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# Back to the Future: Directions for Research in Teaching and Teacher Education

**Pam Grossman**
*Stanford University*
**Morva McDonald**
*University of Washington*

*In this article, the authors examine two distinct but closely related fields, research on teaching and research on teacher education. Despite its roots in research on teaching, research in teacher education has developed in isolation both from mainstream research on teaching and from research on higher education and professional education. A stronger connection to research on teaching could inform the content of teacher education, while a stronger relationship to research on organizations and policy implementation could focus attention on the organizational contexts in which the work takes shape. The authors argue that for research in teacher education to move forward, it must reconnect with these fields to address the complexity of both teaching as a practice and the preparation of teachers.*

**KEYWORDS:** teacher education, research on teaching

As we look ahead to the future, it is always helpful to look back as well, remembering the history of our field and how that history influences where we find ourselves today. In this case, we examine two distinct but closely related fields, research on teaching and research on teacher education. While research on teaching has existed for the better part of a century, research on teacher education is still a relatively young field. The early handbooks

PAM GROSSMAN is a professor at the School of Education at Stanford University, 485 Lasuen Mall, Stanford, CA 94305-3096; e-mail: *pamg@stanford.edu*. Her areas of interest include teacher education, teacher knowledge, the teaching of English in secondary schools, and the teaching of practice in professional education.

MORVA MCDONALD is an assistant professor of curriculum and instruction and teacher education in the College of Education at the University of Washington, Box 353600, Seattle, WA 98195-3600; e-mail: *morva@u.washington.edu*. Her areas of interest include organizational aspects of teacher education, in particular, programmatic efforts to improve the preparation of teachers for diversity.

of research on teaching (Gage, 1963; Travers, 1974) did not even include chapters on teacher education; in fact, it was not until the third handbook (Lanier & Little, 1986) that the editors devoted a single chapter to research in teacher education. While research on teaching has reached adulthood, research in teacher education is still in its adolescence, in search of its distinctive identity. Despite its roots in research on teaching, research in teacher education has developed in curious isolation both from mainstream research on teaching and from research on higher education and professional education more generally. In fact, we argue that contemporary research in teacher education is somewhat of an orphan, connected to neither of its natural parents. A stronger connection to research on teaching could inform the content of teacher education—what gets taught and how—while a stronger relationship to research on organizations and policy implementation could focus attention on the organizational contexts in which the work takes shape. We argue that for research in teacher education to move forward, it must reconnect with these fields in an effort to address the complexity of both teaching as a practice and the preparation of teachers.

In the process of moving ahead, researchers in the area of teaching and teacher education will need to face some uncomfortable realities about our fields. First, more than a quarter of a century after Lortie (1975) depicted the lack of a common technical vocabulary with which to describe the work of teaching, the field of research on teaching still lacks powerful ways of parsing teaching that provide us with the analytic tools to describe, analyze, and improve teaching. Such a framework would help pinpoint both what is common to all examples of teaching, across grade levels and subject areas—such as the ability to engage and motivate learners—and what is more specific to both the subject matter and the context. While we would all agree that teaching photosynthesis to second graders differs from teaching quantum theory in graduate school, the field of research on teaching has not expended much effort trying to develop a better understanding of both what unites and what differentiates these instances of teaching. Second, over the past 50 years, research on teaching has moved from looking primarily at teacher characteristics—such as enthusiasm or authoritarianism—to looking at teaching behaviors, teacher decision making, teacher knowledge, and teacher reflection and dispositions. Each of these ways of looking at teaching, in turn, influenced how we think about preparing teachers. We argue that in the future, researchers need to move their attention beyond the cognitive demands of teaching, which have dominated the field for the past 20 years, to an expanded view of teaching that focuses on teaching as a practice that encompasses cognition, craft, and affect; the field of teacher education, in turn, must attend to preparing novices for the relational as well as the intellectual demands of teaching.

Third, teacher education exists at the nexus of multiple institutional and policy contexts; the top-down policies of the national accrediting agencies and the state, along with the local contexts of surrounding districts and labor markets shape the organization and practice of teacher

education. Understanding how teacher education interprets and responds to both state mandates and local labor markets requires an organizational perspective that has been missing in research on teacher education. In particular, we need to understand how the organization of higher education, in which teacher education generally resides, helps shape how teacher education programs respond to changing conditions and policy shifts. Understanding the growth of multiple pathways into teaching, particularly in large urban areas, requires just such an organizational perspective. Rather than focusing on comparisons of alternative and traditional programs—descriptions that have largely lost any common meaning—we argue that researchers should take advantage of the increasing variation in how teachers are prepared to look both at features of preparation across pathways that are the most powerful in preparing teachers as well as at how teacher educators can respond more nimbly to shifts in local labor markets. In this article, we examine each of these issues as a way to chart possible futures for both fields.

## Still Dreaming of a Common Language

In 1975, Dan Lortie famously observed that "teaching is not like crafts and professions, whose members talk in a language specific to them and their work" (p. 123) and argued that the absence of a "common technical vocabulary" limits the ability of novices to access a preexisting body of knowledge regarding teaching. More than 30 years later, the field still lacks a framework for teaching, with well-defined common terms for describing and analyzing teaching, and researchers, as well as novice teachers, suffer the consequences.[1]

Such a framework for teaching would require a careful parsing of the domain, an effort to identify the underlying grammar of practice, and the development of a common language for naming its constituent parts. A framework for teaching could identify the key components of teaching, both those that are common across grade levels, subject areas, students, and school context and those that are particular to specific subject matters, to specific kinds of learners, such as English-language learners, or to particular teaching contexts. A framework for the field would also need to be agnostic with respect to various models of teaching; it must work equally well to describe components common to both direct instruction and more inquiry-oriented teaching while offering the flexibility required to recognize the significant differences in how such components might be enacted. This effort to parse teaching would need to respect the difficulty of breaking apart such a complex system of activity and the dangers of doing irreparable harm to the integrity of the whole by making incisions at the wrong places.[2] Such a framework could inform both research on teaching and the improvement of professional education.[3]

Instructional explanation (cf. Leinhardt, 2004) might serve as one example of a component of teaching that is common across most instances of teaching.

At almost any grade level or subject area, teachers must provide explanations about particular content, whether it be explaining the processes of photosynthesis to second graders, the mysteries of division by zero in mathematics, the intricacies of an extended metaphor in *Beloved*, or the notion of causation in history. Despite its ubiquity, however, the field sorely lacks a commonly agreed upon definition of the features of an effective instructional explanation, although Leinhardt's work provides an excellent starting point. Another critical component of teaching practice that cuts across subject matters and grade levels might be teachers' responses to student thinking during interactive teaching. The work on instructional conversation (Leinhardt & Steele, 2005; Tharp & Gallimore, 1991), uptake (Nystrand, Gamoran, Kachur, & Prendergast, 1996), and revoicing (O'Connor & Michaels, 1993) points to the importance of how teachers take up, elaborate, and extend students' thinking during instruction. Yet once again, we lack a common vocabulary for describing the features of this component of practice, agreed-upon measures for capturing this element of teaching in research studies, or common pedagogies for helping novices learn to respond to student thinking in the moment.

Such components might be comparable to what clinical psychology refers to as the "common factors" of therapeutic practice. Such common factors, including most famously the ability to establish a therapeutic alliance with a client, have been shown to be critical to the success of any particular therapeutic approach—be it cognitive-behavioral therapy (cf. Beck, 1979) or a Rogerian client-centered approach (cf. Rogers, 1961). Research in clinical psychology suggests that if a therapeutic alliance exists, a number of approaches can be successful; without such an alliance in place, any approach will be less likely to work (Grencavage & Norcross, 1990; Horvath, 1988; Stevens, Hynan, & Allen, 2000). One direction for research on teaching would be to continue the search to identify such "common factors" in teaching that are critical for success.

In many ways, this may sound like going backward, as the process-product work of the 1970s was deeply engaged in just such a search for the common elements of teaching that correlated with student achievement gains. The lack of theoretical underpinnings, as well as the overly narrow conceptions of teaching, embedded in this line of work led to serious and justified critiques of the process-product paradigm. However, these critiques may have undermined the knowledge gained through this work, and the subsequent shift to explicating the more subject-specific aspects of teaching—generally ignored by process-product research—left this search unfinished. As Richardson (2002) suggests, it may be time to return to this search, with a deeper understanding of the complexity of teaching and more robust tools for capturing instructional practice.

In this search for common factors, both researchers and teacher educators need to take the relational aspects of teaching practice more seriously. Like clinical psychology, social work, clergy, and other "professions of human improvement" (Cohen, 2005), teaching depends rather centrally on the quality of relationship between the professional and clientele, in this

case, teacher and students (cf. Grossman et al., 2005). Noted scholars from David Hawkins (1974) and Joseph Schwab (1978) to Nel Noddings (2003) and Gloria Ladson-Billings (1994) have written of the centrality of relationships in teaching. Yet there is relatively little attention in the empirical research literature on how teachers establish pedagogical relationships with students and how they use these relationships to engage students in learning. And when we consult handbooks of what teachers need to know, this aspect of teaching seems remarkably undertheorized, often reduced to issues of classroom management or creating positive classroom environments (cf. Darling-Hammond & Bransford, 2006; Reynolds, 1989). Any framework of teaching practice should encompass these relational aspects of practice and identify the components of building and maintaining productive relationships with students. Such an understanding might be particularly useful in preparing teachers who can work effectively with students who differ from them in terms of race, ethnicity, socioeconomic status, and language.

A similar undertaking would need to occur within subject-specific domains. Perhaps the most progress in developing a framework for instruction has been made in the area of primary reading, where a hard-won consensus has begun to inform both research on practice and professional education (Snow, Burns, & Griffith, 2006). The language of explicit instruction of comprehension strategies, for example, has begun to provide the rudiments of a common vocabulary that is visible both in observation schemes and teacher logs (cf. Rowan, Camburn, & Correnti, 2004; Taylor, Pearson, Peterson, & Rodriguez, 2003) and in syllabi for reading methods courses. Similar frameworks are being developed in elementary mathematics as part of studies of mathematics instruction (cf. Kazemi, Lampert, & Ghousseini, 2007; Rowan, Harrison, & Hayes, 2004). Such frameworks help identify instructional routines that are specific to particular subject matter, such as posing problems in elementary mathematics (Franke, 2006) or prompting students to activate prior knowledge in reading instruction (cf. Taylor et al., 2003).

We need similarly well-developed and carefully specified explications of the features that matter for instruction of English learners or other students who have been underserved by our educational system. If we could agree on a set of discrete components of culturally responsive teaching, for example (cf. Ladson-Billings, 1994; Lee, 1995), we could then use that agreement to forge both better research on how instruction can help ameliorate the achievement gap and stronger teacher preparation. Again, such a framework would have to specify both what is common across grade levels and subject matters, such as developing academic language for English learners, for example, and what is unique to particular subject matter domains or developmental levels of students.

Such a framework for parsing teaching could dramatically transform both the field of research on teaching and the enterprise of teacher education. Currently, even the labels we currently use that we think we agree on can be interpreted differently in different studies, making it nearly impossible

to compare findings, as Hill (2005) and others have observed. The search for greater precision in our language for describing teaching will contribute to stronger connections across research communities.

Such a framework for parsing practice would also enable professional education to focus its efforts on developing teachers' ability to engage in such practices. In preservice teacher education, this might signal a move away from a curriculum focused on what teachers need to know to a curriculum focused on core practices, an idea we take up next.

## From Pedagogies of Investigation to Pedagogies of Enactment

Research on teaching has followed a heady trajectory—moving from investigations of teacher characteristics and behaviors to a focus on teacher cognition, beginning with the shift toward teaching as decision making to research on teacher knowledge and beliefs (cf. Shulman, 1986). Much of the research on teaching in the past two decades has focused on teachers' knowledge—of specific subject matter, of learners and learning, of ways to teach specific content—and teachers' beliefs. And while we would be the first to agree that these are critically important aspects of teaching, teaching, at its core, is an interactive, clinical practice, one that requires not just knowledge but craft and skill.

In an important chapter, Ball and Cohen (1999) argue for a model of professional education that is grounded in the practices of teaching. In part, such an effort requires the kind of framework described above. But taking such a conception of professional education seriously would also involve a serious rethinking of the activities of teacher education. While the field of teacher education has developed a number of pedagogical approaches that enable novices to study the complexity of teaching practice in some detail, including the use of case methods, video cases, and teacher inquiry projects (cf. Brophy, 2003; Grossman, 2005; Lampert & Ball, 1998), university-based teacher educators leave the development of pedagogical skill in the interactive aspects of teaching almost entirely to field experiences, the component of professional education over which we have the least control. We argue that research in teacher education needs to return to sustained inquiry about the clinical aspects of practice and how best to develop skilled practice—to add pedagogies of enactment to our existing repertoire of pedagogies of investigation.

Work on the development of expertise in various domains (cf. Ericsson, 2002, 2006) suggests that part of what differentiates experts is not only their ability to view a domain's underlying structure but their ability to engage in what Ericsson calls "deliberate practice." While experienced amateur musicians may practice as much as expert musicians, experts focus their practice to isolate and repeat the more challenging aspects of the task. More than a century ago, Dewey (1904/1965) made a similar argument about the role of field experience in teacher education; rather than provide extensive practice in typical classrooms, characteristic of apprenticeship models, he argued that teacher

preparation should create intensive, focused opportunities to experiment with aspects of practice and then learn from that experience, what he termed a laboratory approach. Such laboratory approaches might include simulations of important routines of teaching as well as carefully crafted and supervised opportunities to work with individual children or small groups.

Such opportunities to rehearse and develop discrete components of complex practice in settings of reduced complexity represent what Grossman and her colleagues (Grossman et al., 2005) have been calling "approximations of practice" in professional education. In their recent study of preparation programs across a number of helping professions, Grossman and her colleagues observed that teacher education gave novices multiple approximations of the preactive and reflective dimensions of teaching. We observed numerous opportunities for novices to engage in simulated planning—lesson planning, unit planning, planning for classroom management—and even more opportunities to practice the habit of reflection. What were missing were opportunities to practice elements of interactive teaching in settings of reduced complexity. To return to our previous example of instructional explanation, we saw few opportunities for novice teachers to experiment with explaining important concepts and then receive immediate feedback on their efforts.

In contrast, in clinical psychology, we observed many examples of role-plays in which students were asked to experiment with and practice particular therapeutic approaches. Students received specific feedback on how they were enacting these strategies and had the opportunity to "replay" (Horn, 2005) the interactions in order to integrate and learn from the feedsback. Similarly, in his study of physical therapists, Mike Rose (1999) described the kinds of "instructional interventions" the instructors use to help novices develop the ability to test for range of motion and other techniques. He argues that while such interventions reduce the authenticity of the experience, they are critical to helping novices develop the skills inherent in complex practice. Approximations of practice also enable teacher education to address the gap between the practices we advocate in teacher education and those that novices are likely to see in the typical school setting.

In many ways, the closest teacher education research has come to focusing on approximations of interactive practice has been the line of research on microteaching. Microteaching, while much maligned for its singular focus on discrete behaviors, nonetheless provided novices with opportunities to engage in simulations of interactive practice. The line of research on microteaching provided some valuable clues into the kinds of supports necessary to help novices learn from simulated practice, including the importance of feedback (cf. MacLeod, 1987).

In another instance of looking back to move forward, researchers in teacher education might invest in more deliberate and systematic experimentation with a variety of approximations of practice during teacher education courses. As in any simplification of practice required for approximations, the nature of the simplification matters. In microteaching, what was stripped away

may have been the very aspects of teaching that make it difficult.[4] The next generation of approximations of practice in teacher education might focus on instructional routines, such as guided reading or probing students' thinking in mathematics, that both are integral to the work of beginning teachers and have integrity as core components of instruction. As an example of such work, a group of mathematics educators are beginning to develop a framework of instructional routines for teaching elementary school mathematics that will become the basis of mathematics methods courses at several universities (Kazemi et al., 2007). In this work, the teacher educators have developed a set of instructional routines that novices will have multiple opportunities to enact in both coursework and field experiences.

Another example of this shift to research on the pedagogies of enactment might address the teaching of students who are culturally, linguistically, or racially diverse. Research on culturally relevant pedagogy suggests that teachers need to learn about the cultural knowledge of students (González, Moll, & Amantí, 2005) and learn to build upon that knowledge in classroom instruction. Carol Lee's (1995) work on cultural modeling is an outstanding example of such work. However, while myriad students in teacher education may have read about the value of investigating students' funds of knowledge, we suspect that many fewer have opportunities to practice both eliciting such knowledge from students and weaving such knowledge into classroom instruction in ways that bridge between the everyday and the academic. A research agenda that encompasses research on both teaching and teacher education might identify the critical features of forms of culturally relevant instruction that predict outcomes for students, including affective outcomes, such as engagement and feelings of connection to school, as well as learning outcomes and then develop ways to help novices to skillfully enact these practices in both coursework and the field.

Changing teacher preparation to more fully engage core practices and pedagogies of enactment requires a significant shift in the practice of teacher education. Although a handful of teacher educators are engaged in such work, creating and sustaining change on a larger scale requires an understanding of the multiple contexts in which teacher education takes place (cf., Honig, 2006; McLaughlin & Talbert, 1993; Wenger, 1998). We turn now to an examination of how a more organizational perspective on teacher education can help us understand the possibilities and limitations of efforts to change teacher education.

## From Independent Agencies to Situated Organizations

Prior to the late 1970s and early 1980s, the dominant paradigms of research on teaching paid little attention to how school contexts shaped how teachers taught (cf. Shulman, 1986). However, the past several decades of work on K–12 teaching and school reform highlight the importance of viewing teaching and learning as embedded in multiple contexts, such as the school, the district, the state, and national policies on teaching and learning

(e.g., McLaughlin & Talbert, 1993). Arguably, much of the current research on teacher education resembles the earlier stages of work on teaching and learning, in which contextual factors receive scant attention. Scholars increasingly argue, however, that teacher education programs also operate in embedded contexts, which include but are not limited to institutions of higher education, local school districts and labor markets, and state and national policies regarding teaching and teacher education and that understanding these multiple contexts is critical to any understanding of teacher preparation (Corrigan & Haberman, 1990; Roth, 1996; Tom, 1997; Zeichner, 2006). Zeichner (2006), for example, argues for an ecological approach to teacher education, in which he identifies various factors that shape teacher preparation, such as teacher candidate attributes, the policy context, the institutional context, and the teacher education program as well as the district context and the context of the schools and communities in which teachers teach.

In the following sections, we first discuss three different contexts that shape teacher education. Then we explore the case of alternative routes into teaching and look at how research that attended to these contexts might raise different sets of questions regarding alternative certification. Throughout, we argue that future research must broaden its scope to investigate teacher education as situated at the nexus of multiple contexts, foreground organizational aspects of teacher education, and apply theories such as organizational learning, institutional theory, or activity theory to help explain the organizational complexity of teacher education.

## Three Contexts of Teacher Education

As mentioned above, scholars identify various aspects of the context of teacher education. We highlight three in particular: national and state policies, institutional contexts, and local districts and labor markets. First, teacher education programs negotiate national and state policies regarding teaching and teacher education. Through standards for accreditation and requirements for licensure, states dictate the contours of teacher education programs. These standards and requirements can vary markedly across states, and as a result, the policy conditions under which teacher education programs prepare teachers also vary. For example, some states require programs to pay specific attention to teaching English-language learners, some offer certification for the middle years, and some specify the number of hours and credits required in content methods instruction, while others do not. Some states require alternative-route programs to adhere to a similar set of standards required of university-based programs, while others do not. Future research that more fully investigates the national and state conditions under which teacher education programs operate would provide the field with a more nuanced understanding of why programs prepare teachers in certain ways. For example, does a program address issues of teaching English-language learners because state and national accrediting agencies require it or because the program is responding to particular local demands and needs? Research that answers

these types of questions could identify the extent to which programs respond to external pressures from the state or from the local setting and ultimately identify levers for change within teacher education.

Second, institutional contexts, in particular, institutions of higher education, play a significant role in the implementation of teacher education.[5] The vast majority of teacher education programs, including what many regard as alternative programs, are situated within institutions of higher education (Boyd, Grossman, et al., 2007; Walsh & Jacobs, 2007). These programs operate within an institutional context that likely enables and constrains different aspects of the work of teacher education. University-wide conceptions of teacher education, resources provided to colleges of education, and the broad institutional mission all impact the organization and practice of teacher education (e.g., Goodlad, 1990; McDonald, 2007; Zeichner, 2000). Almost two decades ago, Goodlad (1990) found, in a study of 29 preservice, university-based teacher education programs, that the context of higher education strongly influenced the organization and practice of teacher education. For example, he found that the university atmosphere tended to promote academic and professional isolation among teacher educators, a separation between teacher education and arts and sciences curriculum, and that a decline in the importance of teaching in higher education lowered the status of teacher education. Implications from this work included the argument that for fundamental change to occur in teacher education, institutional leaders such as presidents and provosts need to be on board with reform efforts. Future research should extend Goodlad's work to provide a more in-depth understanding of specific features of institutional contexts that enable and/or inhibit the work of teacher education. Without an extensive body of research of this sort, the field is left guessing how to translate findings from one study in a particular context into lessons learned that other programs can adapt to their own institutional contexts.

Finally, teacher education programs are situated in local districts and labor markets. Many programs, although not all, prepare teachers to teach in the schools located in their very own backyards (Boyd, Lankford, Loeb, & Wyckoff, 2005; Plecki, Elfers, & Knapp, 2006). Research finds that teachers tend to teach close to where they were prepared and often choose to teach close to where they themselves attended high school (Boyd et al., 2005). As a result, teacher education programs generally prepare teachers for a local, rather than a national, labor market and potentially respond to and are shaped by subtleties within the local labor market. For example, in urban districts such as Los Angeles, New York City, and Oakland, alternative routes have taken hold in an effort to address local shortages in the supply of math, science, and special education teachers as well as teachers willing to teach in hard-to-staff schools. The arrival and longevity of these routes have ultimately changed the landscape of teacher education in these cities.

In addition to supply-and-demand issues, teacher education programs potentially respond to other needs within their local setting. For instance, some programs, albeit few, have changed course structures and curriculum

to better address the increasing number of English-language learners in the local districts and the need for teachers to be prepared to teach such students (Lucas & Grinberg, 2007).[6] Few studies on teacher education connect the relationship between the demands and needs of the local setting to the actual practice of teacher education. Future research that accounts for the local setting as a factor in the work of teacher education could provide important guides for how programs negotiate such demands.

Although the argument that teacher education programs are situated in an embedded context is not new, scant research views teacher education from this vantage point. Within the field of teacher education, relatively little research has investigated how particular features and practices of individual programs are shaped by the broader contexts of state and national policies, by local schools and labor market demands, and through institutional contexts of particular colleges and universities. The limited accounting of such contextual factors has made it difficult for the field to aggregate knowledge and difficult for teacher educators and policy makers to extrapolate lessons sensitive to local demands. Research that investigates teacher education programs from an organizational perspective will allow us to begin to address the relationship between these multiple contexts and teacher education practice. This perspective will require us to investigate new types of questions, to focus on broader levels of analysis, and to apply theoretical lenses rarely brought to bear on problems of teacher education.

## Organizational Perspectives: The Case of Alternative Routes

In exploring the case of alternative routes, we provide examples of the types of questions an organizational perspective would emphasize and illuminate. In considering this case, we suggest that research that accounts for policy contexts, institutional contexts, and local districts and labor markets will improve the field's knowledge and understanding of both the practice and organization of teacher education.

Alternative routes are now part of the broad landscape of teacher education and are major players in preparing teachers, alongside college recommending programs. Forty-seven states claim to have at least one alternative route, and approximately one out of every five teachers is prepared through such a pathway (Walsh & Jacobs, 2007). Multiple large-scale studies comparing alternative and university-based routes confirm that tremendous variation exists within and across pathways (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006; Humphrey & Wechsler, 2006; Kane, Rockoff, & Staiger, 2006; Zeichner & Conklin, 2005). Researchers in teacher education could use the existing variation in pathways as an opportunity to gain greater clarity on the contextual factors shaping teacher education as well as the relationship between those factors and program features.

One line of research might investigate how specific practices within teacher education differ across program type. This would first require the field of teacher education to develop a classification system for teacher

education programs. Continuing to classify and design research studies based on the gross categories of alternative or traditional, despite differences in state and local contexts and without consideration of similarities and differences in organizational structures and practices, will provide an inaccurate picture of teacher preparation. This continued muddying of the water makes it difficult to aggregate knowledge across research studies. Both in research and in practice, the field of teacher education must be more precise in its classification of programs.

Scholarship in higher education provides possible examples of how scholars in teacher education might design a classification system of teacher education. Researchers might consider developing a classification system much like the Carnegie classification of institutions of higher education (http://www.carnegiefoundation.org/classifications/). This classification system provides a framework for the diversity in institutions of higher education and provides research studies with a way to represent accurately participating institutions. Similarly, Zeichner and Conklin (in press) propose a framework of features of teacher education programs that could provide a basis for classifying programs. The dimensions they identify include social and institutional context; view of teaching, learning, and schooling; admissions process; curriculum and coursework; field experiences; instructional strategies; internal organizational features; and use of data. Much as we argued earlier about the need for a common language of practice to describe teaching, the field of teacher education also needs a more precise language to represent the variation in programs and pathways. Future research could play a pivotal role in capturing this variation and in exploring how differences in program features lead to differences for teachers and their students.

Another line of research might investigate how variation in teacher education reflects differences in state policy contexts. "Alternative" in Florida looks very different than "alternative" in New York, given state requirements. For example, researchers found that many of the alternative, or early entry, programs in New York City simply replicated many of the course requirements and content of college-recommending programs (Boyd, Grossman, et al., 2007). Teacher education in New York State is highly regulated, and the extent to which "alternative routes" vary from college-recommending programs is significantly limited by the state standards. In contrast, district-run alternative programs in Florida are under less stringent requirements and potentially vary greatly both from each other and from college-recommending programs (www.altcertflorida.org). To move the field forward, research on pathways into teaching must account for the state policy context and begin to make sense of how differences across states enable or inhibit teacher education practice.

The case of alternative routes also highlights the importance of illuminating the role of institutional context in research on teacher education. In certain states, like New York, institutions of higher education administer many of the alternative pathways into teaching (Boyd, Grossman, et al., 2007; Walsh & Jacobs, 2007). For example, Walsh and Jacobs (2007) found

that colleges and universities offered 34 of the 49 alternative routes in their study. Above, we recommended that one line of research should account for how state context shapes teacher education. In addition, however, future research could focus on the institutional context of teacher education to understand, for example, the organizational impact of incorporating alternative routes into colleges of education. In New York, the requirements that candidates in alternative-route programs like the New York City Teaching Fellows and Teach for America enroll in college-recommending programs have placed significant organizational demands on colleges and schools of education. This is likely the case in many other states with similar requirements. We could imagine a line of research in teacher education that examines the following kinds of questions: What kind of organizational demands does the incorporation of alternative routes place on colleges of education? How has the introduction of new pathways affected the resource capacity of existing programs? To what extent has the inclusion of alternative routes into colleges of education changed the curriculum? What university-based programs have been nimble enough to incorporate the differing needs of teachers enrolled in these alternative pathways? How does the location within higher education affect the implementation of the alternative routes? To what extent have the alternative routes been able to maintain their original vision? An organizational perspective would provide a more nuanced understanding of the conditions under which many programs operate. In the case of university-based programs, such a perspective would help identify features of programs that have been responsive to labor market demands and the emergence of alternative routes. Research that foregrounds the institutional context of higher education would help move us beyond ideological arguments that view university-based responses as solely steeped in individual unwillingness or resistance and consider it as situated within an institutional context that is often slow to change.

Future research needs to broaden not only the types of questions it asks to include organizational issues but also the kinds of theories it uses to explain the phenomenon under investigation. Take, for example, the question of why alternative routes resemble university-based programs. Theories of teacher learning often used for investigating issues in teacher education do not offer much explanatory power for understanding such organizational questions. Theories of organizational learning, institutional theory, or activity theory, for instance, provide possible ways of explaining why alternative-route programs do not look very alternative. For example, in their paper on the landscape of teacher education in New York City, Boyd, Grossman, and colleagues (2007) use concepts from institutional theory, in particular, the idea of organizational isomorphism (DiMaggio & Powell, 1983) to make sense of why programs, both university based and alternative, look similar at the level of structures. In contrast to the argument that the university-based teacher education establishment has co-opted alternative routes (Walsh & Jacobs, 2007), the use of institutional isomorphism to explain similarities in structure across programs highlights the pressure on teacher education programs to adhere to policy

requirements but also to appear legitimate by conforming to particular conceptions of teacher education. In this analysis, the concepts from organizational theory offer an explanation for such organizational phenomenon. This example illustrates that as the field of research on teacher education expands to investigate questions from an organizational perspective, it must also broaden its theoretical repertoire. Ultimately, researchers in the field need to develop a repertoire of theoretical perspectives that allow for multiple planes of analysis to remain in view (Rogoff, 1995).

Another line of research in teacher education might focus on a single labor market as the unit of analysis. To date, the research on alternative pathways into teaching has focused primarily on comparative questions of effectiveness. For many, such questions have focused on determining whether alternative-route programs are good or bad. An analysis that looks at a particular labor market, however, changes this question to address issues of quality in relative terms. In New York City, for example, a significant number of teachers entered teaching through temporary licensure; these teachers were largely replaced by New York City Teaching Fellows, a pool of teachers with much stronger academic qualifications (Boyd et al., 2006). Understanding the role of alternative routes in that labor market has to include an understanding of temporary licensure and the extent to which alternative routes strengthened teacher quality, particularly in high-poverty schools, in New York (Boyd, Lankford, Loeb, Rockoff, & Wyckoff, 2007).

In addition, researchers could use the existence of alternative routes as an opportunity to understand how a constellation of programs, including university based and alternative, potentially shifts the landscape of teacher education within a particular labor market (cf. Boyd, Grossman, et al., 2007). Such a perspective on the broader system of teacher preparation in a single geographic area can highlight both gaps and redundancies in preparation. For example, rather than each program in a specific area offering tiny programs in secondary math preparation, what if institutions specialized in specific areas of certification and consolidated resources and expertise? Perhaps such a strategy would better address the local labor-market demands as well as maximize the limited available resources. This type of research highlights the interrelationships among the multiple institutions and organizations that prepare teachers in any given labor market.

Viewing teacher education as sitting at the nexus of multiple contexts requires broadening the field of research on teacher education. Specifically, future research must foreground how contextual factors like national and state policies, institutional contexts, and local districts and labor markets play a role in the organization and practice of teacher education. As we argue initially, research from an organizational perspective must go hand in hand with research that looks in depth at the practice of teacher education, such as research that identifies common factors of practice and that investigates approximations of interactive practice. While these may be different directions for individual researchers to take, the field requires both lines of research in order to move forward.

## Building a Field

At times, the challenges facing research in teaching and teacher education seem daunting, even as the need for strong research in these areas has become more pressing. We suggest that for these fields to move forward, researchers in the fields of both teaching and teacher education will need to begin to act as if they were indeed a unified field of inquiry. Two critical attributes of a field include the existence of a common set of questions or concerns that unites its members and agreed-upon ways to generate new knowledge and to organize and aggregate existing knowledge. We argue that the future of both fields will depend, in large part, upon their progress in these areas.

To move forward, the fields of research on teaching and teacher education need to develop more programmatic research that addresses a set of critical questions over time as well as develop a range of common tools and approaches for making progress in answering those questions (cf. Cochran-Smith & Zeichner, 2005; Grossman, in press). One such tool would be the framework for parsing teaching and a common technical vocabulary for describing essential components, as described above. A common language can serve as one powerful tool in uniting a community of researchers and practitioners engaged in the improvement of teaching and teacher education. By literally speaking the same language, researchers can build on prior work and communicate their findings more powerfully both to each other and to practitioners.

But the field will require more than a common language to make progress. We also need to invest in the development of common research instruments for generating knowledge about teaching and teacher education. We need to develop common instruments for investigating teaching, including observation protocols of teaching that are both generic and subject specific (cf. Hamre & Pianta, 2001; Taylor et al., 2003), assessments of teachers' knowledge (cf. Hill, 2005), and survey items and teacher logs for capturing classroom practice in large-scale studies (cf. Borko, Stecher, & Kuffner, 2007; Rowan, Camburn, et al., 2004; Rowan, Harrison, & Hayes, 2004). Such common tools for research would help researchers make progress in aggregating knowledge about the impact of teaching approaches, just as the development of the electron microscope propelled new discoveries in cellular biology or tools for fluorescence-activated cell sorting enabled researchers to make progress in immunology and oncology.[7] Without such common tools for inquiry, the field is unlikely to develop.

A similar argument applies to research on teacher education (cf. Cochran-Smith & Zeichner, 2005). Just as in research on teaching, researchers in the area of teacher education need a common research agenda, a shared language, and more precise methodological and theoretical tools for addressing critical questions about how best to prepare teachers. Such research could focus both on burning policy issues regarding preparing teachers and on research that improves the actual practice of teacher education. In the area of policy, such questions might include: What particular features of teacher

education programs—across pathways—best prepare teachers to be effective in high-poverty urban schools? How can teacher education attract stronger candidates into teaching and then retain them, particularly in hard-to-staff schools and subjects? In the area of practice, researchers might agree to investigate questions such as how best to teach novices to enact complex practices in their classrooms, particularly when they may not see such practices in their field placements, or how to study the impact of particular pedagogical approaches, such as the use of video or other multimedia records of practice or of various approximations of practice (Grossman et al., 2005).

Given the abundance of small-scale case studies in research on teacher education, to gain traction in this field, researchers may also need to pool resources for more powerful research. This could mean identifying a set of common questions for researchers across similar institutions to work on as a way to develop more programmatic research. For example, rather than conducting small case studies of individual courses or individual programs, teacher educators could agree to develop the same well-specified approaches to preparing teachers across institutions and then use common metrics and instruments for assessing these interventions and their outcomes. For example, a number of teacher educators collaborated with the Carnegie Foundation for the Advancement of Teaching in developing and pilot-testing ways of using multimedia records of classroom practice in teacher education (Franke, Grossman, Hatch, Richert, & Schultz, 2006). The next step might be to develop common instruments for assessing what teacher candidates learn from these uses of multimedia materials and to aggregate the findings across sites. A second example might be the work going on in mathematics education (Kazemi et al., 2007). Such studies would contribute to the development of more common understandings of both practice and research in teacher education.[8]

Developing the field of research in teacher education will also require the coordination of such local inquiries with much broader investigations of teacher preparation that look at a variety of outcome measures. We need more large-scale studies of teacher education that can track the impact of programs over time while respecting the complexity of linking initial preparation to eventual outcomes such as student achievement or teacher retention. Such studies would also need to attend to the contexts of local labor markets and institutions of higher education, as mentioned above, as well as broaden the range of outcomes included in such studies.

Finally, progress in both fields will require researchers in these areas to reach outside their immediate communities, to look over their backyards to see and learn from what their neighbors are doing. In research on teaching, this would involve reconnecting researchers across multiple subject areas and grade levels with the more general field of research on teaching. One consequence of the subject-specific turn in research on teaching has been that most advances in investigations of practice have developed within specific subject matters and have been reported and taken up within these more subject-specific communities. For example, the work on uptake in classroom

discourse (Nystrand et al., 1996), developed within the field of English education, is rarely cited by researchers in math education, even as the work on discourse in math classrooms (cf. Lampert & Blunk, 1998) is generally overlooked by researchers in literacy. As a field of inquiry, we need to find ways to bridge these communities.

Researchers in teacher education face a similar challenge with regard to forging connections across communities defined by grade level and subject matter. For example, researchers who study issues related to preparing elementary literacy teachers generally belong to different associations and read different journals than those who study issues related to the preparation of secondary English teachers, and this is within a single school subject. But in order to do the kind of large-scale policy-oriented work discussed above, researchers in teacher education may need to reach outside their community altogether; to address problems of organizational complexity and labor markets will require connecting with sociologists, psychometricians, and economists to create partnerships to tackle these issues.

Moving forward will also involve reconnecting with the histories of our fields. Educational research in general tends to engage in a kind of historical amnesia, forgetting the past in the rush to invent the future. Current researchers on teaching might profitably revisit the work of earlier researchers, picking up lines of inquiry that were dropped, such as Doyle's (1983) work on student mediation of teaching or the early work on opportunity to learn (Berliner, 1975), just as researchers in teacher education interested in case materials might revisit the work of B. O. Smith (1980) on the use of protocols in teacher education. Part of what also defines a field is its common shared history. In charting the future, researchers might pause to remember and build upon the work of the past.

## Notes

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[1]Nowhere, perhaps, is this lack more visible than in efforts to develop instruments for measuring instruction. We have many schemes with which to capture teaching, to be sure, ranging from the competency checklists of the 1970s to teacher logs to structured observation instruments (cf. Porter, Youngs, & Odden, 2001; Rowan, Camburn, & Correnti, 2004; Shavelson, Webb, & Burstein, 1986), but each relies on different categories for capturing practice.

[2]We are indebted to Gaea Leinhardt for this point.

[3]At present, Magdalene Lampert's (2003) work on the problems of teaching provides one of the clearest examples of such a framework.

[4]We thank Gaea Leinhardt for this important observation.

[5]It is worth noting the many institutions of higher education actually began as teachers' colleges, so the histories of higher education and teacher education are inextricably linked.

[6]Even programs in states that export teachers must take such labor market realities into account as they consider how best to prepare teachers for other locales.

[7]We are indebted to Rebecca Grossman-Kahn for these examples.

[8]The Delta program at the Carnegie Foundation for the Advancement of Teaching, in which institutions began to develop common assessments for looking at outcomes of aspects of teacher education, is a potential prototype for such work.

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