

CHAPTER VII

Knowing Teaching from the Inside Out: Implications of Inquiry in Practice for Teacher Education

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For several years, I have been trying to learn about teaching and learning by teaching fifth grade mathematics in a public school classroom. The teaching and learning I have been doing occurs in an ordinary public school classroom, among one adult and many children, with constraints on time and space and other physical resources, with a responsibility to a diverse community to teach an agreed-upon curriculum, and learners who are compelled to participate. All of that is quite typical. But the teaching I have been doing is unconventional in that I am trying to make it possible for elementary school students to do different kinds of activities than those that are usually associated with learning in school, activities that will help them to understand and be able to use mathematics.

In the course of my teaching mathematics, I have been investigating pedagogical practices that are not common in American classrooms. I have also been trying to teach other teachers—new and experienced—about this kind of teaching. In my role as a teacher educator, I move from the inside of practice to the outside, attempting to communicate what I know to people who have not done the kind of teaching I have been working on. My work as a teacher informs my practice as a teacher educator in that it shapes what and how I teach teachers. It also offers a site for the common focus of others who seek to learn about teaching. By making my teaching public I can create a common text for analysis by students of pedagogy. And through the scholarly analysis I do of the practice, I create conceptual frames based in practice that may be useful to other teacher educators.

In this chapter, I explore the connections between inquiry into practice and teacher education. I investigate the problems that are encountered as one moves from knowing teaching inside the moment of a particular piece of classroom work to knowing teaching in communication with others, outside that context. This investigation continues a

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long-term effort to understand what it means to “know teaching.” Examining the contrast between how researchers thought about the problems in teaching and how practitioners thought as they confronted them, I have argued that it is often not possible simply to *use* knowledge that one brings into the classroom in the face of practical problems.¹ This does not mean that such knowledge is unnecessary, but it does mean that it is not sufficient. Teachers need to be able to manage situations in which new knowledge about what to do must be created on the spot. Teachers thus need to think in ways that enable them to create new knowledge while they work, not only as they plan what they will do beforehand or reflect on it afterward. This means that practitioners are simultaneously studying and doing teaching. What does this imply for relating inquiry in practice to teacher education? As I move out from studying what I know in and about teaching toward what I can (or what anyone can) teach someone else about this thinking in action, I recognize that knowledge of teaching has both a personal and a public character.

I have gained some insight into what it means to be in this place—somewhere between the inside and the outside—by analogy with where my fifth graders are as they study mathematics. The goal of their doing and studying mathematics in school is to learn about the relationship between creating knowledge and solving problems. They do this by creating knowledge and solving problems themselves and we reflect together on how this process goes. School learners, studying mathematics, and I, studying teaching, have two different kinds of audiences or communities of study with whom we communicate. One is local: kids talk to other kids and to their teacher as they work, asserting and giving evidence for what they know; I talk with my students’ other teachers about the common problems we face, and we make statements about what we know and what we do, critically evaluating how that knowledge works in practice. In these local settings, we can all see what one another is doing and how it changes as we learn new things. These communications can be a regular part of practice, and sometimes they are even required to get the work done. The other kind of communication we engage in is public. As a teacher, for example, I want parents, employers, and taxpayers to know what school learners in my classroom are learning without having to watch them do it. I want other teachers, policymakers, and researchers to know what I am learning about teaching without requiring them to visit my classroom. My students, too, need to represent what they know to others besides their teacher and their classmates; parents and future

teachers are among their “public.” In communicating between the personal and the public, one moves out from the work of the practice itself and into another kind of work. The public cannot simply “see” what we do and what we learn. For school learners, educators struggle to invent performance evaluations and portfolio assessments to address this problem, but deciding what goes into portfolios and what they mean are not simple matters.² Teachers who write about their own teaching labor to find a voice, a language, a genre, a way of talking and writing about what they know that is not simply borrowed from more specialized academic discourses.³ Why is it so hard?

When questions about knowing or understanding practice are juxtaposed with questions about communicating knowledge, we encounter a paradox: *if one learns to practice by creating knowledge in a practice, one knows something that non-practitioners do not know, but what is known cannot be represented to outsiders.* One way out of this paradox is to embrace “apprenticeship” models of education and to look to what “ordinary folks” do and know. In mathematics, for example, if we think of students’ parents and neighbors and teachers as folks who know what students should know, then interacting with such people around doing math problems will get them an appropriate education. The learner’s mathematical knowledge is created and used in practice and not represented for anyone outside the context of the problem. This approach has some merit, but avoids hard questions about equity and social mobility. How does one come to know aspects of a practice that are not part of one’s everyday social intercourse? When the simple apprenticeship model for learning practice is applied to learning teaching, we have “new” teachers learning teaching from “old” teachers, leaving little room for critical analysis or innovation. Teachers who work with student teachers do not usually think of themselves as teacher educators. They assume that some kind of “teacher education” already went on back in the college classroom, although they are skeptical about its value. Rarely do the teacher and the student teacher engage in an analysis of the strategies that are used to address problems of practice or together seek new knowledge about teaching.

Another way to circumvent the paradox of learning practice, and one that has been particularly common in K-12 schools, is to argue that what students need to learn is a better understanding of the extant products of practices like mathematics. By studying representations of these products, they would learn ideas that they might not encounter in everyday problem solving.⁴ The study of teaching, too, can be largely focused on the products of the inquiry of others and this is

how it is often conducted in universities. Articles in research journals are amalgamated into textbooks and made into assigned reading in “foundations” and “methods” courses. Obviously, these syntheses are far from representations of knowing in practice.

Developing a Discourse of Practice

I am going to argue for another alternative as a way out of the paradox: the development of a discourse of practice, wherein insiders talk to one another about the new ideas and practices that develop as they do what they do. I do not mean to countenance the familiar “make and take” workshop in which teachers come away with a new activity to use “on Monday.” Neither am I suggesting that teaching must be always new in the sense of reforming curricula or methods of instruction. Rather, I am proposing that teachers talk together to investigate the strategies they invent from moment to moment to manage the problems of practice as they come up anew in their ever-changing daily work, that they assess the appropriateness of various strategies in the context of classroom constraints, and that they generate alternative ways to make sense of what is happening in their classrooms. Such a discourse of practice could also be a medium whereby teachers communicate with those outside of teaching about teaching and bring different systems of interpretation to bear on their experience.⁵ It could serve as a medium of teacher education as well as a language of practical scholarship. In developing this argument, I am deliberately avoiding the term *teacher researcher*. Instead, I am claiming that such teaching and communication of ideas are the responsibility of teachers as developing practitioners. As a form of teacher education, being a teacher involves the study of—and communication about—practice. Abdicating the responsibility for the study of teaching to academic researchers means that the focus of their study, and the resulting knowledge, will not represent what it is that teachers know.

Creating a discourse of practice in teaching has been a persistent challenge in the United States. In 1975, Dan Lortie wrote:

The preparation of teachers does not seem to result in the analytic turn of mind one finds in other occupations whose members are trained in colleges and universities. . . . One hears little mention of the disciplines of observation, comparison, rules of inference, sampling, testing hypotheses through treatment and so forth. Scientific modes of reasoning and pedagogical practice

seem compartmentalized; I observed this even among science teachers. This intellectual segregation puzzles me; those in other kinds of “people work” (e.g. clinical psychology, psychiatry, social work) seem more inclined to connect clinical issues with scientific modes of thought. This separation is relevant because it militates against the development of an effective technical culture and because its absence means that conservative doctrines receive less factual challenge; each teacher is encouraged to have a personal version of teaching truth.⁶

In the past twenty years, many questions have been raised about the value of “the scientific method,” including whether there ever was such a method to begin with. But the problem that Lortie calls “intellectual segregation” persists in teaching as does the rarity of observation, comparison, rules of inference, sampling, and testing hypotheses through treatment. Not only are teachers isolated from one another in their speculations about what and how to teach, but they see the “scientific” parts of the work of teaching, as well as the education of new teachers, as someone else’s business. Although in some unusual settings, “action research” projects engage teachers in collaborative practical inquiry and reform, what Lortie calls “a personal version of teaching truth” exists alongside and often untouched by the “teaching truths” that are produced by university researchers.⁷ Whether by encouragement or the operation of some other kind of social forces, we still live in a teaching culture where it is the norm for “each teacher . . . to have a personal version of teaching truth.”

Americans have begun to recognize that this is not the norm among teachers in other societies, and to wonder what we can learn from their cultures of teaching. Looking toward Japan, for example, we find that communities of practice that educate new and experienced teachers are the norm, and have been for quite some time.⁸ The structure of professional teacher education in Japan is built on the assumption that teaching is a collaborative process rather than a private enterprise, and that it is improved through teachers’ collaborative inquiry, including peer planning of curriculum and instruction.⁹ Similarly in China, a decades-long tradition and a well-articulated structure has new and experienced teachers collaborating in inquiry and practical problem solving.¹⁰ The teachers who produce and communicate knowledge of teaching in these cultures are not a special brand of “teacher researchers.” They do what they do as part of their everyday practice.

Commenting on these traditions of teacher learning in practice in 1997, the Research Advisory Committee of the National Council of Teachers of Mathematics observed:

Because research and development are intimately linked in the Japanese teachers' activity, theory and practice evolve together. Over the long term, a community of teachers who develop in this way can collectively build a coherent body of explanations and perspectives on students' mathematical reasoning and ways of supporting its development . . . specific instructional practices emerge as justifiable refinements and modifications of prior practices. As a consequence of this intimate relationship between research and development in their activity, Japanese teachers have collectively established a network of explanations and perspectives that is grounded in the analysis of practice.¹¹

Although they are far from the national norm, communities of practice like those described here do exist in the United States, most often linked to the teaching of literacy. There are a few unusual examples of groups of teachers who meet over many years and study their own and others' practice to generate understanding and improvement.¹² These groups are sometimes associated with masters level courses in universities, but almost never institutionalized as part of the teachers' workload or organized to induct new teachers into the profession.

Problems in Teaching What One Knows of Practice

Can we make the kinds of discourse about practice that have been observed in these settings the norm in teaching in the United States? Why might it be hard to make it happen more broadly? I speculate on these matters from within the role of a teacher who is also a teacher educator. My imagination for collaborative inquiry into practice has been inspired by my participation in four unusual teacher education programs, first as a student and then as a faculty member.¹³ From those experiences, I draw the following analysis of the problems associated with joining inquiry into practice and teacher education in the United States.

THE PROBLEM OF NOT-SHARED LANGUAGE

In order to study teaching and teach it to others, I have had to learn more than how to teach. I have needed to invent and learn multiple discourses. Communication about any subject usually occurs within the boundaries of a discourse community. This community shares a sense of the meaning of the terms it uses to talk about common experiences, and it also shares standards about what is accepted as evidence for assertions. To belong to such a community, one makes a tacit agreement to use its syntax and semantics. Developing a voice with which

one can speak about teaching from the inside out means accepting multiple standards about what counts as justification for the statements one wishes to assert, and it raises difficult questions about how one's audience "takes" what is being asserted.¹⁴ As I talk with other mathematics teachers who are teaching (as I do) by engaging students in mathematical activity, we assume a certain level of both mathematical and pedagogical "shared understanding." We do not always agree, but when we argue about the nature of practice, we do it within a set of common assumptions. Going out from that group to teachers with less mathematical sophistication or teachers who teach in more conventional ways. I have to figure out how to say what I want to say about my teaching in terms that respect both their knowledge and my own.

When I go out of my classroom to talk with prospective teachers, the place we are most likely to meet is the college classroom. In that setting, I need to speak about what I know in still a different language. And speaking about teaching to my fellow faculty members requires yet another kind of language, with different terms for what is going on in the classroom and different standards for supporting assertions. Parents, school board members, policymakers—all of these groups have one or another kind of interest in learning about the kind of practice I know about, and each has a different discourse that I need to learn if I am to communicate with them.

THE PROBLEM OF AUTHORITY

That some people are teachers and others are learners implies that some people know something that other people do not. We commonly refer to those who know more as "authorities" on a given matter. If we want to learn about a practice, how would we find someone who is an authority? How does one become an authority on practice? What are the differences between knowing more about *how to do* teaching and knowing how to talk about teaching? These distinctions are endlessly debatable and run through every field of endeavor. In one scenario, authority derives from quantities of experience. Someone who has been teaching longer is considered to know more than someone who is just beginning. In another scenario, authority derives from the much more ephemeral status associated with being able to say what one says in a way that others find useful. People move from being teachers to giving workshops for teachers when they demonstrate this kind of authority. And then there is the authority that derives from education, which in our field is suspect. (In my experience, it has been harder to get a classroom teaching job with an Ed.D.

in Curriculum and Instruction than it was when I had a bachelor's degree and no education courses.)

Among teachers and school administrators, there is a deep and continuing ambivalence about looking to university researchers for knowledge that might be useful in practice. Teachers do not routinely read the scholarly journals where researchers report their findings—in fact they find such journals to be almost incomprehensible, and certainly not about the same endeavor in which they are engaged. At the same time, there is a kind of mystical reverence for this work, an admission that it must be done by people who are better educated, if not “smarter.”

As a teacher who has some certified, formal knowledge of teaching, I am the target of this ambivalence. I find myself in the position of trying to establish the authenticity of my ignorance and puzzlement in the face of many teaching problems while at the same time needing to justify why I am a professor and teacher educator. Part of my role as a teacher educator is to communicate to my fellow teachers and prospective teachers that teaching is a problematic and uncertain practice in which researchers' “answers” cannot simply be applied to practical questions.¹⁵ The questions that go through my mind, and are sometimes recited aloud by someone in my vicinity, go something like this, “If you are smart enough to be a professor of education, why can't you figure out how to get everyone in your class to understand fractions? or sit still through a 45-minute lesson? or participate civilly in a discussion with their peers?” I struggle to maintain my appreciation for the creation of teaching solutions that fit the unique character of each moment of practice while living with the question, “If this is not *universally* good teaching, why teach others about it?”

THE PROBLEM OF TELLING KNOWLEDGE AS THE SUBJECT OF ONE'S OWN STUDY

Practice is doing. The study of practice begins in the setting in which a particular practitioner acts. To study practice means that one cannot succeed by limiting the focus of one's inquiry, since it is the breadth and complexity of those actions across multiple settings that are being investigated. Yet, in the course of attempting to tell about any practice, even if the telling is in the first person, one necessarily formalizes what has been learned, leaving out some aspects of the experience and highlighting others. For any inquiry into practice, there are many possible stories to tell. For every story that is told, there are many possible meanings to interpret. Stories about practice

are not mirrors of experience: like all texts, they are constructed by the author with certain intentions in mind. When one is telling about oneself, no description seems adequate to the experience, and yet without description, what is learned remains private and unexamined. I have access to special knowledge as the teller of my own teaching stories, but I also am constrained by the limitations of any medium to express the multiplicity of what I know.

Although it is my aim to retain the richness and complexity of teaching when I am in the role of teacher educator, being in the middle of it makes me painfully aware of the impossibility of telling the whole story. Language, even supplemented by other media, is simply inadequate to capture my experience and knowledge of teaching practice. It is inadequate even to capture all the aspects of an event, to say nothing of representing the constellations of feelings and intentions imbedded in that event. That I can have more of a sense of the whole of what is going on than any observer is both a blessing and a curse.

Communicating between the Inside and the Outside of Practice

In an effort to address the problems I have described here, I invent stories about things that happen in my classroom. I do this to express something of the dramatic quality of what goes on, but also because narrative enables me to represent something that I think is universally important about teaching while maintaining the special qualities of knowledge created in the context of practice. The story serves as a medium for communicating about strategies invented in the moment without judging them to be ultimately correct. The stories raise universal questions about teaching, but they do not supply universal answers.

A story of teaching and learning is not a replay of what happened; it is a window on how events and relationships among the participants intertwine to produce a particular outcome. In stories of pedagogy, as in all stories, there is a narrative description of an event. But underlying this description, there is also the “state-breach-crisis-redress” cycle in which good or evil ultimately prevails.¹⁶ As the person who both experiences the crisis and is responsible for its redress, I have the capacity to identify elements of the work of teaching that are not available to observers.¹⁷ For example, the turning point in a piece I wrote about teaching my fifth graders the meaning of numbers written in decimal form is a moment when one of the students in the class announced (just as the lunch bell was about to ring!) that .0089 is a

negative number because it is less than zero, and several of his classmates chimed out in agreement.¹⁸ This was a definite breach in the pedagogical conversation from my point of view as the teacher, since I know that .0089 is *not* a negative number. The students' thinking in this matter was interesting and would be recognized as such by many observers. But for me it also signaled a crisis. The kind of teaching that I am trying to do respects students as sense-makers and so I could not simply "correct" this assertion. At the same time, I want to teach in ways that honor mathematical traditions and make it possible for my students to communicate with others who honor those traditions, so I could not accept the students' assertions as a curious invention. Neither could I simply label the student "wrong" until I found out why he said what he said. At the same time, I wanted to be a good citizen of the public school in which I was teaching, and the lunch servers were waiting for my class in the cafeteria.

Studying practice in this situation is not only a matter of studying the complexity of the problems I faced. Because of the ethical responsibilities in my relationship with my students, I needed not only to recognize the potential for study in this turn of events, but to do something about it.¹⁹ I was thrust into a domain of teaching practice that seems crucially important and valuable—trying to figure out why a ten-year-old might think that a number written as a decimal is less than zero and *at the same time* figuring out how I was going to convince him that this did not make sense while respecting him as a sense-maker, *and* doing all this without incurring the wrath of the lunchroom staff. Unlike researchers on children's thinking and learning, I did not create this problem to study it. I did what I did in order *to teach*.²⁰

FROM KNOWING TO COMMUNICATING: DISSOLVING THE DUALISM?

The stories that I tell about my teaching are created after the fact with the purpose of communicating fundamental elements of my practice. There are three activities that together produce the narrative inquiry: one is doing the practice, a second is examining it, and a third is constructing a story about it.²¹ Composing narratives from the perspective of practice for the purpose of teacher education cannot be one-way telling as in "announcing." Instead, it needs to be a two-way kind of storytelling: communicating one's experiences to others, checking on what is understood by the listener, and revising one's language to achieve some shared meaning. To help us understand the practice of teaching, the story needs not only to celebrate an event but

also to draw out its meaning to some community of listeners who seek to learn. This requires becoming familiar with and using the language and rules of discourse of each community with whom one would communicate and creating a “language of practice” that is comprehensible to each.

To succeed in bringing a discourse of practice into teacher education, we need to create a third kind of discourse that is neither a discourse for practitioners to talk with one another about their problems, nor a discourse that mimics the focus and detachment of academia. This third kind of discourse would be built from communication in which local negotiation about meaning among speakers with differing perspectives has the potential to create a new language of practice.²² It is not hard to imagine that creating and nurturing such a middle ground might improve both teaching and teacher learning. This somewhat romantic notion has some grounding in the social psychology of George Herbert Mead. Mead’s theory of the self includes the idea that the person is both an actor and an interpreter-of-action-in-society.²³ Mead worked in the tradition of pragmatism, bent on attacking the classic dualisms—individual versus social, mind versus body, nature versus culture, fact versus value, objective versus subjective—with a harmonizing logic. This tradition of thought has given me the inspiration to imagine that it is possible to be both a practitioner and a researcher without suffering from a paralyzing personality disorder. It suggests a framework in which one can be both the protagonist, causing teaching and learning to happen, and the storyteller, interpreting that action.

In Mead’s terms, the person’s identity emerges from the integration of “me” and “I.” “I” is the force that determines action, the will to make a unique imprint on the environment rather than simply reacting to it. “Me” is a member of various overlapping and non-overlapping social groups and understands action as it is variously interpreted by these groups. The “I” is continually involved as an agent in ongoing action, while the individual becomes aware of self through the reflective “me” which organizes the response of others to the “I.” What distinguishes Mead’s theory from other ways of thinking about persons-in-action that were popular when he was writing is the assertion that the person is a dynamic *integration* of the agentive “I” and the responsive “me.” This assumption of integration contrasts sharply with theories of the self that understand the person as a responding organism whose behavior is a reactive product of what presses upon him or her from the outside (society) or from the inside (psyche) or

both.²⁴ As a teacher who teaches others about teaching, I have been trying to know and tell about teaching both as the “I” who initiates action in the messy circumstances of practice and as the “me” who participates in different communities of discourse about this practice in order to understand it. The “me” part attempts to tell stories about the “I” part by describing what I do in terms that are familiar to various professional, academic and political communities.

COMMUNICATION AS AN ATTEMPT AT MUTUAL UNDERSTANDING

Perhaps it would be useful to introduce more rigorous ways of talking about what it is that is acquired from doing and studying practice. One result of studying a practice like mathematics or pedagogy is what might be called “my own understanding.” This belongs to the individual practitioner and serves to justify one’s actions to one’s self. Representations of such understanding might be recorded in a private journal. Another kind of result of studying practice might be what is commonly called “knowledge,” perhaps produced by individuals, but shored up by public argument supported by evidence. My understanding is assumed to be a product of private experience, contemplation, and reflection, while my knowledge is considered a product of intellectual work done according to a community’s accepted set of rules.

Neither “understanding” nor “knowledge” in the sense that I have caricatured them here seems to be the appropriate term for what I am trying to produce about the practice of teaching. Even though it puts me in a powerful position, I am unhappy with the claim that as a practitioner I have some kind of universally applicable “knowledge” of teaching, and everyone else who teaches also ought to have this knowledge. But I also am equally unhappy with calling what I have “my own understanding,” in the sense of saying that what I know is private and relevant only to the particular problems *I* face in *my* classroom.

Returning to Mead’s theory of the self, what seems to be at issue in this epistemological conundrum is integrating the “I” who initiates action and the “me” who tries to understand and name action in ways that are meaningful to others. The works of Lev Vygotsky and M. M. Bakhtin and the writing of their contemporary interpreters²⁵ make it possible to imagine a way out of this conundrum, to understand that it is in the attempt to communicate with members of different speech communities that the “unsatisfactory stalemate between individualistic subjectivity and abstract objectivism” can be resolved.²⁶ What gets created in the act of trying to communicate is a new understanding, neither particular to one’s private experience, nor entirely shaped by the

need for universal principles, but a tool to aid all of our attempts at *mutual* understanding. In Gary Saul Morson's interpretation of Bakhtin,

Speech is *inter*locution. Understanding is active, is responsive, is a process. The process of understanding includes the listener's identification of the speaker's apparent and concealed motives and of the responses that the speaker invites and hopes to forestall.²⁷

Let me try to give an example of how this helps me think about how I write or talk about my teaching. One of the things that I have been exploring in my teaching is organizing the daily agenda around multifaceted math problems instead of around a list of mathematical topics, intending the topics I want students to learn to emerge from students' work on the problems. Understanding this piece of my teaching puts me at a crossroads between the way "I" would describe what is going on and how I imagine that various speech communities might understand "me" trying to address this problem.

In an attempt to be true to both the "I" and the "me," I chose to title a paper about this aspect of my teaching "Covering the Curriculum, One Problem at a Time."²⁸ In my everyday work with fifth grade students, I know that just getting through the textbook is not an indication that anyone is learning anything. But as a public school teacher, I cannot only see learning mathematics in terms of constructing knowledge in the context of an attempt to make sense of a single problem; I also need to think in terms of which topics and procedures are taught and hopefully learned in which grade. If I were to speak to my fellow teachers in the same way that I speak to learning researchers about doing one problem at a time, they would be quick to point out that "it won't work in my classroom." By including the idea of "covering the curriculum" in my title, I am seeking to forestall this response, at least long enough to get my audience to listen to the "one problem at a time" part. I know, from working in a school everyday, that one cannot simply dismiss the idea of covering the curriculum, that the curriculum represents something like a treaty between the school and the community. Yet by including the phrase "one problem at a time" in my title, I seek to avoid researchers dismissing what I have to say on the basis of my being preoccupied with covering the curriculum. What I am trying to invent here is a way of talking about practice that stands back from practice but at the same time takes the point of view of practice.

Refining this kind of interlocution assumes a kind of localized exchange wherein meaning is negotiated and appropriated as such by the people who participate together in communicative events. It posits a level of study somewhere between the teacher as an individual thoughtful practitioner who keeps a private reflective journal and the teacher who views elements of practice in terms of the discourse structures of one or another public audience. In between, we might think of the teacher as collaborating with others in the thoughtful study of practice and creating a way of writing and talking about practice that satisfies *both* other practitioners and specialized non-practitioners who want to understand more of what teaching is all about.

Should Teacher Educators also Be Scholars of Practice?

This way of conceiving of teaching and the teacher's role is rare and unusual, but it is part of a tradition that was especially lively in this country at the time that John Dewey and his contemporaries were producing pedagogical scholarship and educating teachers. Fortunately for me, this tradition has survived alongside the more dominant trends to implement "teacherproof" curriculum and instructional activities and to replace teachers' engagement in intellectual practices with course requirements in the disciplines.²⁹

One of Dewey's contemporaries and one of my heroes is Lucy Sprague Mitchell. Mitchell was a teacher, a teacher educator, and a researcher on teaching. She is one of a remarkable collection of educational reformers who combined scholarship with practice in America in the early part of the twentieth century. She wrote a book about teaching geography in elementary school that is considered to be a classic among teachers who regard themselves as pedagogical designers. In this little book, Mitchell ties the practical with the intellectual in her observations about what teachers need to do and learn in order for them to bring children to the point of making and understanding geographical relationships. In the section on the teacher's role in this process, she says:

It becomes the first task of a teacher who would base her program with young children on the exploration of the environment to explore the environment herself. She must know how her community keeps house—how it gets its water, its coal, its electric power, its food, who are the workers that make the community function. She must know where the pipes in her room lead to, where the coal is kept in the school, when the meters are read and by whom;

she must know the geographic features which characterize her particular environment and strive constantly to see how they have conditioned the work of which she is a part and how they have been changed by that work.³⁰

The teacher is to explore ideas first hand as a basis for knowing what and how to teach. And there are two parts to this knowledge. One part is the exploration itself, actually finding out the geography of the setting in which one lives and works, finding out what constitutes the practice of geography. The other part is personalizing the findings of that exploration by reflecting on what the study of geography enables us to know about our own work and about how our thinking contributes to the design of our physical and intellectual environment. There is yet a third kind of knowledge required to connect all this to teaching. Mitchell goes on to say about the teacher's explorations of geography:

And when she knows all this and much, much more, she must keep most of it to herself! She does not gather information to become an encyclopedia, a peripatetic textbook. She gathers this information in order to place the children in strategic positions for making explorations . . .³¹

If I can take a leaf from Mitchell's book, I would define my study of teaching practice as an effort to "gather information" in order to place myself and those others who seek to learn about *teaching* in a "strategic position for making explorations."

Again, it is useful to make an analogy between teaching children—this time geography—and teaching teachers. Taking Mitchell's admonitions about first-hand exploration as the basis for teaching about the environment, we might paraphrase: "It becomes the first task of the *teacher educator* who would base her program with *teachers* on the exploration of *teaching practice* to explore *teaching practice* herself." We might agree that at least some parts of a teacher's education should entail the exploration of teaching practice. It would be simplistic, however, to conclude from this that teacher educators need to be school teachers. For one, it is not enough to be a teacher. One must be a teacher who studies practice, figuring out what one knows and how to represent that knowledge for others. For another, doing practice and exploring practice need not happen simultaneously. Mitchell does not suggest that teachers of geography become professional geographers, but that they find out what geographers *do*—what kinds of problems do they work on and how do they work on them? It may be possible, especially

with new technologies for capturing vivid and complex information about classroom work, to study practice without doing it oneself.³² Given some exploration of what practitioners do, teacher educators would then recast their own work to reflect an analysis of what it would take to learn that. How might we create environments in which teacher educators could learn about practice? And then how would we take the next step—using this information to place learners of teaching in strategic positions for making explorations?

NOTES

1. Lampert, Magdalene. "How Do Teachers Manage to Teach?: Perspectives on Problems in Practice." *Harvard Educational Review*, 55(2) (1995), 178-194.

2. The headline of an article on this project in *Education Week* is telling: "Even as Popularity Soars, Portfolios Encounter Roadblocks," Debra Viadero, April 5, 1995, p. 8 (Volume XIV, Number 28).

3. See Virginia Richardson, "Conducting Research on Practice," *Educational Researcher*, 23, 5 (June-July, 1994), pp. 5-10 and Marilyn Cochran-Smith and Susan Lytle, *Inside Outside: Teacher Research and Knowledge* (New York: Teachers College Press, 1993) for taxonomies of current approaches to teacher research. See Cathy Fleisher, *Composing Teacher-Research* (Albany: State University of New York Press, 1995) for an overview of scholarly arguments for the integration of teaching and research.

4. This argument has been hotly debated in mathematics education over several centuries. I have reviewed its implications in "Practices and Problems in Teaching Authentic Mathematics in School," in eds. F. Oser, A. Dick, and J. L. Patry, *Effective and Responsible Teaching: The New Synthesis*. (New York: Jossey-Bass, 1992), pp. 295-314.

5. Jennifer Gore and Ken Zeichner caution teachers against the limitations of simply reflecting on their own practice within a community of peers, suggesting that teacher's study of practice is enriched by the participation of a "critical friend." See J. Gore and K. Zeichner (1991), "Action Research and Reflective Teaching in Preservice Teacher Education: A Case Study in the US," *Teaching and Teacher Education*, 7, 2, 119-136. Joseph Schwab articulated a similar idea in his essay on "The Practical: Arts of the Eclectic," in *Science, Curriculum, and Liberal Education: Selected Essays*, Ian Westbury and Neil Wilkof, eds. (Chicago: University of Chicago Press, 1978), pp. 384-407.

6. Dan Lortie, *Schoolteacher* (Chicago: University of Chicago Press, 1975), p. 230.

7. In "Research on Teaching and Teacher Research: Issues that Divide," Marilyn Cochran-Smith and Susan Lytle examine the conceptual and practical differences in these two research traditions. (*Educational Researcher*, Vol. 19, No. 2, March 1990, pp. 2-11). The tradition of action research in education developed in the United Kingdom and has been taken up in some instances by teachers in the United States. See *International Action Research: A Casebook for Educational Reform*, ed. Sandra Hollingsworth (London: Falmer, 1997).

8. Ken Shimahara, *Learning to Teach in Two Cultures, Japan and the United States*. (New York: Garland, 1995).

9. Manabu Sato, "Japan," in H. Leavitt (Ed.), *Issues and Problems in Teacher Education: An International Handbook* (Westport, Conn.: Greenwood Press, 1992, pp. 156-168).

10. Lynne Paine and Liping Ma, "Teachers Working Together: A Dialogue on Organizational and Cultural Perspectives of Chinese Teachers," in *Teacher Collegiality and Professional Development: International Variation in Practice and Context*, ed. John Schwille, *International Journal of Educational Research*, Vol. 19, No. 8 (1993), pp. 675-698.

11. "Justification and Reform" by Research Advisory Committee of the National Council of Teachers of Mathematics in *Journal of Research in Mathematics Education*, 1996, vol. 27, no. 5, p. 518.

12. For examples, see Gail Burnaford, Joseph Fischer, and David Hobson, *Teachers Doing Research: Practical Possibilities*, NJ: Erlbaum, 1997; Joan Krater, Jane Zeni, and Nancy Devlin Cason, *Mirror Images: Teaching Writing in Black and White*, NH: Heinemann, 1996; "Teacher Professional Development as Situated Inquiry: A Case Study in Science Education," Center for the Development of Teaching Paper Series, Educational Development Center, Newton, MA, September 1997; and *Voices from Madison: Issues and Ideas from Inside Schools* (School Practitioners Speak Out on Teaching, Learning, and Knowing) Action Research Abstracts, 1990-1995.

13. I was prepared to be an elementary level teacher at The Prospect School in North Bennington, Vermont, and then taught teachers at Antioch Graduate School of Education; Buckingham, Browne, and Nichols School; and Michigan State University. The details of these experiences and how they influenced me as a teacher educator are described in Chapter 1 of Magdalene Lampert and Deborah Ball, *Investigating Teaching: New Pedagogies and New Technologies for Teacher Education*, New York: Teachers College Press (in press).

14. David R. Olson and Janet Astington, "Thinking about Thinking: Learning How to Take Statements and Hold Beliefs." *Educational Psychologist*, 28(1), 7-23 (1993).

15. There is, of course, an analogy here with what we want school learners to appreciate about problem solving in mathematics. See Magdalene Lampert, "When the Problem Is not the Question and the Solution Is not the Answer: Mathematical Knowing and Teaching." *American Educational Research Journal*, 27(1), 29-64 (1990).

16. See Jerome Bruner, *Actual Minds, Possible Worlds* (Cambridge: Harvard University Press, 1986) for a description of the nature of narrative inquiry.

17. Deborah Ball, "Special Values and Pitfalls of the First Person Perspective" (in press).

18. Magdalene Lampert, "Choosing and Using Mathematical Tools in Classroom Discourse" in Jere Brophy, ed., *Advances in Research on Teaching, Volume 1*, Greenwich, CT: JAI Press, pp. 223-264.

19. See Robert Welker, "Expertise and the Teacher as Expert: Rethinking a Questionable Metaphor," *American Educational Research Journal*, 28(1), pp. 19-35, Alan Thom, *Teaching as a Moral Craft*, and David K. Cohen, *Teaching: Practice and its Predicaments* (unpublished manuscript) for a discussion of the role of will in teacher action.

20. In contrast to others who have become teacher researchers in university settings (for example, David Wong, "Challenges Confronting the Researcher/Teacher: Conflicts of Purpose and Conduct," *Educational Researcher*, 24, 3, pp. 22-28, April, 1995), I did not decide to become a teacher in order to study problems that I was interested in as a scholar. I became a university researcher in order to better understand and communicate about a practice I had already been engaged in for more than ten years.

21. I do not wish to portray "doing" and "thinking" as separate, sequential activities. See Donald A. Schon on the role of both "reflection-in-action" and "reflection-on-action" in teaching and other practices (*The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books, 1983).

22. Joseph Schwab writes about such conversation in his series of essays about practice. See "The Practical: Arts of Eclectic," in *Science, Curriculum and Liberal Education, Selected Essays*, Ian Westbury and Neil Wilkof, eds. (Chicago: University of Chicago Press, 1978), pp. 322-364 for an analysis of the process of building such a discourse.

23. George Herbert Mead, *On Social Psychology* (Chicago, University of Chicago Press, 1956).

24. Herbert Blumer, "Sociological Implications of the thought of George Herbert Mead," in *School and Society: A Sociological Reader*; B. R. Cosin, ed. (London, Routledge and Kegan Paul, 1971). For a contemporary examination of the tensions between agency and structure in social theory, see Frederick Erickson, "Discourse Analysis as a Communication Channel: How feasible is a linkage between continental and Anglo-American approaches?" Proceedings of the First Annual Developments in Discourse Analysis Conference, Georgetown University, February 19, 1995 (in press).

25. See, for example, Lev Vygotsky, *Mind in Society: The Development of Higher Psychological Processes*, Cambridge: Harvard University Press, 1978; M. M. Bakhtin, *Speech Genres and Other Late Essays*, Austin: University of Texas Press, 1986; Michael Holquist, *Bakhtin and His World*, London: Routledge, 1990; Gary Saul Morson, "Who Speaks for Bakhtin?" and Caryl Emerson, "The Outer World and Inner Speech: Bakhtin, Vygotsky, and the Internalization of Language," in G. S. Morson (Ed.), *Bakhtin: Essays and Dialogues on His Work*, Chicago: University of Chicago Press, 1981, pp. 1-20, 21-40; James Wertsch (Ed.), *Culture, Communication, and Cognition: Vygotskian Perspectives*, Cambridge: Cambridge University Press, 1985.

26. See Caryl Emerson, *op cit*.

27. Morson, p. 6.

28. Research Interpretation Session, National Council of Teachers of Mathematics Annual National Conference, New Orleans, April 18, 1991.

29. See, for example, F. Michael Connelly and D. J. Clandinin, *Teachers as Curriculum Planners: Narratives of Experience*, New York: Teachers College Press, 1988; Miriam Ben Peretz, *The Teacher Curriculum Encounter: Freeing Teachers from the Tyranny of Texts*, Albany: SUNY Press, 1990.

30. Lucy Sprague Mitchell, *Young Geographers, 75th Anniversary Edition*. (New York: Bank Street College of Education, 1971, pp. 16-17, originally published, 1934).

31. *Ibid*, p.17.

32. I have written about this possibility with my colleague Deborah Ball in *Investigating Teaching: New Pedagogies and New Technologies for Teacher Education*, New York: Teachers College Press (forthcoming).