You would think it would be relatively noncontroversial to say that educators should attend to research when making educational decisions. But this simple proposition has been the subject of a great deal of debate and hand-wringing. One reason for this is that it has been difficult to find evidence of anyone actually using research, despite the apple-pie merits of the idea. Another is that some critics of research have suggested that research should not, in fact, be a major contributor in educational decisions, either because of flaws in the research itself or because of the greater salience of community values. These arguments have been underway for several decades, though each has taken a slightly different cast as each debate reflects the actual educational decisions being made in each period.

This discussion organizes the literature on the relationship between research and educational practice into three broad categories: (1) the influence of research on policy, (2) the influence of research on teaching practice, and (3) the influence of policy on research. Each of these topics is pertinent to educational administrators and policy makers—the first because these groups have a professional responsibility to formulate policies as carefully and productively as they can, the second because they have an ethical obligation to promote research use as a way to enhance teaching and learning, and the third because many of them also are in positions to influence research itself by establishing policies for the funding of educational research.
THE INFLUENCE OF RESEARCH ON POLICY

The notion that social science might be able to contribute to public policy is a uniquely 20th-century idea. Mitchell (1985) has traced its origin to the 1951 publication of Lerner and Lasswell's (1951) The Policy Sciences, which both proposed and developed the idea of using social science research to help settle policy debates. But research designed explicitly to contribute to public policy did not become commonplace until the late 1960s, when President Johnson began waging his war on poverty. Education was a central part of President Johnson's war on poverty and during this period Congress launched the Head Start Program, the Follow Through Program, the Elementary and Secondary Education Act, the Community Services Act, and a variety of other related, though smaller, programs.

This proliferation of programs, often based on untested premises, stimulated an interest in program evaluation and in the systematic testing of public policy. Alice Rivlin's (1971) Systematic Thinking for Social Action presented an optimistic view of how research could, and should, contribute to social policy. Rivlin's book laid out an approach to rational policy decisions in which program evaluation research played a central role. At the same time that government officials became interested in marrying research and policy, so did researchers. Donald Campbell (1969; 1973), for instance, tirelessly promoted the idea that policy variations should be studied experimentally before being adopted on a nationwide scale. Others, such as Boruch (1975) and Cook et al. (1980) argued for strong experimental designs, even when research was being conducted in natural settings.

The Rise of Program Evaluation

In the context of this optimism, the federal government began commissioning studies of a wide range of education and other social service programs. Large-scale national evaluations were conducted of federal programs, and carefully-controlled studies were also tried, as a way of experimentally testing alternative policy initiatives. Findings from many of these studies were disappointing, in part because they were fraught with methodological compromises and in part because they did not yield the positive findings that program advocates had expected. Because of design problems, it was easy to attribute the apparent negative outcomes to poor evaluation designs. Disadvantaged students, for instance, were frequently inappropriately compared to more advantaged students. These initial disappointments increased the calls for stronger experimental designs, and the use of appropriate comparison groups, so that policy research could provide more definitive statements about the effects of these policies.

Advocates for experimental testing of public policy were not, as many people accused them, trying to usurp a political process and govern as Plato's
philosopher-kings through their social science expertise. But they did believe that policy making could be improved through systematic experimentation and evaluation. Campbell (1973), for instance, argued that policies should be made through a largely unscientific process—a political process. He argued that the job of the social scientist was not to say what should be done but rather what has been done and what effect it had. He chastised his colleagues for veering into advocacy by trying to advise policy makers on what they should do next, rather than confining their remarks to the evidence at hand.

At the same time these large national studies were underway in the 1960s, virtually all of the legislation of that period also began requiring local program evaluations to be conducted by local grantees. As a result, thousands of school districts and all 50 states developed or expanded their evaluation offices and conducted evaluations aimed at contributing to local program decisions (McLaughlin, 1975). This expansion created a new profession and ultimately led to a new Evaluation Research Society, a new division within the American Educational Research Association on School Evaluation and Policy Analysis, several new evaluation and policy analysis journals, a host of textbooks on evaluation methods, and new courses on program evaluation and policy analysis in graduate programs in government, public administration, and education throughout the country.

**Education Evaluation and Research Utilization**

Even as this huge evaluation enterprise developed and expanded, though, it quickly became apparent that systematic research and evaluation evidence were not contributing to policies in the ways that advocates had been hoping for. Evaluation reports proliferated, but so did questions and doubts about their value. Some of these doubts had to do with the extent to which policy makers actually attended to evidence when they made policy decisions. Some had to do with the quality of the studies themselves, and whether they were sound enough to influence policy. Still others had to do with indications that findings were being distorted to fit into political agendas.

What was going wrong? Several hypotheses were put forward, ranging from methodological problems in the research to cultural differences between researchers and policy makers (Snow, 1959). The two-community theory suggested that scientists and policy makers belong to different communities, with different norms for communicating, different decision-making practices, different rules of evidence, and so forth. The differences create a lack of understanding and a distrust of one another. Policy researchers and program evaluators responded to this possibility by reducing the amount of report space devoted to methods and by adding executive summaries in front of their reports.

They also, being social scientists, began to study their problem systematically. Policy researchers created a completely new topic for research: research
contribution to teaching practice and to make an instrumental contribution as well, whereas more recent observers have become more skeptical about the likelihood of such an outcome from research (Kennedy, 1997). Questions about how research on teaching should find its way into the classroom parallel questions about how evaluation research and policy analysis should find their way into new policies.

One important difference between these two issues, however, is that most evaluation research can be transmitted directly from the researcher to the policy maker, whereas most research on teaching requires some intermediaries to carry the message. The sheer size of the education industry in the United States prohibits almost any imaginable method of direct communication between researchers and teachers. This fact means that policy makers are implicated in the relationship between research and classroom practice, for they can, and often do, either become intermediaries themselves or try to support other intermediaries. Policy makers may try to tighten the connection between research and practice by (1) developing regulations or incentives for practice that reflect research findings, (2) sponsoring the dissemination of research findings, or (3) sponsoring professional development.

Regulating Practice

If the 1960s and 1970s can be characterized by undue optimism about the potential of research to inform policy, the 1980s can be characterized by undue optimism about the potential of research to inform classroom teaching practices. A particular genre of research, called process-product research, was widely used and was expected to make substantial contributions to practice. The label “process-product research” came about because researchers were interested in discerning the relationship between classroom processes, on one side, and student achievement (the product), on the other. Most of this work was correlational: Researchers observed and tallied up numerous specific teaching practices and then correlated their use with gains in student achievement gains. The logic was relatively straightforward: We should learn the difference between the practices of teachers whose students gain a lot during the school year and the practice of teachers whose students do not make such gains. We should then describe the practices of the relatively more effective teachers and try to teach these to the relatively less effective teachers. Process-product research often required complex observation schemes to define the specifics of teaching practices and complex statistical procedures to correlate those practices with students’ gains in achievement.

Advocates for this line of work were as optimistic about its potential as early advocates for policy research were for its potential. Gage (1985), for instance, effused about the volume of knowledge we were acquiring and about its significance for teaching practice. Like advocates of policy research,
Gage did not expect social science to replace the practitioner's decision making, but instead to inform it. He referred to this body of research as providing a scientific basis for the art of teaching.

Findings from this research were extensive and were, indeed, informative. For comprehensive syntheses of this work, see Walberg (1986) and Brophy and Good (1986). Some of the ideas from this research, such as time on task and student engagement, gained substantial momentum as they became the focus of more and more research. Researchers learned, for instance, that teachers differed dramatically in the amount of time they allocated to each school subject. For instance, one fifth-grade teacher might spend 68 minutes a day on reading, whereas another spends 137 minutes—double the time of the first teacher! Similarly, one second-grade teacher might spend 16 minutes a day on mathematics, whereas another spends 51 minutes (Berliner, 1984). Even apart from the time allocated to different subjects, some teachers managed to cover a lot more material during the course of a semester than other teachers did.

Whereas the time allocated to each school subject may seem like an obvious contributor to student outcomes, other variables identified by process-product researchers were less obvious. Wait time is an example of a less-obvious practice. The phrase wait time refers to the amount of time teachers wait, once they have posed a question, for some student to volunteer an answer. Teachers with short wait times tended to interject an answer of their own before students had a chance to formulate their answers. Researchers have found that longer wait times increase student achievement, presumably because the additional time gave students a chance to think about the question, and perhaps formulate an answer to it, before someone else answered it for them.

Optimism about the potential value of such findings spread from researchers to policy makers and they became grist for the policy mill. Ironically, although policy makers took interpretive liberties when drawing on research in their own decision making, they did not mind creating policies that imposed research findings on teachers. Several states devised teacher assessment instruments that evaluated teachers according to their use of the effective teaching practices identified by researchers. The idea that such practices should be imposed on teachers, without regard for local teaching context or for teachers' professional judgement, was challenged by many researchers. Critics identified several problems.

One set of criticisms was based on the merits of the research itself. For even as this body of research began to accumulate and to create some relatively consistent findings, its validity came to be hotly debated. One problem was that the work was frequently based on lower-elementary grade levels, on volunteer teachers, and on students from low socioeconomic classes, so that it was not clear that these findings should be generalized to teachers working in different grade levels, in different settings, and with different types
of students. Another problem was that these studies used standardized achievement tests almost exclusively as their outcome measure, and many critics felt these outcomes were far too narrow to represent the full range of outcomes we want from our schools (Cruickshank, 1990).

Another set of concerns had to do with the meaning of discrete teaching behaviors when they were described outside of their original context. Teaching does not consist of discrete behaviors, this argument goes, but rather of meaningful patterns of behaviors. Policies that focus on discrete behaviors, without regard to their meaning and conceptual basis, reduce teaching to an unworkable list of rules devoid of rationale (Anderson & Burns, 1990; Doyle, 1990; Fenstermacher, 1982). It is not clear that the behaviors themselves will produce the desired outcomes if they are not employed in the same meaningful patterns as the original teachers employed them.

Yet another set of criticisms focused on the nature of the teaching practice and teacher decision making. Researchers noted that teaching is inherently a reflexive practice. It requires moment-to-moment judgments that respond to the particulars of the situation. It cannot be governed by rules (Fenstermacher, 1982; Myers, 1987; Richardson-Koehler, 1987). In many respects, these critics were making an argument similar to that made by Knorr-Cetina (1981) and Kennedy (1983) about the role of research in policy: For research to be used, it must be interpreted, and in order to be interpreted, it must be blended with other sources of knowledge—beliefs, values, and experiences—and it must be situationally interpreted. Instead of trying to enforce a list of seemingly unrelated and inexplicable behaviors on teachers, therefore, we might be more likely to improve teaching practice if we could help teachers understand the rationale for these practices, so that they could interpret the findings in light of their own situations and draw on them as they saw fit.

That research on teaching would find such direct, instrumental translation into policy may seem ironic: We have seen that policy makers' own use of research is largely strategic and conceptual, rather than systematic and instrumental; yet despite their own experiences with decision making, they seemed to be as naive about how others—in this case, teachers—could or should use research as researchers had been naive about how policy makers could and should use research. Eventually, though, many policy makers turned to other avenues to try to infuse research into teaching practices. One idea that has been popular for several decades is dissemination.

**Sponsoring Dissemination Systems**

Rather than trying to force teachers to comply with research findings, many policy makers have taken an interest in dissemination programs—networks, newsletters, or other devices that increase the likelihood that teachers will at least be informed about relevant research findings. One important staple in the education landscape today is the large storage and distribution
systems known as the Educational Resources Information Clearinghouse (ERIC), a system sponsored by the federal government. The ERIC system abstracts some 30,000 new pieces of literature each year (Mitchell, 1985) and makes these abstracts available on CD-ROM and over the Internet. Another staple in education is the network of educational research centers and regional educational laboratories, also sponsored by the federal government. Centers conduct research on topics deemed to be of national significance, whereas labs conduct research that meets local needs and disseminate research findings throughout their respective regions. In addition to these apparently enduring institutions, a variety of other federal systems have come and gone: technical assistance centers, national diffusion networks, and others. Many states sponsor intermediate school districts whose job is, in part, to provide information and workshops to administrators and teachers in local education agencies. Many professional associations sponsor professional networks, which help motivate practitioners and keep them informed about new developments in their fields. School districts, too, frequently sponsor in-service workshops for teachers to keep them abreast of the latest developments. The Internet has also made research more accessible to teachers and several sites have been established to provide ideas and techniques to teachers.

There are therefore many potential routes for research knowledge to take on its way from dusty journals to living classrooms. Research is made available through national, state, intermediate, and local education agencies, through professional associations, and through private vendors. Despite this tremendous volume of activity and the tremendous variety of routes research can take on its way to practice, most observers are not satisfied with the results. Critics of education believe that teachers are not performing as well as they should be, given what we know about teaching and learning, but at the same time, teachers believe that research has not been particularly useful to them.

One thing that seems increasingly clear is that making research knowledge available does not necessarily make it acceptable. When the National Education Association (NEA) surveyed teachers several years ago and asked them to rate the relative value of several sources of knowledge, teachers rated local in-service programs dead last (Smylie, 1989) and ranked other kinds of formal education programs near the bottom as well. Sources of knowledge that were ranked at the top included their own experience and interactions with colleagues. Similarly, when Carl Kaestle (1993) interviewed educational leaders and legislators to learn their views of research, he summarized his findings in the title of his article: "The Awful Reputation of Educational Research." One reason for the problem, Kaestle noted, is that everyone has been to fourth grade. This simple fact is true of teachers as well as local education administrators, parents, businesspeople and policy makers. Each of us has his or her own store of experiences in school, and because
of the potency of that firsthand experience, each of us believes we know what is needed to fix the system. Cooper (1996) quoted local school board members as saying, essentially, "I don't know anything about research, but I know what is good for children." Even when we are aware that others disagree with us, we still believe that our solutions are self-evidently correct. When we read research findings, we often view them as either so obvious as to be trivial or as obviously wrong.

Although part of the problem is that we all believe we already have a strong knowledge base of our own, another added complication is that research findings are frequently communicated without enough detail for audiences to thoroughly understand their meaning—to make the kind of situational interpretations that are needed to render the research useful. Just as policy makers need to blend research findings with the rest of their continually evolving working knowledge, and need to make situated interpretations of research findings, so do local education administrators and teachers. Dissemination programs that strip research of its conceptual underpinnings and convey to teachers simple bottom-line admonitions do not give teachers a chance to interpret the findings. Without enough detail to thoroughly understand the research, teachers have only two options: accept the findings or reject them. If these are the only possible responses, rejection is the more likely one to occur.

A third part of the problem is that a great deal of intellectual effort is required to merge research findings with firsthand experiences, especially when such a merger requires one to change one's thinking or one's habits. In fact, Kennedy (1989) has argued that people rarely change their behavior simply because research suggests that they should, but instead because they interpret their own situations as requiring behavior changes. Even people who quit smoking rarely claim that this difficult and important change in behavior was stimulated by research. Instead, they are likely to say it was stimulated by their own experiences—they became aware of shortness of breath or nagging coughs, for instance. Yet they would not have noticed these experiences, nor interpreted them as danger signals, had it not been for the research. How long it takes each individual to reinterpret his experiences and behaviors in light of new research findings depends on many factors, including the strength of one's commitment to the old habits, the extensiveness of one's familiarity with the research findings, and the extent to which one participates in a community whose climate of opinion is changing in response to new research findings.

A fourth important part of the dissemination problem in education is that there is little incentive to engage the hard work of translating research findings into personal experiences in order to improve one's practice. In this sense, education practice differs from practice in other professions. McGuire (1984) listed several features of the medical dissemination system that make it successful, and nearly every feature listed is missing in educational dis-
semination: (1) The general public has a strong interest in seeing that phys-
cicians use the latest knowledge. (2) The press gives a lot of coverage to
medical breakthroughs. (3) Patients pressure physicians to use new knowledge
that they have read about. (4) Physicians' reputation and income depend on
their willingness to respond positively to these pressures. (5) Because med-
icine is highly specialized, professional communities are small and tightly
linked and enable more functional communication networks. (6) Phamaceutical
companies also disseminate research findings: after spending millions
on research, they engage extensive and expensive marketing programs.

These features are nearly all missing in the education infrastructure. The
press gives little attention to education research; parents and students are
more interested in teachers who satisfy their personal needs or respond to
popular fads than in teachers who draw on research findings; teachers work
in isolation and few other adults actually know whether they are using or not
using research findings, and their salaries and prestige do not depend on
such improvements; and textbook publishers, though they invest in market-
ing, are more likely to use opinion polls than research on learning to develop
their products.

The incentive problem is a serious one in education and has been noted
by several researchers (Cohen, 1988; Fullan, 1994; Kaestle, 1993; Kennedy,
1997; Price, 1996). Indeed, the high volume of new ideas that are continually
foisted on teachers, whether from research, policy, or popular fads, may
actually reduce teachers' interest in responding and motivate them instead
to concentrate on their own narrow agenda and to resist all incoming signals.
Throne (1994) described the effect of these numerous messages on teachers,
saying that policies frequently impose a certainty that is missing in real
teaching, and that the only way teachers can cope with "bureaucratic cer-
tainty" is to quietly shut their doors and teach. She also suggests that, if the
door is to remain open, communications have to be two-way.

This is not to say, of course, that no local administrators or teachers are
interested in improving their own practices, but rather that such improve-
ments are both intellectually and emotionally difficult to make, that there
are few official incentives to do so, and that rapidly changing and frequently
fad-driven changes in admonitions can in fact create a disincentive to seri-
ously reconsider one's practices. Practitioners differ, and some researchers
have tried to learn more about why some practitioners are more receptive to
research than others are. There is little evidence that taking courses in re-
search better enables teachers or principals to read and draw on research
findings (Green & Kvidahl, 1993–1994; Walker & Cousins, 1984), but there is
evidence that career commitments and self-confidence matter. Walker and
Cousins (1984) found that teachers and principals who were receptive to
research tended to be more experienced and tended to have a stronger
sense of their own self-efficacy. It is likely that confidence in their own ability
made them more willing to entertain new ideas. Similarly, Saha, Biddle, and
Anderson (1995) determined that principals who perceived more value in research were those who intended to remain in this line of work. Interestingly, these relatively more-interested principals also were people who did not work extensive hours, which Saha and Biddle speculated might contribute to burnout and fatigue.

The bottom line is that the most a dissemination program can do is lead the horses to water; it cannot make them drink. Dissemination programs can make research available to teachers, but most are not designed to help teachers take the intellectually and emotionally difficult step of situationally interpreting—of personalizing—the findings. Nor are they designed to alter the incentives to use research. Weaknesses in dissemination programs and recognition of the substantial intellectual and emotional requirements involved in personalizing research findings have led many observers to propose that policy makers support long-term, sustained professional development programs. This idea is clearly the idea of the 1990s.

Sponsoring Professional Development

As investigators have examined teaching in more detail and have examined the nature of knowledge that contributes to teaching, a new set of ideas about the relationship between research and teaching is beginning to emerge. Under this view, research can only contribute to practice when teachers have ample time to think about and digest the implications of research, and this kind of deep understanding is most likely to occur in extended professional development programs. The aim for professional development in the 1990s has not been to encourage teachers to obediently implement lists of specific practices, without regard for how well these practices fit their situations, but instead to promote a new type of teacher, one who is able to create a practice that was grounded in research. Fenstermacher (1986) has proposed a model of practical decisions that illustrates how such a teacher’s practice might look. In this model, teaching decisions are based on practical arguments. Like formal arguments in logic, practical arguments consist of both premises and conclusions. But practical arguments include a wider range of premises. They include value judgements about goals, empirical evidence about how to get there from here, and estimates about the salient features of particular situation. These premises, taken together, lead the teacher to take a particular practical action.

In fact, though, few teachers have a sufficiently detailed or deep understanding of research to enable them to develop practical arguments in this way, for a variety of reasons. Moreover, there are features of practice that may discourage such rational decision making. Just as researchers have developed a more sophisticated understanding of the nature of policy making, and of how research can contribute to policy making, so they have devised more sophisticated understandings of the nature of teaching. Most of these
findings point to inherent tensions within teaching that prevent teachers from attending more to research or to policy imperatives. We have seen that policy making has its own inherent tensions, but teaching also has some inherent tensions, and these are worth outlining, for the nature of teaching has a great deal to do with whether or how research might be able to influence teaching.

One of the earliest in-depth studies of teaching is Lortie's (1975). Lortie noted that teaching has a number of inherent contradictions. First, our society holds multiple, conflicting, and controversial goals for education. We want children to learn to be able to think for themselves, yet we also want them to respect authority, for instance. Second, the organization of the work is unclear, and there are multiple lines of influence into the classroom. Teachers must respond to district, state, and federal policies, but also to the wishes of parents and the local community. These multiple sources will not likely agree on many points, so teachers must find ways to negotiate among these conflicting ideas. Third, because no adults witness their work, there is no external approval or disapproval for it. Finally, the work itself if highly ambiguous. It is very difficult to know whether or what students have learned, it is difficult to even say what counts as evidence of learning, and it is difficult to see a clear relationship between teaching and learning. The ambiguity of the situation, combined with the ambiguity of goals, motivates teachers to try to narrow their range of concerns and to stabilize their intellectual work as much as possible. Teachers perceive other adults as interfering with their work and complicating matters, so they strive for autonomy and independence from outside influences. But they also simplify the work by focusing on immediate results and narrow, achievable goals rather than longer-term, more ambiguous or ambitious goals.

Meyer (1983) has added to these observations by noting that education in the United States, because it is decentralized, is more susceptible to fads than education in most other countries. Because fads come and go quickly, evidence usually does not appear until well after the idea has lost favor (Kennedy, 1997; Slavin, 1989). Because solid evidence is rarely available when new ideas are being espoused, these new educational ideas are promoted by exaggerated claims or moral imperatives rather than by evidence of their merits. These arguments rarely can be sustained once the ideas are translated into real practices, and they nearly always counteracted at that time. Ironically, these fads further motivate teachers to privatize their practice and to protect themselves from the so-called help of outsiders.

Fullan (1994) has also contributed to our understanding of the nature of teaching and the potential for research to contribute to it. The two most critical problems noted by Fullan are as follows:

1. Overload. Teachers spend a higher fraction of their time actually performing (as opposed to planning, studying, rehearsing, etc.) than do pro-
professionals in almost any other area. As a result, they have little time to think seriously about what they are trying to accomplish or to seriously evaluate their efforts. Fullan also suggested that the numerous prescriptions and fads that come to teachers through dissemination channels, in-service programs, and changing state and district policies may actually exacerbate this problem by further cluttering and fragmenting teachers' harried intellectual lives.

2. Isolation. Teachers work in isolation from one another and from other adults. As a result, "privatism" becomes a habit. Because they are physically separated from others and have no time to talk to others or to engage in systematic analysis of their own practice, they tend to turn inward and to create private sets of standards for their work. That is, they shield themselves from outside influences, including influences from well-intentioned researchers, disseminators, and policy makers.

Cohen (1988) has pointed out yet a further problem with teaching. The academically ambitious reforms that many policy makers are currently striving for place even greater demands on teachers. Reformers today want more rigorous academic content, they want students to work on more complex types of problems, and they want a broader spectrum of students to participate in this curriculum. These ambitious goals, if adopted by teachers, would add even more uncertainty and ambiguity to their work. Moreover, it would increase their dependency on students' motivation and students' cooperation. To the extent that teachers try to accomplish these more ambitious educational goals, they become even more vulnerable than they already are. If teachers stick to their traditional, more limited educational goals, they can be assured of at least a modicum of success.

These observations are pertinent to any reform, dissemination, or professional development plans. For if all these things are true—if (1) the work of teaching is inherently complicated and difficult to understand; (2) it is difficult to know when students have learned or what caused them to learn; (3) teachers are regularly bombarded by new innovations and moral imperatives from parents, researchers, disseminators, and policy makers; (4) teachers have no time to think through and interpret all their experiences, much less to reason about the relative merits of all these new proposals, in light of their experiences; and (5) teachers must develop and sustain their practice in virtual isolation—then it should not be surprising that their practices tend to become rigid, that they reject outside ideas, that their thinking is not very systematic, or that their practices are not very responsive to new research findings.

It should not be surprising, in fact, to learn that teachers use a craft orientation, rather than a research orientation, to formulate their practice (Huberman, 1983). Huberman characterized a craft orientation as one in which the practitioner focuses on short-term outcomes, prefers intuitive judgements to empirically justified practices, and tends to believe there is no real under-
lying order to the process of teaching and learning. Even more disturbing are
the findings from Schwille and others that teachers' decisions about what to
teach are based on such factors as their personal enjoyment of the subject
more than on a sense for its relative importance to student learning (Schwille
et al., 1981).

For all of these reasons then, contemporary reformers tend to advocate a
different approach to the improvement of teaching. Policies that aim to regu-
late practice, and those that send research bulletins to schools, tend to
increase teachers' defensiveness and decrease their receptiveness to new
ideas. The alternative approach currently being tried is to alter teachers' working conditions and to alter the professional climate of schools. One
such change might be to modify the ratio of time spent directly with children
relative to time spent in planning and evaluation. Such a change would be
consistent with the scheduling of teachers' time in Asian countries, where
Stigler and Stevenson (1991) found that greater time available for planning
and evaluation of teaching practices stimulated a much more self-critical
attitude among teachers and a greater willingness to consider alternative
approaches to their practice.

Another such change would be to encourage more collegiality among
teachers, so that teachers learn to draw on one another as resources and so
that teachers might develop the kind of professional community that fosters
continual professional development through its climate of opinion and its
peer pressure. The idea behind such proposals is not merely to change the
structure of teachers' work—altering the teachers' work schedule and in-
creasing the amount of time spent in collegial interactions—but also to alter
the professional climate of teaching so that teachers would be more able
and perhaps, therefore, more willing to read research, to reflect on its mean-
ing, and to consider its implications for their teaching practices.

But these are merely ideas. So far, no state or local agencies have found
ways to create such structural changes, nor to create or fund the kind of long-
term, intellectually coherent schoolwide professional development that might
foster these changes in private attitudes or in broader climates of opinion. It
is too early, therefore, to say whether such changes might foster the kind of
relationship between research and teaching that many strive for.

THE INFLUENCE OF POLICY ON RESEARCH

The first two sections of this chapter have examined the ways in which re-
search influences policy decisions and the ways in which research might be
able to influence local practice, with the help of policy. One further relation-
ship between research and policy needs to be considered. This third aspect
of the relationship reverses the direction of influence and examines the ways
in which policies can or should influence research. Policies may influence
teachers to be able to justify their actions with reference to generally agreed on principles of pedagogy, just as physicians or other professional practitioners do. These generally accepted principles will likely take on the static "if X, then Y" form of propositions. The two kinds of knowledge, then, need not be incompatible, but should in fact complement one another. Second, findings from ethnographic studies are necessarily limited to descriptions and interpretations of existing conditions—the status quo—and therefore may not be able to guide teachers toward better practices or toward solutions to the widely recognized problems in the current situation (Cazden, 1983). Tom and Valli (1990) have suggested a possible rapprochement on this argument, proposing that perhaps such studies can help if they provide "generative potential"—the potential to stimulate teachers to generate new practices of their own.

Another proposal for improving the potential utility of research has been that researchers should engage in more collaborative research efforts with teachers or other local educators. The U.S. Office of Educational Research and Improvement (OERI) has been attracted to this idea and has, at varying times, required its funded researchers to show evidence of collaboration with practicing teachers. One prominent promoter of this idea is Michael Huberman (1989), who has studied the effects of research when researchers engage in what he calls sustained interactivity with their clients. In sustained interactivity, researchers interact with teachers prior to conducting the study, to be sure that they understand the teachers' problems and point of view; they interact during data collection, to be sure that the data they are collecting are relevant and valid; they interact during data analysis; and, of course, they interact when reporting their findings. When researchers and teachers interact continuously, Huberman has argued, teachers are far more likely to use the findings once the study is completed. Huberman argued that one reason this sustained interactivity makes a difference is that it increases the likelihood that teachers will have a deep understanding of the meaning of the research by the time the study is finished.

Huberman's idea is an attractive one, and it has been suggested by other researchers as well (see, e.g., Bennett & Desforges, 1985; Donmoyer, 1989). But several criticisms can be made of this proposal. First, good research is frequently critical of the status quo, and it is hard to imagine that a researcher working closely with teachers would feel free to report findings that were heavily negative, or even that disagreed sharply with the teachers' perspective, unless these findings were on relatively innocuous topics. Second, collaborative research is not a large-scale solution to the problem of knowledge use, because its direct benefits accrue only for those teachers who actually participate in the study. The size of the education community in the United States prohibits genuine participation in education research by all practitioners. The third criticism of this line of reasoning is that, to the extent that teachers each hold a unique body of knowledge built from their own
private experiences, it is not clear that the participation of one group of teachers will necessarily assure that the findings will be meaningful to other groups of teachers. So although many researchers are discovering the benefits of collaborating with teachers, many go to great lengths to find compatible teachers with whom to work. Enforcing such collaboration as a condition of funding may not yield the intended benefit.

Another proposal for research funding policies is to focus research on important topics, rather than worrying about the forms or processes of the research. This line of reasoning suggests that policy makers should not think about the form of the research (ethnographic versus correlational studies, for instance) nor should they think about the process of the research (research done in collaboration with teachers versus not); instead they should think about the topics that researchers address. Shulman has made this argument more than once (Shulman, 1970, 1986) and on both occasions argued that we need more research on the teaching and learning of specific school subjects. When Shulman first made this argument, in 1970, he was concerned about the volume of research on learning that was being conducted in laboratories, most of which studied learning by asking adults to memorize lists of random syllables. He suggested that researchers move out of the laboratory and into the classroom, and focus on learning of real children learning real school subjects. When he made the argument the second time, researchers had moved almost entirely into real classrooms to conduct their research, but much of their attention was focused on issues of classroom management and discipline rather than on the character and intellectual integrity of the content being taught. If policy makers believe that teaching and learning particular subjects is important, and that researchers are not giving sufficient attention to the teaching and learning of specific subjects, they should organize their funding to support research in those areas.

Policy makers who aim to sponsor research face difficult decisions when it comes to establishing funding priorities that will be most likely to benefit practitioners, for researchers themselves are of mixed minds about how to proceed. Moreover, these different ideas are not necessarily complementary. It would not necessarily make sense to sponsor research that was (1) ethnographic, so that it matched the holistic character of teachers’ thinking, (2) done in collaboration with teachers, and (3) focused on the subject matter being taught and learned. Using highly interpretive ethnographic methods in studies involving collaboration with teachers, for instance, might invite research that is essentially self-congratulatory for teachers. Requiring that research be done on a predefined topic and also collaboratively may also backfire, for funding agencies may not be able to find strong combinations of teachers and researchers who share an interest in the funding agency’s favored topics.

Though there are still many unknowns regarding the optimal forms or topics to encourage through funded research, some things do seem clear. One important conclusion is that funding agencies need to think of research
as yielding knowledge about teaching rather than techniques for teaching. Research on the nature of teaching and teacher thinking, the nature of teacher learning, and the relationship between research and practice all agree that teachers gain more from understanding general ideas that they can situationally interpret than they gain from lists of techniques that lack conceptual underpinnings. One reason for this, I suspect, is that no technique exists that can be used repeatedly over the day or over many days. Both teachers and students need variety. If teachers understand the principles underlying research findings, they can build a variety of teaching episodes that are consistent with those principles but that also adapt to their particular daily situations and needs.

Another important conclusion is that funding agencies need to think of this knowledge as something that will necessarily be situationally interpreted rather than blindly implemented and that the hoped-for improvements in student learning are more likely to come about if teachers can create their own research-based practices than if teachers are simply given admonitions that they must accept or reject without question. This means that the most likely methods for influencing practice will not be written communications or brief workshops, but instead will probably be longer-term and conceptually oriented programs.

**SUMMARY AND CONCLUSION**

If we view research in the context of the entire history of education, we can see that it is a relatively new innovation. Much of the United States' educational history, especially at the beginning of this century, has been taken up with expansion—expanding the number of grade levels that comprise the compulsory years, expanding the number of students who attend schools, expanding the curricular offerings available within the comprehensive secondary school, and expanding the number and variety of offerings available to students once they have completed their high school education. Associated with this great expansion was a continuing concern with finding enough teachers to meet new and expanding demands (Lucas, 1997). Throughout most of this period, our most salient educational problem consisted of finding enough warm bodies to fill the classrooms, so we did not worry much about finding ways to improve the quality of their teaching.

Consequently, teachers have historically received few incentives to improve their practices and even fewer guidelines as to how they might improve their practices. Left to their own devices, teachers have devised their practices largely by emulating the practices of the people who taught them a generation earlier (Cuban, 1984; Lortie, 1975). Not surprisingly, teaching came to be thought of as a conservative profession, one on which traditional content and pedagogy were sustained over time and in which innovations were shunned.
It was not until the 1960s, as our school population finally stabilized, that we began to think seriously about the quality of teaching and learning in our classrooms. This was also the period when most of our research endeavors began in earnest. It has really been only in the past 30 years or so that research has been considered as a potentially important contributor to education—to teaching or to educational policy making. Viewed in this way, perhaps it is too soon to determine whether research has had a suitable impact, either on policy making or on teaching practices. Viewed from the vantage point of history, we can see that the idea that research could or should contribute to educational practices and policies is a relatively new idea.

The literature referred to in this chapter has yielded three important findings regarding the relationship between research and educational policy and practice. First, it has shown that the naïve model of research use, called the instrumental model, does not fit. Instead, both teachers and policy makers use research conceptually. They weigh its findings in light of their own personal values, their own particular situations, their own experiences, and the values and beliefs of those with whom they are in daily contact. Second, research use entails situational interpretation and adaptation. People cannot take research findings as they arrive, but instead must translate the findings into their own contexts, bending and adjusting the ideas to make them fit. Finally, and closely related to the first two points, is the finding that knowledge from research has a greater impact than prescriptions. This third point makes sense if we recognize that research will be used conceptually rather than instrumentally, and if we recognize that people must translate and adapt research findings to their particular situations. It is hard to make such adjustments with prescriptions, but knowledge provides us with greater flexibility.

One could argue that, given the relatively recent entry of research into the education landscape, it has had a remarkable impact. Many of the ideas that motivate contemporary policies, and many of the ideas that motivate contemporary teaching, have come from research. Moreover, much of the perceived lack of research use really derives from faulty expectations for what research use should look like. In the area of policy, optimistic government planners and researchers hoped to forge a new, empirical and rational kind of policy making. When they did not see policy makers making rational choices among alternative policies, they thought that research had had no impact. In fact, research had had a great deal of influence on the thinking of individual policy makers and on the climate of opinion. These influences, in turn, affected the continual negotiations and tinkering that policy makers engaged in. The problem was not in the value of research, but rather in the naïve expectations for how research should contribute.

Similarly, when policy makers tried to use research to regulate teaching behaviors, they were disappointed when they discovered that teachers did not obediently implement whatever procedures were required of them. But this disappointment, too, derived from a naïve notion of what research use
should look like in the classroom. For just as policy makers need to negotiate with others in their environments and need to adjust research findings to accommodate their values, experiences, and the beliefs and values of their colleagues, so too do teachers need to adapt research findings to their particular circumstances. Both groups must engage in situational interpretations of research findings. If we put aside our naïve expectations for research use among teachers, we can see that even though teachers have been unable or unwilling to implement techniques prescribed by others, they have nevertheless altered their practices in numerous subtle ways to reflect new ideas they have encountered, and many of these ideas originated in research.

These new insights into the potential for research to influence practice also have implications for how policy makers might influence research through their funding practices. We now see, for instance, that there is virtually no distinction anymore between applied research and theoretical research, and we see that the applications that follow from research can only occur when the findings are accompanied by a principled rationale. Thus research-sponsoring agencies may want to focus their efforts on identifying important topics rather than on identifying the best methods or structural relationships for research.

Associated with these three important findings regarding research use are findings about the nature of educational decision making. Whether the educator in question is a policy maker, a teacher, or an administrator, he or she is engaged in a practical enterprise that must be continuously adjusted to accommodate changing environmental pressures. Educational decisions are not choices among clear alternatives, but rather inventions designed to accommodate as many constraints and as many ideals as possible. No decision ever satisfies all the goals and constraints one faces, so there is a continual need to adjust. The fact that educators must regularly adjust their practices to accommodate continuing constraints, continuing unmet goals, and continually changing circumstances means that research knowledge must compete for attention with all of these other pressures. But such a situation does not necessarily mean that research is not valuable, nor that it has no place in educational thought. Rather it simply means that research faces tough competition for educators’ attention.

References


