Will a Clinical Approach Make Education Research More Relevant for Practice?

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EDUCATIONAL RESEARCHER 2008; 37; 412
DOI: 10.3102/0013189X08325555

Relevance in Education Research

Will a Clinical Approach Make Education Research More Relevant for Practice?

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The way in which researchers view education differs fundamentally from the way in which teachers view education. These different outlooks are (partly) a consequence of the different work roles of researchers and teachers. This article explores the question of whether it is really inevitable that research and practice each establish different views of education. The author shows that the definition of the role of researchers draws heavily on a dualistic view that separates knowledge from skill and detaches human intellectual faculties from other human faculties. Although such dualistic notions are highly contested nowadays, they are institutionalized in the definition of the work of researchers and the purpose of research. The contribution of this article lies in the presentation of a unifying framework in which the views of teachers and researchers can be (at least partially) reconciled in the context of clinical research practice.

Keywords: professional development; research utilization; teacher knowledge

The research–practice gap is a source of concern for education schools. Experienced teachers who return to universities to obtain graduate degrees often complain that their new role as researcher highly emphasizes the value of abstract, intellectual activities, often in isolation from the more human component they encountered while teaching. The differences between the scholar's view of education and the practitioner's view of education often lead to frustration in which doctoral students challenge the whole research enterprise. *Educational Researcher* has often addressed this problem. In 2003, Labaree portrayed the peculiar problems that occur when experienced K–12 teachers enter American education schools to follow doctoral study. He concluded that the differences in worldviews between teachers and researchers cannot be eliminated, because they arise from irreducible differences in the nature of the work that teachers and researchers do. Shulman, Golde, Bueschel, and Garabedian (2006) proposed the development of two different education doctoral degrees with different goals: a research doctorate that prepares scholars of education and a practice doctorate that serves the needs of professional practice on the highest level while focusing only on applied research. The two different degrees imply a separation of practice-oriented research and fundamental research. A question that remains unanswered is whether and how these two kinds of research are related to one another. In a recent publication, Evans (2007) expressed his concern that a reduced view of practice will be the template for practice-oriented research. Knowledge of Shulman's work alone suffices to take away this fear. However, because it is unclear which view of education will be established in the scholarly section of education research, Evans's concerns are not totally unfounded. Although practice-oriented research is generally accepted, such research is often considered to not yield "hard" knowledge; therefore the more scholarly researchers are most likely to have the power to influence politicians. Status differences between practice-oriented research and scholarly research thus might result in policies that reinforce reduced views of education. This might result in a situation in which the separation continues between the views of scholars and practitioners of education. The fact that two different research degrees are proposed—a practice-oriented degree and a scholarly degree for "real" research—actually confirms the conclusion that Labaree drew earlier, namely, that the differences in the worldviews of practitioners and researchers are inevitable.

The relationship between researchers of education and teachers may differ from place to place. In the Netherlands, researchers and teachers form different professional groups that are trained at separate institutions. Teachers are educated at teacher training colleges. Researchers are trained at education schools that do not train teachers.[1] Although some researchers strongly advocate cooperation between researchers and teachers (Ten Dam, Volman, & Wardekker, 2005; Van den Akker, Gravemeijer, McKenny, & Nieveen, 2006; Wardekker, 2000) and although teacher training colleges are increasingly doing research as well, both professional groups have their own language and their own incentive structures (Vandenberghe, 2005).

This article addresses the question of whether it is indeed inevitable that research establish a view of education that differs from a practitioner's view. Starting from Polanyi's (1958, 1967) view of knowledge, this article presents a unifying framework that applies to any kind of scientific research. The framework stresses

Educational Researcher, Vol. 37, No. 7, pp. 412–420
DOI: 10.3102/0013189X08325555

the need for engagement with the object of study. In this view of science, appropriate research methods and a scholarly attitude are necessary for advancing insights, as is personal experience with the object of study.

The analysis below starts from four dichotomies, presented by Labaree (2003), that typify the world of research on one hand and the world of practice on the other. The concepts *analytical, intellectual, universal,* and *theoretical* adequately typify the world of research. The concepts *normative, personal, particular,* and *experiential* typify the world of practice. Drawing on Labaree, I describe why a transformation from the one world to the other was once considered to be necessary. Next, I explore the question of whether, given our present insights, the focus on one set of four concepts at the cost of their counterparts is indeed inevitable. My conclusion is that our present research practice and its accompanying definition of the work of researchers is not the only one conceivable, and that it is at least worthwhile to further discuss whether a clinical research practice would make education research more relevant for practice.

Transforming a Practitioner Into a Researcher

This section considers four transformations that according to Labaree are required if a practitioner is to become a successful researcher. These transformations were developed as part of a study on the problems encountered when experienced K–12 teachers entered doctoral programs in American education schools. I begin with a summary of Labaree's transformations, including his motivations for each of the transitions. In my analysis, I concentrate on the view of science that is implicitly assumed by the way in which the work of researchers and the purpose of research are defined in our research practice, and I consider the same transformations in light of an alternative view of science that is established in the clinical tradition in medical research.

From the Normative to the Analytical

The first transformation that teachers need to undergo when they become researchers is the transformation from the normative to the analytical. Labaree acknowledges that the moral factor is at the heart of the enterprise of teaching: Teachers are concerned with the question of what is good for students. Education research, however, is a distinctly more analytical practice that focuses on the process required to produce valid explanations of educational phenomena. To support this analytical work, scholars are freed from direct responsibility for the students in K–12 classrooms—this provides scholars with the time and space to focus their attention on what is going on in the educational process (and why), instead of having to focus on what to do in a particular classroom situation (and how to do it). The object of the research is not to fix a particular problem but to understand the nature of this problem more fully. The primary responsibility of scholars is to work through the intellectual component of educational problems. Labaree considers this to be a mandatory first step in any effort at educational improvement. The shift from teacher to educationist via a doctoral program, therefore, involves a major change in occupational role, which is reflected in part by the shift in emphasis from the normative to the analytical.

From the Personal to the Intellectual

The second transformation is from the personal to the intellectual. Labaree observes that fostering a relationship with students is a key component of the worldview that teachers bring to a doctoral study. In this sense, teaching is highly personal. The value of scholarship, however, lies not in relationships but in ideas. As a result, the measure of quality of a scholarly work is the quality of the ideas it expresses. Many former teachers see this as an oddly intellectualized perspective that has little or no connection to the flesh-and-blood world of teaching. Without a personal bond, teaching loses its meaning. Labaree, however, stresses the danger of devoting too much emphasis to the personal: This easily results in anti-intellectualism. He considers it to be immoral to act pedagogically only on the fact that "I care about my kids." He states, "We need people in education who have highly developed intellectual capacities for interpreting evidence, making arguments, and establishing valid grounds for action. Researchers are such people" (p. 19).

From the Particular to the Universal

The third transformation is from the particular to the universal. Most teachers entering the doctoral programs in Labaree's study had the experience that abstract rules do not provide significant classroom guidance. For teachers, education is framed by individual cases. Each case is different. The teacher's perspective is confined to one classroom, with one group of students; often teachers are not able to base their practices on a collective sense of what works in settings other than their own. Educational scholars, in contrast, emphasize the development of generalities that hold across cases. They usually aim to theorize.

Given the particularistic nature of teaching, Labaree believes that the reach for theory and generalizations may be exactly the additional perspective that teachers need. The idea is not to make universal claims but to provide a theoretical mirror that teachers can hold up to their own practices to see the ways that their problems are both similar to and different from those facing teachers in other settings. Theory thus allows access to a community of practice that is otherwise often denied by the tyranny of the self-contained classroom. Teachers in doctoral programs, however, see this differently. Labaree notes that selling the value of the universal to doctoral students is not easy.

From the Experiential to the Theoretical

The last transformation is from the experiential to the theoretical. One final characteristic of the teacher's worldview as observed by Labaree is the privileged position it assigns to professional experience. This position encourages teachers in doctoral programs to stay at arm's length from the theoretical and empirical literature. At any point in the discussion of an academic paper, the doctoral student can introduce an example from his or her practitioner experience that automatically invalidates any claim made by the author, no matter how much data the author presents or how effectively he or she makes the argument. In the worldview of teachers, only teachers have the expertise to speak with authority about teaching and the educational process. Although Labaree values the teacher's perspective, he believes it

is too narrow in scope. Outsiders, such as researchers, are in a better position to put the characteristics of the classroom in perspective by comparing numerous setting and actors and viewing them through the normalizing lens of theory. Convincing experienced teachers of the value of theory and of examining education as an outsider, however, is hard.

Research Question

The value of the transformation Labaree describes does not need much clarification. Who would argue against the usefulness of a good analysis or dispute the value of analysis for finding a real solution? Nobody would endorse a view of education as an emotional enterprise. The intellect must have a proper place. It is obvious that focusing on particular incidents in itself does not allow much professional growth. Teachers indeed need a professional language. Such a language captures generalities and exists from theories. A professional language would not only function as a mirror for individual teachers but also unite teachers into a much stronger professional group.

There is, however, another side of the coin. Although the value of the analytical, the intellectual, the universal, and the theoretical does not need further recommendation, it is also obvious that analysis is worthwhile only if it really enhances insights that are, in some way or another, good for students. Teaching, moreover, is relational, and the personality of the teacher is crucial, whether one likes it or not (Lampert, 1985; Palmer, 1998; Wubbels, den Brok, Veldman, & Tartwijk, 2006). This makes all cases unique. Capturing these cases in theoretical generalities is far from easy. If the scholarly language resulting from research were indeed appropriate to serve as a professional language for teachers, they would not complain about it. The complaints of doctoral students justify the question of whether the change of emphasis toward a scholarly view, while de-emphasizing the normative, the personal, the particular, and the experiential, implies the loss of something essential for education.

Labaree emphasized the value of the teacher's view. He tried to reconcile the different roles as much as he could, but at a certain point he conceded that the different worldviews could not be united completely because they arise from irreducible differences in the nature of the work that teachers and researchers do.

This implies that the problem of the clash might lie in the definition of the work that researchers (or teachers) are expected to do. Therefore, my analysis focuses on the work role of researchers and the purpose of research. I denote the way in which the work of researchers is presently defined and the present purpose of research with the term *our present research practice.* Assuming a situation in which several methods are accepted, the term *research practice* does not refer to research paradigms or to the design of studies. What justifies the present definition of the work of researchers, which endorses a dichotomy between researchers and practitioners? Is an alternative definition of the work of researchers possible that acknowledges the essence of scholarly and scientific values along with those of practice?

Analysis

The concepts analytical, intellectual, universal, and theoretical adequately typify the work of researchers as it is defined in our present research practice. As Labaree showed, the role of researchers in our present research practice is defined as merely intellectual labor. The purpose of research is defined as the producing of arguments and ideas, generalities and theories.

In what follows, I describe the tradition that justifies the present definition of the work of researchers. I conclude that the ideas that once justified the present definition of the work of researchers and its purpose are nowadays generally found to be obsolete. In finding an alternative view, I refer to the work of Michael Polanyi (1958, 1967), who did not address education research but who offered a generic theory of knowledge that applies to the human sciences as well as to the natural sciences. I used books and essays by Polanyi himself (see also Coulson & Rogers, 1968; Grene, 1969; Schwartz, 1974) and a book about Polanyi's view of scientific discovery (Gelwick, 1977). Drawing on my interpretation of Polanyi, I review Labaree's four dichotomies and develop a unifying framework that reconciles the work roles of researchers and practitioners.

The Legacy of Scientific Detachment

The tradition from which the present work role of researchers stems has not always been dominant. Dewey had a different view of the role of researchers. He did not place researchers outside schools or assign them with the task of producing only theory. In his worldview, it was unthinkable that one could achieve an understanding of the principles of school learning in settings far removed from schools (Lagemann, 2000). Dewey did not separate intellectual skills from practical skills. He acknowledged that knowledge is related to action (Biesta, Miedema, & Berding, 1997): It is by acting in a certain situation that one develops knowledge. Knowledge and skills are related. For this reason, Dewey established laboratory schools as a part of education schools. His work, however, focused largely on philosophical research; it remained unclear how education research could be an empirical study. The behaviorists who succeeded Dewey established not only an empirical research tradition per se but *a particular kind* of empirical tradition, namely, one that accorded a higher status to knowledge than to action. As Lagemann pointed out, they did not consider engagement with students of any empirical relevance but as something inferior that was below the status of researchers. They heavily relied on one of the fathers of modern science, René Descartes (1969, 1971), who believed that the intellectual was the highest human faculty. His famous aphorism "I think, therefore I am" demonstrated his preference of rational thinking over sense experience. He believed that man should allow himself to be persuaded only by the evidence of reason, not by the imagination or the senses. Descartes isolated the rational from other human faculties, assuming that other faculties were misleading, whereas the rational was not. He reduced reality to logical and mechanical proportions. True knowledge was always discursive (nonintuitive) knowledge. Skillful knowing—knowledge that is embodied by a person who has the skill to perform a certain action—did not occur in his dictionary. He postulated a separation between mind and body, assuming that knowledge can be severed from the people carrying this knowledge. The fathers of empiricism were also influential in constituting our present research practice. They focused on experiment

and observation, assuming that man could separate himself from his tradition. Both the rationalists and the empiricists believed in knowledge that is divorced from our personal contribution, from history, and from culture. Standing in this tradition, the behaviorists assumed that the task of the researcher was to describe the mechanisms of learning in discursive terms. After the laws of learning were discovered, teaching would be as easy as to follow the prescriptions of researchers. Behaviorists believed that the knowledge for making education work exists outside of people. They believed in scientific detachment.

The founders of our present research practice thus had certain ideas about what research should be and under which circumstances it would flourish. The four concepts, analytical, intellectual, universal and theoretical, reflect this tradition. Viewed from this perspective, it becomes understandable why all the (painful) transformations Labaree described were once considered to be necessary. Scholars of education were freed from direct responsibility for the students in the K–12 classrooms so that they had the time and space to do work on a higher level, namely, the intellectual level. Researchers were assigned a role outside of education because reference to their experience in the classroom was considered to be subjective. A view of practice via research instruments was considered to be more trustworthy than the personal interpretation of a teacher. For these reasons, it was once assumed that the attention of researchers should be focused on the rational aspects of education (or on the aspects that could be rationalized or at least rendered in language). The goal of all this analyzing and theorizing was knowledge that transcends the experience of our senses by embracing a vision of reality beyond the impression of our senses. It would result in objective knowledge that would enable us to control education, at least partly.

This view of knowledge is currently criticized. Developments in the natural sciences have shown that objective knowledge is beyond human reach. It is acknowledged that even in the natural sciences a lot of nondiscursive knowledge is involved (Feyerabend, 1975; Polanyi, 1958, 1967). Although it is certainly possible that human beings agree about a certain outlook, it is impossible that they are not personally involved in constituting this outlook (Eisner, 1992). These developments in the philosophy of science have had major consequences in education research. Alternative views of objectivity resulted in a variety of research paradigms (Shulman, 1997). Ethnographic and interpretive approaches emerged (Erickson, 1986). Narrative and biographic approaches softened the emphasis on rationality as the only trustworthy approach to reality (Carter, 1995; Doyle, 1997; Florio-Ruane, 1991; Kelchtermans, 1993). Researchers became interested in the knowledge that teachers construct while teaching (Verloop, 1992; Wardekker, 1989). Teacher research (Cochran-Smith & Lytle, 1990) and design research (Kelly, 2003) emerged. Nowadays, many researchers agree that each research paradigm reveals, as well as conceals, aspects of reality. Although the extent to which new conceptions of research are welcomed differs from place to place, it is clear that things have changed in the last decennia. The idea of scientific detachment is superseded, both in the theory of science and in the heads of many education researchers. As we have seen, however, our research practice still institutionalizes a separation of the intellectual from other human faculties and limits the view of the researcher to knowledge that can be written down in books and articles. Is this still tenable?

An Alternative View of the Transitions

In this section, I present an alternative view of Labaree's four dichotomies. The basis of the view is derived from Polanyi, an established leader in physical chemistry, who became a philosopher of science after the Second World War (Gelwick, 1977). He also graduated with a degree in medical studies—and this might account for the fact that he so often takes examples from medical studies. Central in his thought is the rejection of the philosophy of scientific detachment. Polanyi provides generic norms that apply both to the natural and to the human sciences. For this reason, the application of his view to education research might convince those who reject the distinction between hard and soft science (Feuer, Town, & Shavelson, 2002). In each subsection, I will relate Polanyi's general view of science to the established research practice in education and formulate implications for education research.

From the Normative to the Analytical

In education, as elsewhere, analysis is essential in trying to understand a problem. *Analysis* refers to the separation of a whole into particulars with a view to its examination and interpretation. Polanyi emphasized that the advancement of insights via the scientific enterprise does not occur by just any kind of analysis. Analysis is not only the act of breaking apart. Analysis is the art of being able to distinguish which particulars are relevant and integrating these particulars into a meaningful whole. Polanyi stressed that this process requires human skills, for only human beings are able to see things as meaningful. Scientific discovery thus requires human beings, who are able to see what is relevant. The advancement of science is not a matter of producing analyses per se, but is a matter of discovering ways of integrating particulars that are fruitful and interesting. The words *fruitful* and *meaningful* imply a normative direction. The assessment of what is fruitful, or true, or meaningful is always a matter of appraisal, Polanyi emphasized. Therefore, he considered "knowing" as a "responsible act."

Polanyi underlined that engagement with the object of study, not scientific detachment, is essential in research. In this way, researchers develop *tacit knowledge,* intuitions that precede the discovery of new insights. This knowledge enables them to distinguish particulars in a certain way, which brings them to new and probably more fruitful ways of integrating these particulars. In the natural sciences, Polanyi noticed that the idea of scientific detachment is hardly practiced: Researchers are generally passionately involved with their objects of study in their laboratories or elsewhere. In the human sciences, however, the idea of detachment has resulted in a situation that Polanyi considered to be harmful.

The important role that Polanyi granted to tacit knowledge does not outweigh that of formal research methods. Tacit knowledge guides, so to speak, the development of questions, methods, instruments, and testing procedures, but Polanyi stressed that all aspects of the formal research process finally involve researchers' personal powers of perceiving reality. Any testing procedure inevitably reflects the tacit tenets of the researchers' knowledge and the tradition in which they stand.

Testing plays an important role in assessing validity or truthfulness, but Polanyi emphasized that it should be placed in the context of learning to better understand a phenomenon rather than in the context of absolute confirmation. At the same time, he believed that the particulars of the situation establish contact with reality. Knowing is personal, but it is also about reality. The particulars of a situation do not speak for themselves, but they do speak.

> Many writers have observed, since Dewey taught it at the close of the last century, that, to some degree, we shape all knowledge in the way we know it. This appears to leave knowledge open to the whims of the observer. But the pursuit of science has shown us how even in the shaping of his own anticipations the knower is controlled by impersonal requirements. His acts are personal judgments exercised responsibly with a view to a reality with which he is seeking to establish contact. This holds for all seeking and finding of external truth. (Polanyi, 1967, p. 77)

In such a way, scientists gain knowledge that bears on reality. Here lies Polanyi's endorsement for empirical research. In his constellation of empirical research, however, the normative and the analytical belong together: The analytical derives its direction from the normative.

This view of analysis differs fundamentally from analysis as it occurs in our present research practice. Researchers of education generally work not with students but only with data about students. Their analysis is detached from responsibility for students. Their work role does not support engagement with the student, from which intuitions concerning relevant questions in education might arise, or which might bring researchers to ideas concerning to which aspects their instruments should attend. They operate at a distance, depending solely on the fragmented information that is collected via research instruments and that is disengaged from the whole picture. How can they see what is relevant? How can they assess whether a certain analysis is fruitful or if it bears on the reality of education? They do not have the opportunity for checking what their conclusions mean in the world of K–12 education.

It is not a lack of understanding of the value of analysis that lies at the heart of teachers' critiques of the transformation from the normative to the analytical. Rather, they object to an approach that does not question whether a certain analysis makes sense in the light of the normative mission of education. They object to a kind of analysis that is rated by intellectual and technical standards alone and has drifted away from real life in classrooms. They object to a kind of analysis that creates a fragmented view rather than contributing sufficiently to better understanding.

From the Personal to the Intellectual

Scholarship of education is directed toward the development of ideas; it is not about the management of relationships. Why not? In our present research practice, intellectual skills are considered to be of a higher level than relational skills. Here, Descartes' worldview resonates: The intellect is the only trustworthy human faculty, or at least the most trustworthy human faculty.

Polanyi developed a critique of the Cartesian view. He demonstrated that for knowing in general, the whole person, including the body, is necessary. Like Dewey, he rejected the separation between knowledge and skills. The passionate engagement of researchers with their objects of study results in the development of their bodily senses, he said. Therefore, knowledge cannot be separated from the person carrying the knowledge. Polanyi considered knowing as a way of *being.*

Modern social psychological insights confirm the embodied view of cognition. It is now accepted that knowing requires significant nonintellectual human faculties. Patients with brain damage that affects their emotional systems are drastically impaired in rational decision making, despite verbal abilities and tested intelligence that remain relatively unimpaired. Emotion, cognition, and motivation are inseparable (Damasio, 1994; Smith & Semin, 2004). Intelligence is not restricted to the intellectual. It has many factors, including personal factors (Gardner, 1983), and it requires a human body.

There seems to be, however, a kind of knowledge that is truly independent of interpretation by people. Although Polanyi viewed knowledge as personal—for the person represents the "intelligent centre" of knowing that is responsible for the interpretation—he conceded that the personal contribution in the act of knowing is less noticeable in some domains than in others. Interpretation by people simply seems to be unnecessary in some domains. In classical mechanics, for instance, the results of experiments are often unambiguous. An exact physical measurement can usually be carried out by a laboratory assistant without extensive apprenticeship. The results are unequivocal. In other domains, however, more experience is required. It takes years to train an expert medical diagnostician. In the development of the skills and connoisseurship involved in medical diagnosis, there is a much ampler personal contribution. Doctors literally have to train their bodily senses to become able to perceive certain symptoms. At the end of this process, not only do they "know"' about diagnosis but they "are" diagnosticians. A human science such as psychology or medicine, Polanyi believed, involves knowledge that requires much greater personal participation than the natural sciences do; it relies more heavily on personal skill and connoisseurship (Schwartz, 1974, p. 92).

Teacher educators have shown that the knowledge that makes education work cannot be severed from the persons carrying knowledge. More and more, they view teaching as a craft (Berliner, 2001; Brown & McIntyre, 1993; Kessels & Korthagen, 1996; McDonald, 1992) for which intense practical training is required to become accomplished. What formal knowledge has to contribute is unclear (Kennedy, 2006). Good education is constituted by people who embody certain kinds of knowledge and skills. Berliner compared teaching with complex practical activities such as violin playing or medical diagnosis. The knowledge that makes education work thus cannot just be learned from books but must also be constructed in practical situations by teachers personally (Kessels & Korthagen, 1996). Thus making education work is not simply a matter of scholarly analysis (although the intellect is important) but requires persons who at the same time embody certain skills.

Our present research practice favors the verbal aspects while marginalizing the skills. Let me take the idea of student-centered teaching to illustrate why this is problematic. All of us can imagine that student-centered teaching is a highly skillful enterprise.

A teacher who is able to teach in a student-centered way not only knows about the personality and background of students but also has acquired the skills to ingeniously integrate that knowledge into the process of teaching. Moreover, the skills needed to realize student-centered teaching are highly contextual. The ability to understand a group of students in one situation, after all, does not guarantee that one also understands a group of students in another situation. In the intellectual domain of research, however, it tends to be overlooked that student-centered teaching exists only if a person exists who has the required skills. Without the skill, the word is empty. Nevertheless, concepts such as student-centered teaching are used in the intellectual and generalized context of research, as if the command of the skill were equivalent to knowledge about the concept. This shows how theoretical knowledge tends to end in rhetoric if the domain of theory is separated from the domain of practice.

The transition from the personal to the intellectual thus isolates human intellectual qualities from other human qualities. It isolates knowledge from skills, thus making theoretical concepts empty. From this viewpoint, it becomes understandable why teachers experience their doctoral study as oddly intellectualized. This does not occur because teachers are anti-intellectual but because they rightfully believe that education and the improvement of education involves all human faculties, not only the intellectual.

From the Particular to the Universal

Although for teachers each case is different, researchers are expected to develop generalities that hold across cases. The attempt to discover similarities between different situations can yield perspectives that provide a theoretical mirror that individual teachers can use to put their own situations in perspective. In itself, the transition from the particular to the universal is necessary. Do most theories, however, indeed function as a mirror that provides new perspectives?

The theoretical perspectives developed by research owe much to what Eisner (1992) called *procedural objectivity.* Research instruments often function as tools to enforce a prescribed way of looking. Most generalities exist by the grace of such a reduced view. They are constructions that exist only because many aspects have been left out. Although researchers have a relative choice in the aspects they consider and how they consider them, teachers have to manage a practical situation, which often does not leave much choice for leaving out factors. Generalities in research seldom arise from the similarities between cases as perceived by responsible actors, but are top-down constructions.

Such constructions, moreover, are disseminated all over the world in international journals and magazines and are offered to researchers in quite different cultural situations where other education systems have been established. Researchers are required to base new studies on "the" insights from "the" literature. In smaller countries such as the Netherlands, only publications in international magazines count. Dutch researchers are therefore forced to abstract their publications from their local situations and tailor them to an international (often American or British) forum. At the same time, the enormous role of local context (Berliner, 2002) and the role of "superunknowns" is more and more emphasized (St. Clair, 2005). In spite of such critical views, our research practice institutionalizes the idea that research results can be transferred from one situation to the other.

Polanyi emphasized the importance of the development of connoisseurship in the human sciences. Via connoisseurship, medical research has invented a way for developing generalities that includes more particulars of the original cases. Diagnostic knowledge in medical research results from case knowledge. By seeing many individual cases, doctors develop personal (diagnostic) skills. Even though an unequivocal view of different diagnosticians is not guaranteed, the art of diagnosis plays an important role in research. Generalities in their clinical research practices are not simply top-down constructions that heavily rely on procedural objectivity; they also "flow upward from particular examples to broader, more universal generalizations" (Lakatos, paraphrased by Toulmin, 2001, p. 108).

Medical researchers, moreover, are usually engaged in applying medical insights to individual cases in their medical practice. They are equally concerned with generalities as with individual cases. Deviant cases are deliberately collected. Medical practitioners who become researchers, who may confront research findings with the deviant cases they have experienced, are not told that they need to transform their perspectives from the particular to the universal. On the contrary, deviant cases play a role in modifying the generalized insights. Because medical researchers work with patients, the ambiguities and the dynamics of patient care automatically have a place in the professional language.

If teachers protest against the transformation from the particular to the universal, they might do so because they sense that education research too easily jumps to generalities while leaving relevant particulars alone. As a result, many theories mirror a superficial perspective or a perspective that simply does not apply. The protests of teachers in doctoral programs are against theories that do not include enough relevant particulars—theories that simplify rather than clarify.

From the Experiential to the Theoretical

The last transformation Labaree mentions is actually implied in the preceding ones. In our present research practice, a transition from the experiential to the theoretical is considered to be necessary because it is assumed that outsiders, such as researchers, are in a better position to put the characteristics of the classroom in perspective by comparing them with those of other settings and actors and by viewing them through the normalizing lens of theory. Labaree noticed that teachers grant little authority to a researcher's view of teaching and learning. Teachers only acknowledge the expertise of teachers. Polanyi provides a perspective in which this might not be just some kind of narrow-mindedness. Connoisseurship is (again) the key.

The importance of connoisseurship (Eisner, 1991) for becoming an expert teacher has also been emphasized by teacher educators. The knowledge that teachers construct while becoming experts is case knowledge (Berliner, 2001). For novices, those who do not have such case knowledge, it is very hard to initiate and control the flow of activities in classrooms. The so-called practice shock (Koetsier & Wubbels, 1995; Stokking, Leenders, Jong, & Tartwijk, 2003) refers to a situation in which a novice is

not sufficiently able to perceive a classroom situation. As their practical experience grows, many novices (not all!) gradually learn how to look at a classroom situation in order to make it work. Berliner estimated that the time needed to develop practical expertise in teaching appears to be 5 years or more. The knowledge that teachers develop in the course of time cannot be severed from themselves as persons (Kessels & Korthagen, 1996). It is personal knowledge in the Polanyian sense.

Teacher educators have thus demonstrated that practical experience is necessary for the development of tools needed for perceiving an education situation. This goes for education just as it goes for medical diagnosis. Researchers in medicine need practical experience and continue working with patients during their research careers because this experience sharpens the perceptive tools necessary for research. This tradition, however, is still absent in education research.

Teachers who have undergone the (painful) process of becoming connoisseurs know that outsiders still have a novice's view of practice. Their mistrust of an outsider's view has reasons similar to those for mistrust of a diagnosis by somebody who has only read books containing descriptions of diseases. One would rightfully prefer the diagnosis of a properly trained doctor over such a bookish view!

When teachers do not trust outsiders, it might be because they know that for outsiders, large territories of education are inaccessible; outsiders have not developed the proper tools for understanding. Teachers resist the transition from the experiential to the theoretical because they feel that what is taken as an expert-scholarly view may actually be a construction by a detached novice rather than the view of a trained professional.

Our Present Research Practice Is Not Self-Evident

In clinical research practice, Labaree's four dichotomies are more integrated than in our present detached research practice. Medical research operates less in the realm of scientific detachment than does education research. In is not coincidental that the founder of medicine as a clinical study, the Dutch scientist Hermann Boerhaave, had serious problems with the Cartesian worldview. In the 17th century, while Boerhaave and his contemporaries had acquired medical degrees only by reading books, he founded an alternative research practice in which the academic hospital became important (Knoeff, 2002; Romein & Romein-Verschoor, 1977; Van Rijnberk, 1938).

In clinical research practice in medicine, researchers engage not only in research projects but also with individual patients, thus relating their research to the normative mission of medical studies. Medical research that produces only theories about health, without being engaged in healing people and without actions such as surgery, is unthinkable. By being personally engaged with patients, researchers develop the tacit knowledge (the connoisseurship) that is essential for deep scientific analysis. Researchers apply generalized insights to their own practices and find out how this process works in individual cases. In clinical research practice, thus, the role of the analytical, intellectual, universal, and theoretical is self-evident, but so too is the role of the normative, the personal, the particular, and the experiential. Without engagement with patients, without a practical concern for what is good for patients, and without a focus that is broader than theory alone, it is hard to conceive of success in medical studies.

Toward Clinical Research Practice

As mentioned before, Shulman et al. (2006) proposed the development of two different kinds of educational doctoral degrees, one geared to professional practice and practice-oriented research and the other to more fundamental research. The authors draw a comparison with the biomedical Ph.D. and the M.D. It is true that most medical researchers are engaged with patients, whereas most biomedical researchers are not engaged with patients. It is important, however, that biomedical researchers also are actually engaged with their objects of study. By working with cells, cell biologists develop tacit knowledge for understanding cells; microbiologists do the same with microbes. According to Polanyi, engagement with the object of study is essential for any kind of research. His framework does not leave room for studies in which researchers are engaged only with prefab fragments of the objects of study. The establishment of two degrees, one that supports engagement with the object of study while the other operates in detachment from the object of study, might temporarily avoid some frustration among doctoral students. From a Polanyian perspective, however, detachment from the object of study is not likely to contribute to the success of any kind of science. An integration of the two degrees into one clinical study is more promising.

What are the characteristics of clinical research practice? Clinical research practice differs from detached research practice because of the overlapping role of the researcher and the professional. Because of the overlap, researchers are automatically inclined to tailor their work to what serves the needs of the professional practice. Their professional skills (diagnostic skills, surgery, etc.), moreover, sustain research. Because such professional skills are believed to be necessary for research, doctors are required to have seen a prescribed number of patients before becoming researchers. During their research careers, researchers remain clinically active. A last difference between the two research practices is that the purpose of research in a clinical practice is not to produce theory but to produce a practice in which patients are cured. For this, theory is a means, but not the only means. At the same time, clinical research is real research, using a variety of methods, from randomized controlled trials to single case studies (Riehl, 2006).

Transferred to education, a clinical approach would result in a situation in which sufficient experience as a teacher is required for becoming a researcher and in which researchers remain active as teachers during their research careers. Because the overlap between the roles of researcher and teacher is already established in design research (in which researchers are active as teachers; Kelly, 2003) and teacher research (Cochran-Smith & Lytle, 1990, 1999), these kinds of research will occur naturally in clinical research practice. Other ways of looking, however, are possible. The large variety of research designs that are presently accepted are at a clinical researcher's disposal, from single case studies to larger scale quantitative designs, from philosophical research to design experiments. The engagement with students enables researchers to "feel" what good research questions are, to

feel what good instruments should attend to, to interpret data adequately, and to report about their studies in ways that acknowledge the dynamics of practice. In a clinical study, the wisdom of practice and the findings from research become integrated. Participants in clinical practice explore their own classrooms, but also a world larger than their own classrooms, and develop an understanding that is personal and at the same time shared in common. The results of this kind of research are likely to contribute to theories that are relevant to practice and to the development of a professional language. The concepts in this language are an upshot of the skills that are embodied by the professional community. A clinical research practice produces knowledge that is situated in professional activities.

In clinical education research practice, the proof of success is not whether arguments are sound or ideas are interesting but whether the arguments and ideas contribute to better practice. The overlap between the role of the researcher and the role of the teacher that is established by a clinical approach will help researchers understand the worldview of teachers and speak their language. It is worthwhile to further investigate whether a clinical approach would contribute to the relevance of education research.

Concluding Remarks

This analysis has shown that the differences in the educational views of teachers and researchers are indeed a result of the differences in work roles. Several things can be said against the separation of work roles. Because researchers are not engaged with students, they do not develop the appropriate tools for perceiving education. As a consequence, important aspects of education, for instance the relational aspect, remain beyond their scope. Theory is, at present, the only purpose of research. This is problematic because being a good educator is also a matter of skill. Our present research practice isolates the rational faculties from other human faculties, although it is clear that education needs more. The exclusive focus on knowledge that can be stored in books and articles, moreover, favors talk about skills over the personal development of skills. We have shown that the separation of work roles is a remnant of now contested ideas about scientific detachment. It is worthwhile to further consider whether the reforming of our present research practice into clinical study can contribute to the bridging of the research–practice gap and to the credibility of education research.

NOTE

[1]Motivated by the severe shortage of teachers, some education departments have recently started to integrate teacher training courses in their curricula as an option.

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Manuscript received April 28, 2008
Revision received July 9, 2008
Accepted July 10, 2008