that unambiguously defines science."⁵⁵ For the committee, it is the questions that drive the methods, not the other way around, as the committee suggests is what the federal initiatives presuppose. Thus, the

52. *Ibid.*, vii. Emphasis added.

53. U.S. Department of Education, *Strategic Plan 2002–2007* (Washington, DC: U.S. Department of Education, 2002), 59. Available at: <http://www.ed.gov/about/reports/strat/plan2002-07/plan.pdf> (Retrieved October 20, 2003).

54. *SRE*, 28.

55. *Ibid.*, 24.

committee purports to take an “inclusive view” of science in education, one that would also include, apparently, qualitative approaches to understanding education phenomena. Indeed, the committee claims that quantitative and qualitative research are “epistemologically quite similar.”⁵⁶ Scientific research in any discipline and irrespective to methods, the report indicates, is

a continual process of rigorous reasoning supported by a dynamic interplay among methods, theories, and findings. It builds understandings in the form of models or theories that can be tested. Advances in scientific knowledge are achieved by the self-regulating norms of the scientific community over time, not, as sometimes believed, by the mechanistic application of a particular scientific method to a static set of questions.⁵⁷

What constitutes scientific inquiry, the committee indicates, is not attention to particular methods, but adherence to six fundamental principles, which it summarizes briefly in this sentence: “To be scientific, the design must allow direct, empirical investigation of an important question, account for the context in which the study is carried out, align with a conceptual framework, reflect careful and thorough reasoning, and disclose results to encourage debate in the scientific community.”⁵⁸ We will critique these principles in greater detail in chapter 2, but we will say here that, contrary to the committee’s claims, what constitutes science may indeed be its *methods*. If we are to follow Charles Sanders Peirce, we must grant that what allows science to be an effective way of settling opinions about the world is that it permits the kind of reasoning that allows us to perceive these “things as they are.” And it does this because it follows a particular *method* that does not rely on our feelings and intentions but itself involves the application of the method.⁵⁹

Furthermore, the supposed rejection of a definition of science in terms of particular methods does not mean that the committee defined science very broadly at all. It appears that it has at first glance when it states that scientific research can contribute to understanding and improving education, “especially when integrated with *other* approaches to studying human endeavors.”⁶⁰ Thus, according to the committee, historical, philosophical, and literary scholarship can and should inform important questions of purpose and direction in education. What belies the committee’s claim is that these “other approaches” are indeed *other*, that is, *not* scientific. We think

56. *Ibid.*, 19.

57. *Ibid.*, 2.

58. *Ibid.*, 6.

59. Charles S. Peirce, “The Fixation of Belief,” *Popular Science Monthly* 12 (November 1877): 1–15. Available at <http://www.peirce.org/writings/p107.html> (Retrieved February 7, 2005).

60. SRE, 26. Emphasis added.

the committee can distinguish science from "nonscience" only because it must rely upon particular methods. Its principles, if understood broadly, would support a broad understanding of science, but its claims that there are "other" important approaches sheds doubt on the committee's claim that it is the principles, not the methods, that dictates what science can be. In addition, the assumption that methods should be determined by the questions implies that methods and theories are simply technical matters, but such things do not arise from nowhere; they are formed within intellectual traditions in which those theories work. That is, techniques become determinate of science.⁶¹

One of the significant critiques of *SRE* in the literature relates to the committee's understanding that "it is possible to describe the physical and social world scientifically so that, for example, multiple observers can agree on what they see."⁶² The committee does acknowledge that because education is "highly value laden" and involves a "diverse array of people and political forces that significantly shapes its character," scientific inquiry must pay attention to physical, social, cultural, economic, and historical contexts, so that its "theories and findings may generalize to other times, places, and populations."⁶³ The committee nonetheless rejects "postmodernism," which, it argues, claims that "science can never generate objective or trustworthy knowledge."⁶⁴ Yet this is the kind of universalism that the so-called postmodern critiques of the report problematize. Postmodern schools of thought, as Elizabeth Adams St. Pierre points out, do not assert that there is no reality, objectivity, or rationality, but rather that such concepts are situated rather than universal because they are understood differently within different epistemologies.⁶⁵ St. Pierre thus rejects *SRE*'s claim that quantitative and qualitative research are "epistemologically quite similar."⁶⁶

The committee also purports to reject "narrow tenets of behaviorism/positivism" as viewing human nature too simplistically.⁶⁷ Despite this claim, as we elaborate in great detail in chapter 2, the committee does not reject "narrow tenets of behaviorism/positivism." Only by adhering to "narrow tenets of behaviorism/positivism" can the committee make the claim that

[a]s in other fields that have such a public character, social ideals inevitably influence the research that is done, the way it is framed

61. Popkewitz, "On Trusting the Manifesto," 66–68.

62. *Ibid.*

63. *Ibid.*, 5.

64. *Ibid.*, 25.

65. Elizabeth Adams St. Pierre, "'Science' Rejects Postmodernism," *Educational Researcher* 31, no. 8 (2002): 25–27, 25.

66. *SRE*, 19.

67. *Ibid.*, 25.

and conducted, and the policies and practices that are based on research findings. And decisions about education are sometimes instituted with no scientific basis at all, but rather are derived directly from ideology or deeply held beliefs about social justice or the good of society in general.⁶⁸

What postmodern, critical, and other interpretive analyses often try to do is to expose the discursive, ideological, and historical nature of claims to knowledge, which “narrow tenets of behaviorism/positivism” fail to recognize. Furthermore, as Thomas Popkewitz explains, the argument that science can be defined by principles rather than methods, and that quantitative and qualitative research are epistemologically similar, suggest an idea of a unified science across the natural, social, and educational arenas. That *SRE* seeks to distinguish science from nonscience is reminiscent of the Logical Positivists, who sought to eliminate metaphysical arguments in favor of a position that all knowledge fits into a single conceptual framework that explains science. This unity searches for consensus and certainty, which in turn are produced through the norms of professional communities.⁶⁹ (We will discuss the report’s role in the professionalization of education researchers in the next section.) Indeed, the committee’s claim that it is possible to describe education “scientifically” is itself possible only because of its adherence to behaviorism and positivism, since much of what we call “education” today is deeply rooted in behaviorist and positivist assumptions.⁷⁰

There has been quite a bit of concern over *SRE*, and a number of important journals have dedicated special issues to it.⁷¹ One of the reasons for this attention to *SRE* is, as we stated, that it is part of an attempt to define education research in particular ways, which not only will dictate what research will be funded but also will normalize and homogenize the field. Another related reason for the attention given to this report is that it reflects a long-standing anxiety over knowledge, its production, and who

68. *Ibid.*, 17.

69. Popkewitz, “On Trusting the Manifesto,” 64.

70. Margaret Eisenhart argued that *SRE* defends a conception of science in the sense of postpositivism, not positivism, and this is important because the former accommodates both patterned behavior and human intentionality. See Margaret Eisenhart, “Science Plus: A Response to the Responses to Scientific Research in Education,” *Teachers College Record* 107, no. 1 (2005): 52–58. We will have occasion to return to this logic a few more times in this book. Before then, and to be clear, we are not arguing that science can only be understood positivistically. We are arguing that science has been narrowly focused on positivist assumptions when applied to education.

71. *SRE* has been the focus of entire issues of *Educational Researcher* 31, no. 8 (2002); *Qualitative Inquiry* 10, no. 1 (2004); *Educational Theory* 55, no. 3 (2005); and *Teachers College Record* 107, no. 1 (2005). See, also, Gert Biesta, “Why ‘What Works’ Won’t Work: Evidence-Based Practice and the Democratic Deficit in Educational Research,” *Educational Theory* 57, no. 1 (2007): 1–22.

is authorized to speak it. Three members of the committee, Michael Feuer, Lisa Towne, and Richard Shavelson (who chaired the committee), almost said as much, explaining that nurturing and reinforcing a "scientific culture of educational research is a critical task for promoting better research," and that such culture is a "set of norms and practices and an ethos of honesty, openness, and continuous reflection."⁷² It has been the "failure of the [education research] field to develop such a community and to forge consensus on such matters as research quality and coordination of perspectives that has contributed to an environment in which members of Congress are compelled to impose them."⁷³ Such arguments reflect a concern with professionalism, and are not simply iterations of philosophies of science, a point we discuss in the following section. Rather than condemn the ignorance and arrogance of such legislators, many education researchers instead have tried to accommodate them. We critique throughout this book the imposition of such a "culture" and how it is to be established,⁷⁴ but suffice it to say here that developing such a culture will dictate what counts as knowledge, how it is to be produced, and who is authorized to speak it. The privileged "knowers" will no longer be "mere" educators but the newly professionalized education scientists.

In addition to those we have already mentioned, there have been various other critiques of *SRE*. We do not wish to reiterate many of these critiques here, as we discuss many of these critiques in the next chapter,⁷⁵ but we do want to highlight a few of them in order to set up the arguments we make in this book. We start by noting that there has been a tendency in these critiques to bend over backward not to appear to be dismissing experimental designs.⁷⁶ We take a controversial view and argue *against* experimental designs in schools. With St. Pierre we ask:

Why and to what end has the circle been drawn so narrowly around science? What "outcomes" are possible in such a structure? Who

72. Michael J. Feuer, Lisa Towne, and Richard J. Shavelson, "Scientific Culture and Educational Research," *Educational Researcher* 31, no. 8 (2002): 4–14, 4.

73. *Ibid.*, 9.

74. The NRC established another committee to issue another report on how to promote scientific research in education. This report offered recommendations for promoting scientific quality in education, building an educational scientific knowledge base, and enhancing the professional development of education researchers. See National Research Council, *Advancing Scientific Research in Education*, ed. Lisa Towne, Laress L. Wise, and Tina M. Waters (Washington, DC: The National Academies Press, 2005). Available at <http://www.nap.edu/> (Retrieved February 5, 2005). We discuss this report in greater detail in chapter 3.

75. For critiques of the NRC report, see the entire issues of *Educational Researcher* 31, no. 8 (2002); *Qualitative Inquiry* 10, no. 1 (2004); *Educational Theory* 55, no. 3 (2005); and *Teachers College Record* 107, no. 1 (2005).

76. See, for example, Joseph A. Maxwell, "Reemergent Scientism, Postmodernism, and Dialogue Across Differences," *Qualitative Inquiry* 10, no. 1 (2004): 35–41, 36; Weinstein, "Randomized Design and the Myth of Certain Knowledge," 257.

benefits? What happens to children in classrooms when we assume that the random assignment of subjects will produce true knowledge, that outcomes can be controlled and predicted, and that the reality of one classroom can be generalized to another?⁷⁷

Yes, indeed, what happens to children when they become *useful* for experiments? Not only do such experimental designs reflect a scientism and positivism that limits inquiry and thought, the consequences of “experimenting” on children in the ways federal initiatives, *SRE*, and other similar reports advocate reflect a high degree of disregard for them, and impose on them an institutionalized violence that even institutional review boards cannot prevent. In fact, institutional review boards will be more than complicit here since they will grant *imprimatur* to such violence in approving these experiments. These experiments do not seem to regard children as human beings but rather as products or data—merely material “human resources” to be mined or laboratory animals on which to “experiment.”

We should consider experimental designs hazardous to children rather than reifying the designs as laudable hallmarks of education research. To be sure, *SRE* rejects such narrow scientism, especially when linked to a “what works” logic. Not all scientific research will pan out, it argues, as, “Research is like oil exploration—there are, on average, many dry holes for every successful well.”⁷⁸ This is an interesting, if odd, analogy. It implies that a particular line of research should not be deemed a failure through the short-term, “what works” kind of thinking that supports federal projects such as the What Works Clearinghouse. But there is something problematic in the analogy. As though drilling for oil is a worthy enterprise itself, the analogy seems to suggest that research projects are to be treated like “oil wells.” Some may “strike it rich,” but many, many others will yield nothing. Missing are questions about the impact such projects have. Will they mirror the devastating impact of actual drilling on the environment? Would this devastation even matter if we find through such constant searching for “knowledge” the solutions to the problems we have already determined they have? This is part of the problem of privileging research over people. The NRC committee positions the research enterprise *over* the individuals it affects, giving considerable power to the scientists *over* the individuals they purport to be studying and helping. As Karl Hostetler argues, the debates about education research

have raised ethical questions about how researchers should understand and work with the human beings they study. The danger is

77. Elizabeth Adams St. Pierre, “Refusing Alternatives: A Science of Contestation,” *Qualitative Inquiry* 10, no. 1 (2004): 130–39, 134.

78. *SRE*, 25.