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**Educational Psychology as a Policy Science:
Thoughts on the Distinction Between a Discipline and a Profession**by David C. Berliner,
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Some of you know that I entered the policy arena about a decade ago. After happily and productively working as an educational psychologist in the area of research on teaching, well out of the public eye, I became fed up with the incomplete, distorted and political uses of data that I saw around me. This unhappiness started for me with the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983). That influential report described a school system that I didn’t recognize. It had been written by people I knew and liked so I originally kept quiet, thinking that although they may have gone too far, all that attention would be good for education. I believed that the report might help us to get more money for research and that it could lead to policies that would help schools that were not succeeding. But the two years following publication of that inaccurate and data-less screed witnessed the publication of, literally, hundreds of criticisms of the public schools. Eventually it dawned on me that many of the critics were not out to help the schools get better at all. They appeared to me to be out to destroy public education. Whether accurate or not, this realization brought my values to the foreground of my professional life. I discovered that I had a deep, almost visceral commitment to public education. I came to believe that the institution I cherished personally, and believed to be indispensable to our nation, was under attack. I thought I needed to talk about this and so I changed the direction of my career.

**Social Science and Policy Analysis: Enacting Values**

I mention this because to engage as a social scientist in policy work requires an understanding of the role that values play. As Martin Rein (1976) notes, the study of social policy is, above all else, concerned with choice among competing values and therefore, what is morally or culturally desirable can never be excluded from discussion. We may try to check our values at the door when we operate as work-a-day educational psychologists, studying mnemonics, or help-seeking in classrooms, or meta-cognitive activity, or learning in small groups. But no such luxury is allowed the person who deliberately chooses to work in the policy arena. In fact, it is debatable whether we can ever check our values at the door in any work we do, since a good deal of contemporary thinking about science informs us that "Social phenomena cannot be understood in isolation from the framework of thought which organizes evidence, interprets it, and infers policy decisions which are consistent with it." (Rein, 1976, p. 15). That is, every scientist really must spend some time trying to understand their values and how those values influence what they study, how they study it, what they find and how they interpret what they think they found. This simple truth about all scientists just holds double for any social scientist that deliberately chooses to work in policy areas.

**Entering the Policy Arena**

In 1991, at a meeting of the American Psychological Association in San Francisco, I spoke publicly for the first time about how the schools I went to and the teachers I studied seemed remarkable to me. My personal experience was that reasonably good education was taking place in schools I visited, given the impoverishment of the children many teachers and schools served, and the working conditions for that service, Moreover, I said, where students were healthy, families working, neighborhoods secure, and teachers well-trained, I saw extraordinary public school education taking place. I noted then that the worst teachers I saw were tired and mediocre, but not evil, practicing devil worship, forcing secular humanism on children, or indoctrinating children into homosexual life styles, as critics from the Christian right contended. I also did not see the pushing of anti-American values, whole-language philosophy or conceptual mathematics to the exclusion of democratic and patriotic values, phonics, and computation, as many of the conservative right claimed and many of our newspapers reported

To be sure, I saw schools I wouldn’t send my own children to, but I didn’t have to do that. I had a choice, as many middle class people do. So I chose to live where the public schools were good and my children were well served. But the schools I would not have chosen for my family had something in common: they served poor children. Poor families did have to contend with schools that were deteriorating physically, that had new or emergency certified teachers, that promoted low expectations, and that had developed a culture of low achievement along with high drop-out rates. Moreover, such schools were usually in neighborhoods that were in disarray, with low rates of employment and high rates of under-employment, many single-parent families, high levels of drug use and its always present correlate, high levels of violence. I tried to argue that American public education actually worked quite well if it had an environment in which to flourish, and that it was only failing in some places, places that seemed to me to be failing-by-design. I thought that structural and economic forces were keeping certain schools inadequate, and that it was not the fault of lazy teachers and incompetent bureaucrats—though there were certainly enough of those to be concerned about. But teachers and administrators, I believed, were too easily made the scapegoats for a society that had chosen to cheat some of its citizens out of a first-class education.

**Continued Engagement**

I realized as I spoke out that public education was under attack and that I had skills as an educational psychologist to help clarify the extant data, or create new data and arguments that could help illuminate some of the educational issues with which America had to deal. Armed with a strong belief in the power of research in general, and educational psychology in particular, I attempted to "speak truth to power." In the decade since, particularly after the publication of *The Manufactured Crisis*, (Berliner and Biddle, 1995), where these ideas were put forth as forcefully as my co-author and I could do so, I remain convinced that I do have a perspective about what is trustworthy to believe about our schools and, therefore, what is worthwhile to act on. I am also convinced that certain influential people such as Bill Bennett and George W. Bush, to name just two, have simplistic views about the deficiencies of our schools and little understanding of their strengths.

In the decade since I became involved with policy issues I have come to regard such work as remarkably healthful. That is, when I use some of my time to apply my research expertise to the political debates in which education is constantly enmeshed, I am doing something good for me, my profession and maybe even my nation. Even if I am ignored and my interpretations of data attacked, and I end up in someone else’s opinion as "speaking nonsense to power," I believe that what I do is personally nourishing, proper, responsible, and required of citizens in a democracy. I have come to think, also, that entering these policy debates may be an obligation of members of a profession, an obligation that goes right along with the rights and privileges that are granted to professionals, particularly those that belong to the professoriate as well.

**Obligations of the Professoriate**

My training as an educational psychologist, along with the generally good reputation I earned as a research scientist in traditional areas of educational psychology, made me a credible person to attempt to speak to power. I am a university professor, who, like others in the professoriate, receives at least a modicum of the public’s respect. Most educational psychologists who serve also as academics share the honorable and well-respected title of *Professor*. But I wonder if we have collectively thought much about the obligations that go with that honorific title and the tenure that often accompanies it. Members of the professoriate have been given the right by our society to speak freely, to profess, with remarkably few restraints put on what they might say. But is this simply a right of the professoriate or is it an obligation of the professoriate? Should we worry that not enough educational psychologists are professing freely and publicly in areas where they have the expertise to do so? I do!

I am not questioning here what this community of ours knows, or studies, or writes about in scientific journals and presents at conventions. I ask instead, given that our community has many university professors, what is it that we might be willing to profess publicly? Have we something to add to the educational debates that are shaping the future of our country by bringing the range of our skills and our values to the important public issues surrounding education? When professors enter into the educational debates that all Americans care about, we generally receive enough courtesy to get a hearing, even from people that disagree with us. And even if what we say is unpopular, our tenure will protect us if we are not too intemperate in our presentations.

It can be argued that our democracy depends on debate and the open discussion of issues for its maintenance and survival. Although not always expressing these values perfectly, American universities, more than most other institutions, usually uphold these values quite tenaciously. I worry that if we educational psychologists do not enter the policy debates of our times, using our skills to add something to the debates, we end up shaped by less qualified individuals who do participate in those debates. Under these conditions we end up as pawns, not origins. Perhaps worse, through non-participation, we could see the public schools suffer.

**Examples of Policy Issues Where Educational Psychologists Can Be Useful**

Let me provide two contemporary and concrete examples of policy issues where we don’t have to be silent; where we have knowledge to enter the policy debates that go on around us, and where our relative silence on these issues produces a weakened educational system. Given the values I hold, I believe that if we do not continually, and loudly, inform the public and its politicians of the possible, probable, and already appearing side effects of high-stakes testing, we are in danger of creating a public school system that cannot meet its intended goals of improving learning. Moreover, high-stakes testing may have negative unintended side effects, as well. Most of us know a lot about testing and assessment, and most of us, I think, have a positive regard for what some kinds of testing can do for individuals and school systems. But today we see many inappropriate uses of tests and it makes me mad and sad, given what we collectively know about tests and measurement.

A second belief of mine is that we actually teach something of value in our colleges of education. Thus, the hiring of uncertified teachers will do harm to the profession of teaching and to the children with whom those uncertified teachers are placed. Individuals I believe to be unqualified are now taking full time teaching jobs, and this also makes me mad and sad.

Do we educational psychologists have sufficiently reliable knowledge to share with others about these two contemporary and heated policy debates? I think we do have that knowledge and will demonstrate that by exploring each of these issues in more detail.

**High-stakes testing policies.** On the high-stakes testing issue, for example, I doubt if many in our field would argue with the following statement: Rewards have undermining effects for some people, some of the time. This is a simple enough conclusion from a rich debate in our literature that has gone on for many years. So, with high-stakes tests providing big rewards to students, there is likely to be some undermining of achievement motivation taking place. Shouldn’t we bring this issue up? Furthermore, it is not just students who are rewarded by high-stakes testing policies. Under some school improvement plans teachers get bonuses if their students score higher on state tests. Yet no one I know is in teaching for the money, and many of the teachers I know tell me they do it because they have to, that it is a calling, a mission, for which they are intrinsically motivated. Given this state of affairs, isn’t it likely that cash rewards will undermine the motivation of at least some of these teachers? And if that is so, aren’t some of these teachers likely to quit the profession? In my opinion, this is already happening. Educational psychologists would be in a good position to study and speak about these unintended negative effects, easily predicted and easily studied, had we taken an active voice in the debates on these issues.

I also doubt if many of us believe that punishment of students for low scores on high-stakes tests is always greeted by an attribution like "I didn’t work hard enough, I’ll be sure to work harder the next time I take this test!" That just doesn’t happen for everyone. Many of us would hypothesize the opposite attribution as at least as. That is, after a low score is obtained, many students will attribute their poor performance to their inherent stupidity. And as a consequence, some of these students are likely to display the symptoms of learned helplessness. Thus, with high-stakes tests, we might expect to see an increasing number of school drop outs, particularly among the lower achieving students. And that seems to actually be the case. Again, we could have predicted and studied these things, had we been active in the policy debates.

I also doubt if many educational psychologists find the evidence for academic improvement associated with retaining a child in grade for failure to pass a test at all persuasive. Reading the literature in this area over many years suggests that a more successful policy is one that provides a child with extra resources and promotes them to the next grade along with their age mates. But to our dismay, low performance on high-stakes tests is encouraging increases in grade retention, exactly the kind of policy most educational psychologists think is inappropriate. We should have a voice in this debate. I am pleased to note that Jere Brophy (in press), writing on grade retention and social promotion for the forthcoming second edition of the *Encyclopedia of Education*, minces no words on this issue. Because of him, one of our key reference works that is often used by the public, will explain clearly that retention in grade is a failed social policy. Yet our president and congress recently all signed an educational bill that mentions scientific educational research and evidence-based decisions in education at least 100 times. And with no hint of hypocrisy, that same bill then goes on to advocate against promotion for students that are behind in their work, arguing instead that retention in grade is preferred. Because of this bill we can expect that the *wrong* decisions about retention and promotion of children will be made about 1,000,000 times per year. If, as I believe, the great majority of our educational psychology community believes this to be a wrong-headed national policy, how can we influence our politicians and the general public? To be honest, I am not actually sure of the right answer to this question. But I do know that silence is certainly one of the wrong answers to this question.

Continuing on this issue of high-stakes testing I would ask if many in our discipline would argue too much with this statement: The more that teachers and schools do to prepare students for high-stakes tests, the more the inferences to be drawn from that test are likely to be invalid. Drill-and-kill programs, narrowing the curriculum to teach only what’s on the test, and commercial test preparation programs all sound like reasonable activities to engage in when high-stakes test are mandated. But what we forget is that the inferences to be made from the test are actually compromised if narrow forms of test preparation dominate instruction. This occurs because the items on state tests are ordinarily meant to be indicators of learning over an entire domain. If classroom instruction focuses on the ability to answer specific items correctly, not on learning the broad domain from which the items are sampled, then all you end up with is evidence of training. Under such conditions what you do not have is evidence that learning in the broader domain of interest took place. The inference you want to make from scores on a test is about competency in the domain from which the items of the test were drawn. That inference is seriously compromised in schools and districts with a heavy emphasis on preparing for high-stakes tests. Yet that is precisely what is happening all over the country, making the construct validity of these tests as suspect as their consequential validity.

I doubt also if many of us would argue that school quality differs for poor inner-city children, in comparison to the schools available to upper middle-class suburban children. Our literature informs us that the teachers of the poor are more likely to be inexperienced, and therefore less competent. They are more likely to be uncertified, and therefore less competent. They are more likely to be teaching out of field, and therefore less competent. They are also more likely to be teaching a higher percent of second language learners, special education students, students who are absent 10 or more days per year, students who were not in the school the whole year, students from single parent families, students whose caretakers are not high school graduates, and so forth. After a few years of instruction under these conditions, the children so taught are held to exactly the same passing score on high-stakes tests as are more privileged children. Who among us would defend this as a fair system of education?

High-stakes testing has broad bi-partisan support. It is also, I believe, an emerging catastrophe for our public schools and especially for the poorest children in those schools. The only way to understand what I believe will happen is to think about one of the more robust principles of human behavior we know, a version of the Heisenberg uncertainty principle with regard to social decision-making. That principle states that *"The more important that any quantitative social indicator becomes in social decision–making, the more likely it will be to distort and corrupt the social process it is intended to monitor*" (Madaus and Clarke, 2001)

My student, Audrey Amrein, and I just published a paper showing that even when a state’s own high-stakes tests show gains, there is no reliable evidence of learning gains on transfer measures such as the ACT tests, the SAT tests, the NAEP tests, and the AP tests (Amrein and Berliner, 2002). These national tests all cover some of the same domains assessed on the state tests. But when teachers narrow the curriculum and do extensive test preparation because the stakes are high, students' domain learning and transfer scores may actually be reduced because of exposure to a greatly impoverished curriculum. In short, we have credible evidence that high-stakes testing, as an educational policy designed to enhance student learning, does not achieve its goals.

I don’t know if anyone will listen to us, but that is not completely relevant as a criterion for judging our success. We chose to do a research study with policy implications because we thought that high-stakes testing policies were not likely to work in the ways intended by the politicians. So we used our skills to enter the debate and challenge the policy. Clearly, our values determined what kinds of research we wanted to do and how we would conduct the research to illuminate the policy issue about which we were concerned. The important question that should be raised is whether such partisan research can be trusted? I think so, though that is an important question, and I will come back to it, below. First, however, I would like to move away from high-stakes testing and describe another contemporary policy debate into which educational psychology might enter.

**Teacher certification.** Almost all professors of educational psychology spend some time teaching educational psychology to people who are or want to be teachers. Some of the respondents to this essay are among those in the field who have decided that they know better than most what elements of educational psychology are most useful to teachers, and so they have created texts for teaching the subject matter about which we care. In many, if not most, colleges this subject matter is important enough that it has become a required course in programs of teacher preparation. The vast majority of us who teach educational psychology genuinely believe that knowledge of our discipline helps teachers do their job better. How is it, then, that while most of us believe that our subject matter has usefulness in the preparation of teachers, most of us sit back while policies for the de-certification of teacher education are promulgated? The de-certification movement not only ignores the knowledge in our discipline, it endangers our jobs as well! Bright, articulate and well-funded people at the Fordham Foundation, the Hoover Institution, the Manhatten Institute and other conservative, right-wing opinion-tanks are saying that educational psychology is irrelevant for novice teachers. These groups claim that the foundational and methods courses that make up the teacher education curriculum, along with supervised student teaching, are unnecessary. We ought to be doing something about this debate out of simple self-interest, if not out of intellectual commitment.

Many conservative groups want privatization of American education. So with their market philosophy and belief in education as a private good, they push the deregulation of teacher certification, claiming that university training in education is useless, perhaps even damaging, and certainly much too costly. Others against university teacher education programs claim that alternative certification programs like Teach for America "prove" that 5 weeks or so of training is all that is necessary to prepare people to teach and be effective at it. It took some time for me to realize that such people insult me and my discipline. They challenge my belief in the power of the ideas and findings of educational psychology to influence classroom teachers in positive ways. These critics insult my colleagues in the College of Education. So I did what I know how to do; I designed a study to check the claims of the critics. I have the research skills, so why shouldn’t I use them to design studies that might influence policy, if I could do so in some intellectually honest way?

I went to work on this issue with my student, Ildiko Laczko-Kerr (Laczko-Kerr, 2002). We went to five districts that have high numbers of under-certified teachers—teachers who hold emergency certification, provisional certification, and alternative certification—and asked if we could look at the mean SAT 9 scores for these teachers and a group of other new teachers. The comparison group was new teachers who held regular certification because they had taken university preparation programs, including a version of my favorite course, educational psychology. We then matched the regularly certified teachers in these districts with the under-certified teachers in these districts on years of experience, social class of the students taught, school demographics, and so forth. We were able to find 110 matched pairs. After other statistical work to insure that we had defensible matches, we examined the SAT 9 scores for 1998-1999 and did this again for matched pairs of teachers in 1999-2000.

To make a long story short, the students of certified teachers scored significantly higher than did the students of under-certified teachers. The students of the Teach for America teachers, the five-week wonders brought in to save poor children from their fate, scored no better than the students of other teachers without proper certification; that is, they too performed significantly lower than the students of the certified, university-trained teachers. On the subtests of the SAT 9, using the grade equivalent scale, the differences in effect size were four months in reading, three months in mathematics and three months in language arts. These differences were all in favor of the students of certified teachers.

Since the students in some of our wealthiest districts never have an uncertified teacher, and the children in some of our poorest districts often have two or three uncertified teachers during their elementary school years, we can reasonably predict that these children will be about one year behind other, more fortunate children, in tested performance at the end of elementary school, simply because they have received less competent teaching. These less advantaged students may thus have a prima facie case against the state for failing to provide an equal education for them, and perhaps they may eventually obtain some redress though the courts. I hope that some of the data that might influence the court can come from the research done by my students and me. Certainly I cannot singlehandedly stop the policy of cheating the poorest students in Arizona, and elsewhere, of a high quality education. But I can provide pretty darn good research that might influence these harsh policies, eventually. And if I am called to testify, I can provide a pretty good social scientists' defense and explanation of the data we collected. So by doing this study, I not only do research that is in accord with my values, I also defend my job, my college, and poor children against accusations of general incompetence. Although we do a very imperfect job of teacher education, it is demonstrably better than the alternative—the hiring of teachers with no teacher education at all.

**Policy, values, and data**

Let us now come back to the issue raised before, namely, can policy-oriented research be trusted? Most of us were taught to believe that, as scientists, we were supposed to do work without our values influencing us. But in this day of enlightenment about how science works we know that this is nonsense. What we need to do is follow Martin Reins (1976, p. 256) in aspiring "to be simultaneously committed to a moral position, yet at the same time to doubt that position sufficiently to want to expose it to evidence and criticism." Reins makes it clear, I think, that it is not the prominence of values in our lives and work that is the problem for social scientists. The problem for social scientists is their failure to pay attention to how those values might influence their work, to ignore how their values could make their scientific work less credible.

Of course we should guard against having our data tainted by our values. But social science research is rarely a direct basis for policy, anyway. Policy is about competing values, not competing data. Let me emphasize that, because it took me a long time to learn. Policy is about competing values, *not*competing data. When social scientists do their work well they can provide policy makers with what might be called "*is* data." The policy makers, however, use what might be called "*ought* data." And you simply cannot go from an "is" to an "ought," that is, you cannot go from a statement of fact, to a statement of value. A candidate for governor in Arizona told me something relevant here. I was explaining to him the facts, as I saw them, about the high-stakes Arizona tests. After hearing me out he said, "Don’t you understand, David, the facts in this situation are negotiable, but the perceptions about this test are rock solid!" You just cannot go from an "is" to an "ought." While this can be depressing for some social scientists, it is the nature of policy.

Still, if we educational psychologists, we social scientists, do our job well, we can at least establish the "is." We can establish reasonably credible facts about a situation, using the powerful methods we have developed or borrowed for establishing factual claims. When we bring that kind of skill to the debate, we are fulfilling our obligations as social scientists. And there is plenty of need for plausible, reliable, reasonably objective facts in policy debates, if for no other reason than that such facts enable us to understand whether a person's claims are even congruent with his values.

Thus, although we recognize that academic knowledge generated by social scientists is not at all decisive in the policy-making process, it is useful, and there is more to our role than mere purveyors of knowledge. We are also valued for our judgment and experience when we are acting as advocates for, and advisors on, different points of view. Rein (1976) points out that it may be social scientists, rather than social science per se, that play the most prominent role in policy making. So there is much for us to do. At the least, we can expose, if not directly eliminate, those policies that more closely resemble political spectacle than genuine attempts to improve social conditions, such as the high-stakes testing policies currently sweeping the nation (Edelman, 1988).

The two personal examples I have cited above were given because I think educational psychologists are in some ways obligated to engage in debates such as these. Of course policy work is messy and frustrating. Therefore, it is not for everybody in our field, and probably not for the youngest members of the discipline, who would be better off focusing on earning their stripes as scholars in traditional ways. It is also true that policy work may not be for every one because, as Rein notes, policy work is always involved with ambiguous and even intractable problems—such as policies concerned with poverty or poor schooling or elimination of hunger or illiteracy or violence. The end values, the societal goals, are themselves controversial and subject to discussion, if not passionate debate. These goals cannot be treated "scientifically" in any traditional sense. On top of that, policy analysis uses social science tools that we know produce inherently uncertain and incomplete findings. Under such circumstances we end up with a situation where imperfect findings are brought forth to interpret goals that are ambiguous and conflicting. This is the reason that policy work is inherently messy. Nevertheless, there is room for social science here, so long as we recognize its limits. While the facts may always be "negotiable" to some, and perceptions all too often stay "rock solid," ferreting out reliable facts from ambiguous situations is no mean achievement; it is really a great day for the social sciences when that can be done.

**Educational Psychology as a Profession**

In this essay I am *not* simply asking people who agree with me to join in messy policy debates. I am asking, instead, that the skills we have as professionals, as practicing educational psychologists, be used to inform and enrich the debates Americans are having right now about important educational and social issues. The words I just used—"professionals" and "practicing educational psychologists"—become important if we are to think about educational psychology as a policy science. The term science, of course, is used in its most generic way, meaning the study of the physical and social world using methods of systematic observation, both qualitative and quantitative. However it might actually be better to think of policy work as less about science than it is about argument, a not-unrelated concept, and familiar to those who understand evaluation theory. In fact, evaluation theory and policy research have important similarities, in that neither operates outside a particular social context, neither is an exercise in free inquiry, and neither is undertaken by researchers who would claim to be independent seekers of universal knowledge. Because of this, evaluative research and policy research both operate within political intentions, actions, and consequences (Smith, in press). So if one has as a definition of science as something like "doing your darndest with your mind," then certainly policy research and evaluative research are scientific. But those who believe in more restrictive definitions of science may well wish to place both forms of research outside the realm of science. This issue is a complex one, and not discussed further here.

But let us come back to the terms "professionals" and "practicing educational psychologists." These are terms I never heard much about when I trained to become an educational psychologist. No one that trained me informed me that I was to be joining a *professional* *group*, such as is done in school psychology, counseling psychology or clinical psychology. Instead, I was to be joining a *discipline*, psychology, though I was clearly to be a marginalized member of that discipline because I had chosen an applied area, education. Fortunately, since the publication of *Pasteur’s Quadrant* (Stokes, 1997), the relative importance of contributions from applied and basic sciences has been reassessed, and it is now accepted that such a dichotomy is silly. Distinctions about quality and the merit of applied versus basic sciences for advancement of a field, or even advancement of the human condition, now exist primarily in the heads of narrow-minded turf protectors and academic snobs. The acceptance of *Pasteur’s Quadrant*by the scientific community provided a long sought after legitimacy for educational psychologists as social scientists with strongly applied interests. But the principles in that book did not touch the issue of whether we are a *profession* or not. And I’d like to address that issue before ending this essay.

I start by asking what it means to be a professional, as opposed to being a member of a discipline. Let us consider educational psychology in light of six "commonplaces" which our fellow educational psychologist Lee Shulman (1998) has proposed are associated with professions:

**Shulman's Six Commonplaces of a Profession**

1. *Service* to society, implying some kind of ethical and moral commitment to clients.

2. A body of *scholarly knowledge* that forms the basis of the entitlement to practice.

3. Engagement in *practical action*, bringing knowledge to bear on issues of practice.

4. Working under conditions of *uncertainty*, caused by the different needs and the non-routine nature of the problems faced by those whom a professional serves, entailing judgment in applying knowledge.

5. Reliance on *experience* that has been reflected upon as the basis for professional actions, again due to the non-routine nature of the problems of practice

6. A *professional community*, one that shares knowledge and develops professional standards.

The first of these common characteristics is *service* to society, implying some kind of ethical and moral commitment to clients—say teachers and other school personnel. Second, a profession has a body of *scholarly knowledge*. It is deep familiarity with that body of knowledge that forms the basis of the entitlement to practice one’s profession. Professionals also engage in *practical action*. That is, professionals need to bring their knowledge to bear on issues of practice. A fourth common characteristic of a profession is that it works with *uncertainty,* a condition caused by the different needs and the non-routine nature of the problems faced by those whom a professional serves. Thus professionals must develop judgment in applying the knowledge they possess. A fifth commonplace is the importance of *experience* in a profession. Because the non-routine nature of the problems of practice cannot be solved or ameliorated on the basis of packaged, off-the-shelf solutions, experience that has been reflected upon becomes the basis for professional actions. The final commonplace is that of a *professional community*, a group of fellow professionals who share knowledge and develop professional standards.

Do we as educational psychologists meet the six criteria for a profession? I believe that we do. Do we serve society—teachers, administrators, board members, students? Many of us do. Most of us want our ideas to make a difference in the lives of educators and we write for these individuals as often as we write for ourselves. Most of us have at our core a moral commitment to the betterment of the educational system. Our founding father, E. L. Thorndike (1910), in the preface to the very first edition of the *Journal of Educational Psychology,* said that the field of educational psychology would solve all the problems of education in America. While just a wee bit overly-optimistic, Thorndike clearly recognized service as part of our scientific work.

Do we have a shared body of scholarly knowledge? We do! We have as a discipline inside the social sciences developed and adopted *findings,* *concepts*, *principles*, *technology*, and *theories* about instruction. By *findings*in educational research, I mean individual pieces of replicable data from the research community that may not always be well embedded in elaborate theory, but are useful in addressing discrete questions of educational practice. For example, we have a coherent set of findings about retention in grade that is not embedded in, nor greatly influenced by, any grand theory. We have replicable findings about the use of advance organizers, the provision of academic feedback to students, the use of higher-order questions in recitations, the provision of verbal markers of importance in lectures, and the use of student summaries at the end of lessons. We also now know a great deal about the effects of small class-size on learning and we have literature on the power of project-based methods of teaching, the positive effects associated with cross-age tutoring, and so forth. The theoretical ties associated with these findings are not always obvious and sometimes seem to be forced. But their empirical status cannot be questioned; each finding has been replicated numerous times.

By *concepts* in educational psychology I mean the terms and ideas that help us label and identify aspects of classrooms and schools in order to render them more understandable. These concepts are developed from both analytic and empirical work. They are used to describe phenomena that might not be attended to as readily, if we could not name and describe them. Research in educational psychology has given us such rich and useful concepts as curriculum alignment, academic learning time, withitness, grade surety, buggy algorithm, multiple intelligences, zone of proximal development, accommodation and assimilation, authentic assessment, portfolio assessment, situativity, constructivist learning, legitimate peripheral participation, propositional and procedural knowledge, and so forth. With such concepts, professionals can transform the apparent complexity of classroom teaching into something more understandable, more predictable, and more controllable. In a sense, *it is these concepts that give us the primary entitlement to practice as professionals*, for non-professionals have no such rich vocabulary to describe what they encounter. It is this special language about educational phenomena, this vocabulary of educational psychology, that makes us so valuable to policy makers and other non-professionals concerned about education.

The elaboration of these ideas from research often takes the form of *principles*. Principles are two (or more) concepts linked together in a causal relationship. One set of principles that guides effective teachers was put forth by educational psychologist Jere Brophy (1999). Among others, he states that effective teachers make use of:

**The Principle of Opportunity to Learn:** Students learn more when most of the available time is allocated to curriculum related activities, and the classroom management system emphasizes maintaining students’ engagement in those activities.

**The Principle of Establishing a Learning Orientation:** Teachers can prepare students for learning by providing an initial structure to clarify intended outcomes and cue desired learning strategies.

**The Principle of Coherent Content:** To facilitate meaningful learning and retention, content is explained clearly and developed with emphasis on structure and connections.

**The Principle of Thoughtful Discourse:** Questions are planned to engage students in sustained discourse structured around powerful ideas.

**The Principle of Strategy Teaching:**The teacher models and instructs students in strategies for learning and self-regulation.

Mature scientific fields and professions have generally agreed upon principles of great economy and power, as we do.

By *technology* for teaching and learning I mean we have systems of instruction like cooperative learning as designed and tested by Slavin, Webb, the Johnson brothers, and others. Reciprocal teaching as designed and tested by Palincsar and Brown is another such technology, as is Missouri Mathematics, designed and tested by Good and Grouws. Then there are the well-verified claims about enhancement of achievement and attitudes toward schooling associated with cross-age and peer-tutoring projects. We have a rich literature on how to conduct project-based learning in science and the social studies. We have studied reading programs and whole school reforms, such as Success for All, as well as dual-language instructional methods. That is, there are many technological inventions that are concerned with teaching and learning, and these are technologies as much as is a new computer in the classroom.

By *theory* I mean something like the formal and mathematically specifiable model of school learning first proposed by John Carroll thirty years ago (Carroll, 1963). The broad characteristics of this model have been verified in over 300 empirical studies (Carroll, 1985), and by common sense as well. Other less well specified, but no less well-developed, theories exist. The contemporary constructivist model, a model of learning *and* motivation, with direct implications for curriculum, instruction and assessment of learning, is one such theory. We also have Vygotskian theory on the social nature of knowledge, with its many implications for schooling. And we have mature and well verified theory surrounding achievement and attributions about achievement associated with competitive versus personal goal structures in classroom learning.

This is a highly abbreviated list of *findings, concepts, principles, technology, and theories,*but it demonstrates that the educational research community in general, and educational psychology in particular, has created technical knowledge and professional language to describe it, and that this specialized knowledge constitutes our entitlement to practice as professionals.

Do we engage in practical action? We do that too. Many of us develop and field test our ideas and technologies in school settings, develop assessments, do design experiments, consult, and evaluate. These are all indicators of the practical actions we take toward the goal of bettering the educational system.

Do we work under uncertainty? We do that every time we try to work in the schools instead of the laboratory. Schools have mobile student populations who thoroughly mess up our sampling plans; they have fire drills and bomb threats in the middle of our treatments and assessments; they have changing principals and substitute teachers who may or may not want us in their schools and classes. Schools also confound us with teacher absences or their passive-aggressive refusals to implement something as designed. They confound us also because inhabiting the schools are many desperately needy teachers and students who require our ministrations as fellow human beings, not as researchers who originally thought they were coming to the school to study them. I work in schools, and I can attest to the non-routine nature of work in schools.

With regard to points 5 and 6 of the commonplaces of a profession let me note that if you are going to work in schools, experience makes you better at what you do as a researcher, evaluator, assessor, program implementer, or data collector. I was quite naive when I first went to schools to do research, and I believe I am wiser and much more respectful of what they do there now. Reflecting upon experience has made me both a better researcher and a much less arrogant observer of schooling in America.

Finally, our findings, concepts, principles, technologies, and theories bind us together, creating a professional community. In addition, through meetings at APA and AERA, we are helped in developing our sense of belonging to a professional community.

Thus, in looking across these "commonplaces", it seems that we have all the qualifications to be a profession. But we generally do not think of ourselves that way, and perhaps we should. There is a difference, I think, in being members of a discipline and members of a professional community.

**Conclusion**

Let me now conclude this essay by asking two questions. First, is educational psychology a discipline? The answer to this first question is, of course we are! But there is another question we should answer as well. That is, are we also a profession? The answer to that is just as certain. We are, and we needn't choose between these two conceptions of who we are and what we do. We are both.

But accepting that we are also a profession has implications that are not apparent when we view ourselves as only being a discipline. Our professional status makes salient our obligations to serve those that support our work. I would argue that one important way so serve is to be engaged in the debates about educational policy currently raging at the national, state, and local levels. In those debates we should do what we do well. We should help people find out the facts, as best we can discern them. Educational psychologists are not as a group attracted to post-modern thinking. Therefore we are not afraid to say there is some reality out there that we can describe it in some credible way through methods of inquiry that work reasonably well, though of course, not perfectly. As Lee Cronbach reminded us many years ago, it is no mean achievement to pin down the contemporary facts of a situation.

We can serve education by writing and talking about the questions being asked by others, focusing particularly on whether data can even be obtained that is relevant to the questions asked. It is not always the case that empirical means can be employed to solve contentious problems of policy. We need to make clear that social scientists cannot always design empirical work to answer value-laden questions. We also need to serve educators by elaborating on the implications and limits of data, something not always understood by the people who make policy.

As a discipline we can hide from all this service to education and educators. We can stay outside the battles for our schools and our democracy—-for those two are inextricably linked together. But if we also think of educational psychology as a profession, then we have no such luxury. I would argue that engagement in policy is an obligation of educational psychologists who see themselves as professionals, and for those who serve also as professors, that obligation is intensified.

I hope that through our teaching at the doctoral level, we develop the next generation of educational psychologists to see that they must profess something, they must stand for something. I’d certainly like to see more educational psychologists take our collective skills and abilities, our collective intellect and our professional and personal values to the policy arena, and try to influence that world, at least a little. I'd like every educational psychologist to remember that we have not just the *disciplinary* obligation to do good science, but we also have the *professional*obligation to do good with our science.

**References**

Amrein, A. L. & Berliner, D. C. (2002). High–stakes Testing, Uncertainty, and Student Learning*. Education Policy Analysis Archives, 10*(18). On line at: http://epaa.asu.edu/epaa/v10n18.

Berliner, D. C. and Biddle, B. B. (1995). *The Manufactured Crisis: Myths, Fraud, and the Attack on America's Public Schools*. Reading, MA: Addison-Wesley.

Brophy, J. (1999). *Teaching.* Educational Practices Series-1. Brussels, Belgium: International Academy of Education, and Geneva, Switzerland: International Bureau of Education.

Brophy, J. (in press, 2003). In J. W. Guthrie (Ed*.), Encyclopedia of Education (2nd ed.)*. NY: Macmillan.

Carroll, J. B. (1963). A model of school learning. *Teachers College Record, 64*, 723-733.

Carroll, J. B. (1985). The model of school learning: Progress of an idea. In C. W. Fisher and David C. Berliner (Eds.), *Perspectives on instructional time*. NY: Longman.

Edelman, M. (1988). *Constructing the Political Spectacle*. Chicago, IL: University of Chicago Press.

Madaus, G. & Clarke, M. (2001). The adverse impact of high stakes testing on minority students: Evidence from one hundred years of test data. In Orfield, G., & Kornhaber, M. L. (Eds*.). Raising standards or raising barriers? Inequality and high–stakes testing in public education*. New York: The Century

National Commission on Excellence in Education (1983*). A nation at risk: The imperative for educational reform*. Washington, DC: The Commission: Superintendent of Documents, U.S. GPO distributor.

Rein, M. (1976). *Social science and public policy*. NY: Penguin.

Shulman, L. S. (1998). Theory, practice, and the education of professionals. *Elementary School Journal, 98*(5), 511-526.

Smith, M. L. (in press*). Political Spectacle and the Fate of American Schools*. NY: Routledge.

Stokes, D. E. (1997*). Pasteur’s’quadrant: Basic science and technological innovation*. Washington, D. C: The Brookings Institute.

Thorndike, E. L. (1910). The contribution of psychology to education. *Journal of Educational Psychology, 1*, 5-12.