

Scientific research in education: a critical perspective¹

Patti Lather^{*}

Ohio State University, USA

(Received 7 April 2004; accepted 17 June 2004)

This article reviews the debate in the USA about quality in educational research which has underpinned particular approaches to educational research being mandated in federal legislation. It argues that the movement towards 'evidence-based policy and practice' oversimplifies complex problems and is being used to warrant governmental incursion into legislating scientific method. It calls for critical readings of current policy and direct engagement in policy forums—putting critical theory to work.

Education research is broken in our country ... and Congress must work to make it more useful ... Research needs to be conducted on a more scientific basis. Educators and policy makers need objective, reliable research. (Michael Castle, US Representative, quoted in National Research Council report, 2002, p. 28)

This is not a fair fight, it is not what it seems on the surface, and the stakes are high. (Paul Shaker, 2002, p. 11)

The No Child Left Behind Act was passed in the USA in 2001 (The White House 2001; Public Law 107–110) and its effects are starting to be felt in American schools. Recently newspapers reported the results of a survey that found that 9 of 10 US school superintendents denounced this legislation as unfair. Suits are being filed, federal funds rejected, and a 'small but growing number of school systems across the country [are] beginning to resist the demands' of the legislation as intrusive, costly, cumbersome and unfair (Dillon, 2004, p. A5; Feller, 2004). Whether or not this potential backlash is wishful thinking on the part of those worried about testing and accountability mania and one-size-fits-all formulas, whether or not resistance will dissipate if federal dollars are forthcoming, and whether or not this is, in Secretary of Education, Rod Paige's words, 'growing pains,' in a program that will take years to have full effect: time will tell.

No matter what the outcome, we are witnessing an unprecedented federal take-over of public education. What is less obvious in public reports of this is that the 'evidence-based' or 'accountability' movement includes governmental incursion into legislating scientific method in the realm of educational research. Hence, my focus in what follows is on what might be called the politics of the science of the US

^{*}Ohio State University, 101B Ramseyer Hall, 29 W. Woodruff Avenue, Columbus, OH 43210-1177, USA. Email: lather.1@osu.edu

accountability movement in public education. The lens through which I view these developments is the tradition of critical theory that assumes the play of power in society as opposed to claims to objective knowledge via a so-called scientific approach. As a feminist qualitative researcher, I am particularly interested in how the federal effort to legislate scientific method might be read as a backlash against the proliferation of research approaches of the last 20 years out of cultural studies, feminist methodology, radical environmentalists, ethnic studies and social studies of science.

Background

Could quantification settle important issues of public policy? Experience was often disappointing, but hope sprang eternal. (Porter, 1995, p. 152)

Beginning with the Reading Excellence Act of 1999, federal policy research in education has increasingly moved to randomized field trials (RFTs) as the 'gold standard' in the evidence-based movements that have taken such hold at the federal level (Tierney, 2001; Cochran-Smith, 2002). Researchers in education increasingly are speaking out against this situation, particularly although not exclusively qualitative researchers. Eisenhart and Towne (2003) engage some of this work and call for more such contestation and scrutiny of federal efforts to narrowly define scientific research in education.

That politics conditions research agendas is not new news. Additionally, while it is an attractive picture to think of basing practice on the most up-to-date, valid and reliable research findings, it is also well recognized that practitioners rarely alter their practice on the basis of research findings (Birnbaum, 2000; Trinder, 2000, p. 3). My point is that in this call for evidence-based practice, such practical issues are being disregarded.² Also disregarded is the long-running critique of experimental research in classroom contexts. Such critique asks how social science might serve us better than the parade of behaviorism, cognitivism, structuralism and neopositivism that have all failed successfully to study human activity in a way modeled after the assumedly cumulative, predictive and stable natural sciences. What is most pressing in my position, however, is that the old argument against a unified idea of science (Galison & Stump, 1996) is being disavowed via nakedly political and self-aggrandizing moves. One example is the web scrubbing at the federal level in which research has been deleted that is unsupportive of Bush administrative agendas.³

Let me be perfectly clear: I am not against the scientific study of education. My issue is how the narrowly defined sense of science-based evidence in this effort at the federal level works to discipline educational research. Whether or not the 15-year timeline of the Strategic Education Research Program of the National Research Council will change the face of educational research, these actions seem about much more than the latest trend in DC (Willinsky, 2001). Calls for policy research that supports the present administration's initiatives must be challenged for what they are: bad science for bad politics.⁴ In the experience of the UK, Elizabeth Atkinson (2004), for example, asks who loses when 'a nation of researchers is backed into a

governmental policy agenda' (p. 8). How can we take to heart Atkinson's call for 'thinking outside the box' in a time when educational research is being told what science is by federal bureaucrats and Congress?⁵

From my critical theory perspective, this situation is the latest wave of the conservative attack on education. Furthermore, this kind of 'activist interventionism and expansion of the scope of government' (Shaker, 2002) gives the lie to the rhetoric of decreased federalism in the conservative restoration. Reading research was the first to experience this 'unprecedented' level of governmental intrusion (Tierney, 2001, p. 260). Now targeted as the next objects of 'high scientific standards' are math education, science education, professional development, and comprehensive school reform.⁶ With random field trials (RFT's) specified by Congress ever more frequently in effectiveness studies of federally funded programs, the design and application of educational research has become a partisan tool, much like standardized tests have functioned for almost two decades.⁷

In what follows, I raise three questions:

1. Is this science for policy or policy for science?
2. How does the USA compare with other nations in terms of these accountability movements on the part of neo-liberal governments invested in 'new managerialism'?⁸
3. How might we put critical theory to work in such a situation?

Legislating method: science for policy or policy for science?

Since the Reagan years, the growing perception amongst government leaders has been of more money chasing after bad research and evaluation, particularly in the educational arena.⁹ Federal agencies increasingly have been under the gun of a Republican Congress that wants to win elections on school-reform platforms while, at the same time, spending the fewest dollars. The watchwords of 'scientifically sound' and 'politically objective' have captured the widespread 'discontent with the state of current knowledge of what works in education' (Cook & Payne, 2002, p. 150).

That such concerns about the quality of educational research are not new is evident in Lagemann's book on the 'troubling history' of education research (2000). What *is* new are efforts at the federal level to legislate proper scientific method. Eisenhart and Towne (2003), for example, refer to a 'national policy on 'scientifically based' education research in their recent article that tracks the various definitions of science that have circulated across the last five or so years of education legislation. Member and study director, respectively, of the National Research Council (NRC) committee that produced *Scientific Research in Education* (NRC, 2002), they attempt to 'set the record straight' on how we have come to this place and how they see the NRC report in 'providing leverage' for contesting narrow definitions.

The NRC report, *Scientific Research in Education*, attempts to negotiate the differences between the Federal Government and the educational research com-

munity. In my reading, despite the effort toward a 'big tent' of legitimate methods in educational research (Feuer *et al.*, 2002), the report's call for generalizability, objectivity, replicability and a unified theory of science ignores the last 40 years of contestation regarding the definition of science, particularly in the social sciences. Attempting to walk a fine line between a 'narrow behaviorism/positivism' and its concerns regarding the 'anything goes' of 'extreme' postmodernism (NRC, 2002, pp. 24–25), the report is, ultimately, what Foucault terms 'a kind of tribunal of reason' (1991, p. 60). In spite of its oft-repeated intentions of balance across multiple methods, objectivity is enshrined and prediction, explanation, and verification override description, interpretation, and discovery.¹⁰ Values and politics, human volition and program variability, cultural diversity, multiple disciplinary perspectives, the import of partnerships with practitioners, even the ethical considerations of random designs: all are swept away in a unified theory of scientific advancement with its mantra of 'science is science is science' across the physical, life and social sciences. Although one expects to sort through several voices in a committee prepared document, in the end, its efforts to provide guidelines for rigor and enhance a 'vibrant federal presence' (NRC, 2002, p. 129) are complicit with the Federal Government's move to evidence-based knowledge as much more about policy for science than science for policy.

One can rant and rave about the intellectual merits of all of this, but increasingly persuasive to me is that pushing this 'science is science is science' agenda works quite well as what Foucault would term a 'political technology' in the neo-liberal tool kit. Bronwyn Davies offers part of the explanation in her discussion of these issues on the Australian scene by characterizing the way that the language of managerialism 'cleverly cannibalizes' liberal humanist terms in making what appear to be self-evidently sensible statements (2003, p. 98). How, for example, can one be against continuous improvement or universal literacy or, in our case, a clear relationship amongst policy, research, and practice? How close to the heart of the matter is Davies's title in terms of neo-liberal governmental agendas: 'Death to critique and dissent?' Perhaps this seemingly 'embarrassingly naïve' trust in the objectivity of experimental research is more about what Davies terms 'a hidden, managerialist agenda that has little to do with research findings and their implications for practice' (p. 100).

Cross-national comparisons

In the larger frames of the Science Wars (Ross, 1996; Plotnitsky, 2002) and culture wars, the idea of a unified science functions quite well as a neo-liberal weapon of crisis management. The functionality of a unified idea of science can be observed at work in other parts of the world. First, health care in Britain and then various programs throughout New Zealand and Australia have been going through this extremely interventionist regulatory climate policed by statutory bodies for quite some time now. In her introduction to an edited book which focuses largely on health care policy, Liz Trinder appraises strengths and weaknesses across both 'champions and critics' of evidence based practice in Britain (Trinder, 2000, p. 3).

She theorizes its appeal and, hence, its rapid influence as rooted in the needs of post-traditional societies for ways of managing risk in the face of a paradoxical dependence on and suspicion of experts and expert knowledge. Combined with the push to value-for-money, the rise of managerialism, consumerism, and political discourses of accountability and performance, neo-liberal ideologies of the neutrality via proceduralism of such practices prevail in an 'explosion of auditable management control systems' (p. 9). Here, at last, is a way to manage quality issues by displacing professional judgment with promised effectiveness via the procedural production of evidence. Although 'a product of its time' (p. 5), the problem is that little evidence is available that evidence-based practice actually works (p. 2).

Hammersley's chapter in the same book notes that, in medicine, the focus has been on quality of practice, whereas in education, the focus has been on the quality of research (2000, p. 163). He also notes the focus on teaching as opposed to administration and management and how, despite the claims of evidence-based practice of being a 'radically new venture' (p. 164), research-based teaching has a long history, including a long critique. The shift to qualitative methods in the 1970s was related to the difficulties of measuring what is educationally significant and the limits of causal models, given the preponderance of interaction effects. As a result, according to Hammersley, educational research became 'embroiled in philosophical and methodological disputes' (p. 167) that cannot be simply overcome. Replicability, for example, is no satisfactory answer given the 'complex web of relationships' (p. 168) manifest in naturalistic as opposed to laboratory settings. The degree to which the kinds of problems that teachers face are open to solution by research is precisely the question. The importance of contextual judgment mandates a great caution in adapting the medical model. Formulas for transparent accountability are more about politics than about quality of service.¹¹

Shore and Wright's anthropology of policy work adds a compelling layer to our understanding of these movements across time and national borders (1997, 1999, 2000, 2001).¹² Their stories (2004) on new managerialism out of control in Australia are particularly troublesome. They provide a body of work that argues that this interventionist regulatory climate is less about scientific rigor and quality and more about delivering support to government policies and strengthening management control. In short, it is a new form of coercive and authoritarian governmentality.

Putting critical theory to work

In his discussion of how conservative modernization has radically reshaped the common sense of society regarding education, Michel Apple asks, '*If the right can do this, why can't we?*' (2001, p. 194, original emphasis) In the remainder of my remarks, I suggest that such a Left effort to shift educational policy entails at least three aspects.

The *first* is a sustained critique of the nakedly self-aggrandizing aspects of this scientific approach to policy-driven research. Science, money, and politics appear to have combined with pre-positioned capability and sweetheart contracts on the

part of self-described ‘ambitious researchers’ (Burtless, 2002, p. 193) to court the increased federal role in the adoption of ‘one-best way’ in scientific methods for educational research.

A handful of advocates are well positioned to push for this increased federal presence in public education. Their views are represented in a book that grew out of a 1999 conference, named, ironically, for Donald Campbell, who championed the case study in later life (Hamilton, 2002). This book, *Evidence matters: randomized trials in education research* (2002), is co-edited by Frederick Mosteller, Professor Emeritus of mathematics at Harvard and early 1970s architect of randomized clinical trials as the gold standard in medical research, and Robert Boruch of the Campbell Collaborative. In their introduction, the co-editors laud the Government’s serious interest in the quality of education research. Permeating the text are terms such as ‘standards of evidence’ and ‘scientific rigor,’ with a nod toward ‘other kinds of research’ as ‘augmentation’ to controlled studies, provided ‘scientific standards’ can be delineated. Driven by ‘worry about ideology parading as intellectual inquiry’ (Boruch & Mosteller, 2002, p. 2), they understand their task as one of persuading sponsoring agencies ‘that there is no easier way to get the answers to the right question’ (p. 3) than randomized field trials (RFTs). Shocked by the paucity of ‘good studies’ (p. 4), they call for political and administrative support for ‘rigorous research’ to remedy the bad reputation of educational research. Although claiming ‘refreshed ways of thinking’ (p. 4), most of the essays are a response to their own critics over the last 20 years.

Of particular interest is how conservative think tanks have ratcheted up their focus on education issues since the late 1980s and how entrepreneurial interests are at work.¹³ In *Science, Money and Politics* (2001), Daniel Greenberg probes the ‘politics of the academic pork barrel’ (p. 184) and its creation of ‘scientific welfare’ (p. 39) within the Enterprise University (p. 356) with its grant economy. As argued by Baez and Boyles (2002) in their lovely analysis of the discourse of grants, ‘academic capitalism’ has become our way of life. The deal has already been struck. The question is the extent to which we can promote critical work within such a milieu, ‘work which challenges the categories that organize [our] existence’ (p. 45) given the ‘Faustian bargain’ of the federal and corporate embrace.

Secondly, we need more of the sort of rhetorically strategic intervention that John Willinsky (2001) has modeled in his call to broaden and deepen major federal policy statements regarding the translation of educational research into practice. Rather ingeniously, Willinsky attaches a critical agenda to one that is decidedly instrumentalist and even shocking in its lack of attention to the last 20 years of ‘utilization’ research on why “‘top-down linear” R&D models of the 1950’s and 1960’s’ did not work (p. 7). Arguing for democratic forms of collaboration and exchange rather than ‘heavy-handed intentions of driving educational practice,’ Willinsky foregrounds the ‘productive tensions and radical challenges that mark this play of interpretations within social science research’ (p. 7).

A second example is Rob Tierney’s (2001) staging of a ‘courtroom drama’ in which a literacy professor with qualitative tendencies is put on trial for failing to uphold state and federal mandates. The unconventional format allows Tierney to

present the chronology of legislation around literacy policy and practice in a lively manner, stage the human costs involved in heavy handed institutional forces, and address the ‘Pyrrhic victory’ (p. 264) of eclectic and diverse research methods that had seemed, for a short time, to be accepted in the field. Whereas the ‘paradigm wars’ created some critical space for a decade or so, the traditionalists, arguing their own displacement by such developments, were able to re-establish dominance as part of the conservative restoration: ‘the norms of those in power mattered when it counted’ (p. 275).

I tried this sort of strategic rhetorical move myself in a speech in which I put into play three discourse practices quite scandalous to that of the NRC report in order to explore what it might mean to interrupt a discourse that one finds so profoundly troubling.¹⁴ Calling upon Foucauldian policy analysis and feminist and post-colonial cultural analysis, I tried to evoke the science that might be possible after the critique of science. Offering a counter voice to dominant narratives, here is but a small flavor of the larger effort.

From the *Foucauldian reading*¹⁵

In Foucauldian terms, policy is one of the three technologies of governmentality, the others being diplomatic/military and economic. Policy is to regulate behavior and render populations productive via a ‘biopolitics’ that entails state intervention in and regulation of the everyday lives of citizens in a ‘liberal’ enough manner to minimize resistance and maximize wealth stimulation. Naming, classifying and analyzing: all work toward disciplining through normalizing. Such governmentality is ‘as much about what we do to ourselves as what is done to us’ (Danaher *et al.*, 2000, p. 83). It is, contrary to those who see Foucault as a pessimist and determinist, about how understanding such processes might raise possibilities for doing otherwise.

In terms of the recent governing mentality of educational research, the ‘privilege accorded to ... “the sciences of man” ’ is based on the “political arithmetic” ’ (Foucault, 1998, p. 323) that makes particular kinds of discourse both possible and necessary. Such a way of making sense of how power/knowledge works is not so much about concepts on their way to formation or even the price paid for scientific pretensions, but rather of understanding claims to scientificity as discursive and political events. Here the ‘inexact knowledges’ become ‘*a field of strategic possibilities*’ (1998, p. 320, original emphasis), a ‘counter-science’ of policy analysis that troubles what we take for granted as the good in fostering understanding, reflection and action.

From the *feminist reading*

This militantly empiricist and quantitative movement, this desire for hardness with its claims to produce findings that are verifiable, definitive and cumulative, is set against a softness where interpretation is central and findings are always subject to debate and reinterpretation (Gherardi & Turner, 2002).

French feminist theory is premised on the idea that the classic structure is splitting

and opening to becoming and that this becoming will be initiated primarily by women as men have more to lose. Irigaray's (1985) argument is based on psychoanalytic theory. Her concern is that we have so naturalized masculinized language and logic that we do not see the practical aspects of such domination. Regimes of power and systems of philosophy are designed to 'penetrate,' interventions are engineered, 'we encourage one another to be "hard" on issues' (Olkowski, 2000, p. 92). In contrast is the sort of 'embarrassing emotion-fest' of women's work (p. 93) which can only be interpreted as 'excess ... wild or crazy, bizarre, remote, or meaningless' to the task of social policy (p. 93). Intelligibility demands that language conform to hegemonic and rigid hierarchies, systems of formulation, standards of truth within a logic of solid mechanics. What Irigaray calls 'fluid economies ... make us shudder' (p. 96) within the 'order of good sense' (p. 99).

Charges of essentialism are, of course, rife here. Arguing what Deleuze calls 'becoming-woman' as having a 'special introductory power,' key to all other becoming (Olkowski, 2000, p. 103), is a dangerous rhetorical strategy. Emphasizing that women's insight into multiplicity and difference comes from the 'assemblages that produce minoritarian groups ... those outside the rules' (p. 106) rather than from biology, such a move depathologizes that which is associated with women. Such a deconstructive 'necessary reversal' denaturalizes phallogentric masculinism in an effort to transform the social contract and give purchase to seeing science as a site of contestation, an always already gendered practice.

From the *postcolonial reading*

As a sort of 'regressive modernism,' these disciplining and normalizing efforts to standardize educational research in the name of quality and effectiveness are an attempt to hegemonize and appropriate to a reactionary political agenda deeper tendencies in cultural shifts. These efforts might be termed a 'new cultural politics of difference' (Hall, 1996, p. 464) and include the displacement of European high culture, the Americanization of world culture, and the decolonization of the Third World, including the decolonization of First World minorities. Such a politics is marked by unevenness, contradictory outcomes, disjunctures, delays, contingencies, and uncompleted projects.

The decentering of old hierarchies and grand narratives of the last 40 or so years has created new subjects on the political and cultural stage. The danger of reducing the spaces for doing other sorts of research on the part of a cultural dominant is that one sets up one's efforts to be read as an 'aggressive resistance to difference' (Hall, 1996, p. 468). This backlash attempt to transfer a medical model to educational research might be read as an 'assault, direct and indirect, on multiculturalism' (p. 468).

Overtaken by the carnevalesque, a sort of 'low science' has emerged out of the proliferation of difference that challenges the fundamental basis of the mechanisms of ordering and of sense-making of European culture. A rich production of counter-narratives is alive and kicking, from subaltern studies to indigenous research

methodologies, from native as anthropologist to Al Jazeera, the Arabic TV channel. This profusion of sites from which the world is spoken is the end of the innocent notion of knowledge production as value-neutral. Efforts by the 'top' to reject and eliminate the 'bottom' for reasons of prestige and status bite back from a place where white masculinities are no longer at the center of the frame.

Thirdly, I suggest a strategic infusion of those oriented toward critical theory and its concerns with the workings of power/knowledge into the ranks of program evaluation and policy analysis. For example, those concerned with the issues of this essay should join and participate in professional associations and policy-making committees. A similar infusion of critical theorists into policy publications and conferences could foster thinking and conversations rather than advice about conforming to government mandates.

At root is what to do about federal needs for evaluation data on educational initiatives in a time of belt-tightening economies. In the good old days of the 1960s, the federal trough was rich with program evaluation monies as the research budget soared from 3 million in 1960 to 100 million in 1967 (Vinovskis, 2002, p. 123). Foregrounding an expansive federal role in financial, political and regulatory environments, those who advocate a 'vibrant federal presence' (NRC, 2002, p. 29) long for something like the Federal Drug Administration to 'require good evidence' regarding which educational interventions are safe or effective. Now is high time for 'rigorous evaluation' on the part of 'randomizers' to assume important positions at the federal level. 'Generating better evidence for better education' (Boruch & Mosteller, 2002, p. 14) is the watchword of such efforts.

Those of us invested in a methodologically diverse approach to program evaluation and policy analysis need to be part of the preparation of alternative practitioners. Suggestive here is *Making social science matter* (2001) by Bent Flyvbjerg, a Danish urban developer, who argues for a move from a narrowly defined epistemic science to one that articulates a social science that integrates context-dependency with practical deliberation. Here considerations of power are brought to bear in delineating a knowledge adequate to our time. Rather than the self-defeating 'physics envy'¹⁶ that underlies the objectivist strands of the social sciences, this is a social science that can contribute to society's practical rationality in clarifying where we are and where we want to be. Case studies assume prime importance as critical cases, strategically chosen, provide 'far better access for policy intervention than the present social science of variables' (2001, p. 86). 'Simultaneously sociological, political and philosophical' (Flyvbjerg, 2001, p. 64), this is a kind of science that does not divest experience of its rich ambiguity because it stays close to the complexities and contradictions of existence. Its goal is to foster understanding, reflection and action instead of a narrow translation of research into practice.

Let me nail this point: I am arguing for a critical qualitative presence in the preparation of program evaluators and policy analysts in order that these areas can become useful in fuzzifying the lines between both research and evaluation and also the lines between empirical research, politics, and the philosophical renewal of public deliberation.

Conclusion

Efforts at reform and change must, and will, continue. Applied social scientists ... will ... be faced with the fundamental problem that the very practices they wish to alter will tend to frustrate their efforts ... Confronting this 'problem' ... is the essential first step towards a better form of practice ... one that consists of a willingness to work with, rather than against, the actors in the domain of application; one that is collaborative rather than imperious; modest rather than megalomaniac; and wishing to learn rather than itching to instruct. (Ashmore *et al.*, 1989, p. 195)

Ashmore *et al.* are writing of long-running efforts in Britain to use economics to rationalize health care. Like efforts to shift the meanings of scientifically based research in education, many issues are at play in their work, including the Science Wars and the management needs of neo-liberal states. Also at play are academic capitalism, entrepreneurship and ambition. In short, something complicated is happening here and high stakes are involved.

In improving the quality of practice, complexity and the messiness of practice-in-context cannot be fantasized away. To try to do so yields impoverishment rather than improvement. That loss is being borne by the children, teachers, and administrators in our schools.

My hope in this article is that the efforts of educational researchers to speak out against the federal legislating of scientific method will contribute to a 'next move' that will be much more about government as handmaiden than government as unilateral force in pushing things in a useful direction. To do so requires a form of applied social science that can cope with the multiplicity of the social world, not a reified medical model by no means central in medicine itself (Howe, 2004). What is at question is the adequacy of standard methods, the desirability of research and policy goals, and the philosophies of science that prescribe narrow views of these issues.

Foucault writes of the 'absolute optimism' of 'a thousand things to do' (1991, p. 174) in our constant struggle against the very rules of reason and practice inscribed in the effects of power of the social sciences. For those attentive to the demands of different contexts and different communities, this is our moment to act in the struggle for an applied social science that can engage strategically with the limits and the possibilities of the uses of research for social policy toward the improvement of practice.

Notes

1. Joint publication with *Journal of Curriculum and Supervision* (journal of the Association for Supervision and Curriculum Development, USA) and *British Educational Research Journal*. An early version of this paper was presented at The Science and Politics of Accountability in Public Education Conference to welcome Paul Shaker as Dean of the Faculty of Education, Simon Fraser University, November 8–9, 2003.
2. For example, how feasible are RFTs in an environment where, in the Columbus Public Schools, in 1999, 45% of students, 53% of teachers and 75% of principals move schools each year? (*Columbus Dispatch*, February 6, 2003, p. C1).
3. See Clymer, 2002. For ERIC update: <http://www.lib.msu.edu/corby/ebss/accesseric.htm>

4. Davies, writing from Australia, which is further down the road of accountability culture, points out that it is typical of new managerialism that 'the objectives will come first and that the "experimental research evidence" will be generated to justify them' (2003, p. 100).
5. Ironically, this is happening at a time when an expansive definition of science is being urged in the more high-status areas, particularly medicine, which is so often held up as a model for educational research (e.g. Goenka, 2002; Katz & Mishler, 2003).
6. Just who is at work here is unpacked in Eisenhart and Towne (2003), where they delineate how Robert Sweet, professional staff member for the majority members of the House Education and Workforce Committee, operated to define 'the best scientific evidence' (p. 32). The heavy hand of 'cognitive psychologists' is especially noteworthy, a group of researchers notorious for their adherence to narrow positivist ideas of good science. This definition, inserted into the Reading Excellence Act of 1999, has carried over into other federal policy initiatives in educational research.
7. The Department of Education's 2002–2007 strategic plan expects 75% of federally funded research addressing causal claims to be derived from randomized sample studies by 2004 (Eisenhart & Towne, 2003, p. 34).
8. Neo-liberalism is the post-World War II shift in the role of western governments away from laissez-faire economics and toward a state-initiated broadening of economic thinking that diffuses the enterprise-form throughout society as its general organizing principle. Choice, commodity-form, the managerialism of identity and personal and professional relations, all result in 'the capitalization of the meaning of life' (Gordon, 1991, p. 44).
9. See 'Education at a Crossroads.'
10. This is made particularly clear in a later issue of *Educational Researcher* where several committee members address the scientificity of design studies (Shavelson *et al.*, 2003). Eisenhart and Towne (2003) make a good effort to clarify *Scientific Research in Education's* intentions of a post-positivist approach to the issues and the continued contention involved, but they continue to not trouble 'replication' as a central criterion of reputable science. Replication, of course, flies in the face of the emphasis in qualitative research on context, situated knowledge and the researcher as instrument. But one example from a rich literature: 'If I slightly altered the lenses of my ethnographic microscope or shifted my view sideways a bit, I would tell different stories' (Mol, 2002, p. 50).
11. See also Thomas & Pring (2004) for further discussion of evidence-based policy and practice in the UK.
12. For a feminist take on the issues, see Morley (2003).
13. These include efforts such as that of Robert Slavin of Johns Hopkins University, co-developer of the Success for All improvement program used in over 1800 elementary schools, and Robert Boruch of the University of Pennsylvania based Campbell Collaboration, designed to do for the social sciences what the British-based Cochrane Collaboration does for health care. Formed in 1998 as a non-profit organization, the international Campbell Collaboration, along with the American Institutes for Research, a Washington DC think tank, was awarded a five-year \$18.5 million contract in 2002 to develop the What Works Clearinghouse (w-w-c.org) to summarize effectiveness data from RFTs of social and educational policies and practices for policy makers and practitioners. See www.campbellcollaboration.org. See Laitsch *et al.* (2002) for a discussion of the role of think tanks in consolidating conservative modernization. One notable exception to the conservative bent of such centers is the Education Policy Studies Laboratory at Arizona State University, where Alex Molnar and David Berliner, among others, are doing research on the issues around high-stakes testing (Viadero, 2002).
14. The Guba Lecture, presented at the annual convention of the American Educational Research Association, Chicago, April 2003. Now published as Lather, 2004a.
15. Excerpted from Lather, 2004b.
16. This phrase, credited to Freud, was used in the *New York Review of Books* (Flyvbjerg, 2001, pp. 26–27). It is used, interestingly, in the NRC report (Shavelson & Towne, 2002, p. 13), without attribution.

References

- Apple, M. (2001) *Educating the 'right' way: markets, standards, God, and inequality* (New York, Routledge).
- Ashmore, M., Mulkay, M. & Pinch, T. (1989) *Health and efficiency: a sociology of health economics* (Milton Keynes, Open University Press).
- Atkinson, E. (2004) Thinking outside the box: an exercise in heresy, *Qualitative Inquiry*, 10(1), 111–129.
- Baez, B. & Boyles, D. R. (2002) Are we selling out? Grants, entrepreneurship, and the future of the profession, paper presented at the *Annual Meeting of the American Educational Studies Association*, October.
- Birnbaum, R. (2000) Policy scholars are from Venus; policy makers are from Mars, *The Review of Higher Education*, 23(2), 119–132.
- Boruch, R. & Mosteller, F. (2002) Overview and new directions, in: F. Mosteller & R. Boruch (Eds) *Evidence matters: randomized trials in education research* (Washington, DC, The Brookings Institute), 1–14.
- Burtless, G. (2002) Randomized field trials for policy evaluation: why not in education? in: F. Mosteller & R. Boruch (Eds) *Evidence matters: randomized trials in education research* (Washington, DC, The Brookings Institute), 179–197.
- Clymer, A. (2002) Changes in health web sites draw flak, *Columbus Dispatch*, December 27, A3.
- Cochran-Smith, M. (2002) What a difference a definition makes: highly qualified teachers, scientific researchers, and teacher education, *Journal of Teacher Education*, 53(3), 187–189.
- Cook, T. D. & Payne, M. R. (2002) Objecting to the objections to using random assignment in educational research, in: F. Mosteller & R. Boruch (Eds) *Evidence matters* (Washington, DC, The Brookings Institute), 150–178.
- Danaher, G., Schirato, T. & Webb, J. (2000) *Understanding Foucault* (London, Sage).
- Davies, B. (2003) Death to critique and dissent? The policies and practices of new managerialism and of 'evidence-based practice,' *Gender and Education*, 15(1), 91–103.
- Dillon, S. (2004) Bush's 'No Child Left Behind' law losing support, *Columbus Dispatch*, January 4, A5.
- Education at a crossroads: what works and what's wasted in education today* (July 17, 1998) Subcommittee on Oversight and Investigations of the Committee on Education and the Workforce, 105th Congress.
- Eisenhart, M. & Towne, L. (2003) Contestation and change in national policy on 'scientifically based' education research, *Educational Researcher*, 32(7), 31–38.
- Feller, B. (January 9, 2004) Education funds going unspent, GOP says, *Columbus Dispatch*.
- Feuer, M. J., Towne, L. & Shavelson, R. J. (2002) Scientific culture and educational research, *Educational Researcher*, 31(8), 4–14.
- Flyvberg, B. (2001) *Making social science matter: why social inquiry fails and how it can succeed again* (Cambridge, Cambridge University Press).
- Foucault, M. (1991/1981) *Remarks on Marx: conversations with Duccio Trombadori* (New York, Semiotext(e)).
- Foucault, M. (1998) On the archaeology of the sciences: response to the epistemology circle, in: J. Faubion (Ed.) *Michel Foucault: aesthetics, method, and epistemology* (vol. 2) (New York, The Free Press), 297–333.
- Galison, P. & Stump, D. (Eds) (1996) *The disunity of science: boundaries, contexts, and power* (Stanford, CA, Stanford University Press).
- Gherardi, S. & Turner, B. A. (2002) Real men don't collect soft data, in: A. M. Huberman & M. B. Miles (Eds) *The qualitative researcher's companion* (Thousand Oaks, CA, Sage).
- Goenka, S. (2002) A day in the field that changed my methodology, *British Medical Journal*, 324, 493.
- Gordon, C. (1991) Governmental rationality: an introduction, in: G. Burchell, C. Gordon & P. Miller (Eds) *The Foucault effect: studies in governmentality* (Chicago, IL, University of Chicago Press), 1–51.

- Greenberg, D. (2001) *Science, money and politics: political triumph and ethical erosion* (Chicago, IL, University of Chicago Press).
- Hall, S. (1996) *Stuart Hall: critical dialogues in cultural studies* (D. Morley & K.-H. Chen, Eds) (London, Routledge).
- Hamilton, D. (2002) 'Noisy, fallible and biased though it be' (on the vagaries of educational research), *British Journal of Educational Studies*, 50(1), 144–164.
- Hammersley, M. (2000) Evidence-based practice in education and the contribution of educational research, in: L. Trinder & S. Reynolds (Eds) *Evidence-based practice: a critical appraisal* (London, Sage), 163–183.
- Howe, K. (2004) A critique of experimentalism, *Qualitative Inquiry*, 10(1), 42–61.
- Irigaray, L. (1985) *This sex which is not one* (C. Porter, Trans.) (Ithaca, NY, Cornell University Press).
- Katz, A. & Mishler, E. G. (2003) Close encounters: exemplars of process-oriented qualitative research in health care, *Qualitative Research*, 3(1), 35–56.
- Lagemann, E. (2000) *An elusive science: the troubling history of educational research* (Cambridge, MA, Harvard University Press).
- Laitsch, D., Heilman, E. & Shaker, P. (2002) Teacher education, pro-market policy and advocacy research, *Teaching Education*, 13(3), 251–272.
- Lather, P. (2004a) This IS your father's paradigm: government intrusion and the case of qualitative research in education, *Qualitative Inquiry*, 10(1), 15–34.
- Lather, P. (2004b) Foucauldian 'indiscipline' as a sort of policy application, in: B. Baker & K. Hayning (Eds) *Dangerous coagulations? The uses of Foucault in the study of education* (New York, Peter Lang), 279–303.
- Mol, A. (2002) *The body multiple: ontology in medical practice* (Durham, NC, Duke University Press).
- Morley, L. (2003) *Quality and power in higher education* (Berkshire, SRHE).
- Mosteller, F. & Boruch, R. (Eds) (2002) *Evidence matters: randomized trials in education research* (Washington, DC, The Brookings Institute).
- National Research Council (2002) *Scientific research in education*. Committee on Scientific Principles for Education Research (R. J. Shavelson & L. Towne, Eds) (Washington, DC, National Academy Press).
- Olkowski, D. (2000) Body, knowledge and becoming-woman: morpho-logic in Deleuze and Irigaray, in: I. Buchanan & C. Colebrook (Eds) *Deleuze and feminist theory* (Edinburgh, Edinburgh University Press), 86–109.
- Plotnitsky, A. (2002) *The knowable and the unknowable: modern science, nonclassical thought, and the 'two cultures'* (Ann Arbor, MI, University of Michigan Press).
- Porter, T. M. (1995) *Trust in numbers: the pursuit of objectivity in science and public life* (Princeton, NJ, Princeton University Press).
- Ross, A. (Ed.) (1996) *The science wars* (Durham, NC, Duke University Press).
- Shaker, P. (2002) Is Washington serious about scientifically-based research?, paper presented at the *Curriculum and Pedagogy Conference*, Decatur, GA, October.
- Shavelson, R., Phillips, D. C., Towne, L. & Feuer, M. (2003) On the science of education design studies, *Educational Researcher*, 32(1), 25–28.
- Shore, C. & Wright, S. (Eds) (1997) *Anthropology of policy: critical perspectives on governance and power* (London, Routledge).
- Shore, C. & Wright, S. (1999) Audit culture and anthropology: neo-liberalism in British higher education, *The Journal of the Royal Anthropological Institute*, 5(4), 557–575.
- Shore, C. & Wright, S. (2000) Coercive accountability: the rise of audit culture in higher education, in: M. Strathern (Ed.) *Audit cultures: anthropological studies in accountability, ethics and the academy* (London, Sage), 57–89.
- Shore, C. & Wright, S. (2004) Whose accountability? Governmentality and the auditing of universities, *Parallax*, 10(2), 100–117.
- The White House (2001) *No Child Left Behind* (Washington, DC).

- Tierney, R. J. (2001) An ethical chasm: jurisdiction, jurisprudence, and the literacy profession, *Journal of Adolescent and Adult Literacy*, 45(4), 260–276.
- Thomas, G. & Pring, R. (Eds) (2004) *Evidence-based practice in education* (Maidenhead, Open University Press).
- Trinder, L. (2000) Introduction: the context of evidence-based practice, in: L. Trinder & S. Reynolds (Eds) *Evidence-based practice: a critical appraisal* (London, Sage), 1–15.
- Viadero, D. (2002) Research: researching the researchers, *Education Week on the Web*, February 20. Available online at: [www. Edweek.org/ew/newstory.cfm?slub + 23advocacy.h21](http://www.edweek.org/ew/newstory.cfm?slub+23advocacy.h21) (accessed October 9, 2002).
- Vinovskis, M. (2002) Missing in practice? Development and evaluation at the U.S. Department of Education, in: F. Mosteller & R. Boruch (Eds) *Evidence matters: randomized trials in education research* (Washington, DC, The Brookings Institute), 120–149.
- Willinsky, J. (2001) The strategic education research program and the public value of research *Educational Researcher*, 30(1), 5–14.