Framing Teacher Preparation Research: An Overview of the Field, Part 1

Marilyn Cochran-Smith and Ana Maria Villegas

Abstract
This is the first of a two-part article that aims to chart the contemporary landscape of research on teacher preparation and certification. It is based on a review of more than 1,500 studies published between 2000 and 2012. Part 1 provides information about how the review was conducted and describes the theoretical/analytic framework the authors developed to guide the review. The framework combines ideas from the sociology of knowledge and research as social practice. This framework situates the research on teacher education within salient economic, intellectual, and demographic developments of the past half century and also examines the practices of researchers who are differently positioned from one another, have divergent purposes and audiences, and who work both inside and outside teacher education. Part 1 also analyzes the first of three major research programs—research on teacher preparation accountability, effectiveness, and policies, identifying strengths and weaknesses in this body of studies.

Keywords
teacher education preparation, teacher education research methodology, certification/licensure

Research on teacher preparation and certification is an emerging, complex, and multifaceted field, influenced by competing ideas about the purposes of research and the goals of education. This is the first of a two-part article about this field of research. It provides an overview of our comprehensive review of the landscape of the field (Cochran-Smith et al., in press), which is 1 of 25 lengthy chapters in the Handbook of Research on Teaching (Gitomer & Bell, in press), a project of the American Educational Research Association (AERA). Part 1 of this two-part article provides information about how our review was conducted and describes “Research on Teacher Preparation as Historically Situated Social Practice,” a theoretical/analytic framework we developed to guide the review. Part 1 also analyzes the first of the three major research programs we identified based on a massive review of published research, 2000 to 2012: (a) research on teacher preparation accountability, effectiveness, and policies; (b) research on teacher preparation for the knowledge society; and (c) research on teacher preparation for diversity and equity; each of these programs has multiple sub-categories of studies, which we refer to as clusters and lines of research. Part 2, which will appear in the next issue of JTE, discusses the second and third programs of research. It also suggests new directions for research based on lacunae in the literature and on our analysis of the strengths and weaknesses of the existing field and the possibilities for new programs and lines of research.

Teacher Preparation Research and Research on Teaching
Since 1963, AERA has published five handbooks of research on teaching with the fifth to be released in 2015. Each handbook, published 10 to 15 years after its predecessor, includes comprehensive reviews of major areas in the broad field of research on teaching, as defined by the editors. Widely disseminated to individual scholars and libraries, the handbooks are generally considered milestones in the chronicles of the field; they have substantially influenced how emerging and experienced researchers make sense of multiple areas of study. Over the years, these handbooks have handled research on teacher education in different ways. The first handbook (Gage, 1963) had no chapters directly related to teacher education or to teacher learning, teachers’ professional development, or policies related to preparation/certification. Rather, in keeping with the emerging paradigm of the time, the handbook focused primarily on research methods and the variables that influence teaching. The second handbook (Travers, 1973) included an entire chapter on teacher education research (Peck & Tucker, 1963) had no chapters directly related to teacher education or to teacher learning, teachers’ professional development, or policies related to preparation/certification. Rather, in keeping with the emerging paradigm of the time, the handbook focused primarily on research methods and the variables that influence teaching. The second handbook (Travers, 1973) included an entire chapter on teacher education research (Peck & Tucker,
1973), which focused on experimental studies about the training procedures that produced effective teaching behaviors in prospective teachers; the authors characterized this as a “quantum leap” forward. The third handbook (Wittrock, 1986) also included a chapter devoted to research on teacher education (Lanier & Little, 1986), but it contrasted starkly with the previous handbook. In fact, Lanier and Little’s chapter explicitly excluded experimental research on teacher training, asserting that it offered nothing that was not already well known. Instead, the chapter focused on teacher professionalism, synthesizing interdisciplinary research that spoke to the intractable problems of teacher education. In the fourth handbook (Richardson, 2001), which reflected the proliferation of paradigms related to research on teaching during the prior 15 years, there was, again, no chapter devoted to teacher education. Rather the research on teacher education was treated as one piece of the body of research on formal programs of teacher change (Richardson & Placier, 2001).

Our chapter in the fifth handbook, which is the basis of this two-part article, is devoted entirely to research on teacher education, as were chapters in the second and third handbooks. In contrast, however, our chapter, which reviews research on initial teacher preparation and certification in the United States and internationally, does not privilege some bodies of work and exclude others. Rather, although the review reflects our own positionality and interests as researchers, as all reviews do (Lather, 1999), it is deliberately inclusive of multiple—sometimes competing—research approaches and agendas. The intention of the chapter is to chart the contemporary landscape of what we refer to as the “sprawling field” of research on teacher preparation by identifying, analyzing, and critiquing its major programs. Our purpose in this two-part article is to provide for teacher educators a cohesive overview of this sprawling and uneven field, situating the research on teacher education within major developments of the past half century and examining the practices of researchers who are positioned quite differently from one another, have divergent purposes and audiences in mind, and who work both inside and outside of the daily work of teacher education. Their strikingly different programs of research are seldom considered together in one review, and there is little general understanding of how they relate to one another or the implications they have for practice and policy. Along these lines, Kennedy (1996) pointed out nearly two decades ago that primarily quantitative research on teacher education, intended to inform policy and policy makers, was often more familiar to skeptics and critics of teacher education, including economists and policy analysts, than to teacher educators themselves.

**Teacher Preparation Research as Historically Situated Social Practice**

To capture the untamed and uneven landscape of research on teacher preparation, we developed a two-part theoretical/analytical framework, which we titled “teacher preparation research as historically situated social practice.” The framework’s two parts are described below.

### The Larger Historical-Social Setting

The first part of the framework focuses on the larger social, political, and economic forces and resulting ideologies that have shaped education over the last 50 years or so. This approach is consistent with Mannheim’s (1936/1949) perspective on the intellectual project of the sociology of knowledge, which addressed relationships between the ideas of human beings and the historical and social contexts from which they emerged. In his classic text, Mannheim suggested that the task of the sociology of knowledge was “to analyze the relationship between knowledge and existence” (p. 237). In the book’s preface, Wirth summarized,

> The sociology of knowledge concerns itself not merely with the ideas and modes of thinking that happen to flourish, but with the whole social setting in which this occurs. This must necessarily take account of the factors that are responsible for the acceptance or the rejection of certain ideas by certain groups in society. (pp. xxix-xxx)

Figure 1 provides a graphic representation. Beginning with the base and reading upward, this figure emphasizes relationships among the larger historical context that has shaped almost every aspect of social life over the past 50 years, including formal education (bottom layer); emergent trends and ideas, which have had a major influence on teacher preparation practice and policy (middle layer); and the major programs of research that have developed (top layer). Below we take up each layer.

As Figure 1’s bottom layer suggests, current research on teacher preparation is located within the milieu of major economic, social, and political forces and the modes of thought that have become dominant over the past 50 years. In developed nations, the most fundamental development of this historical period was the shift from an industrial economy based on manufacturing and material goods to a knowledge-based economy that revolves around the production and distribution of goods and services related to information. This shift has given rise to new labor markets, new patterns of production and consumption, and worldwide mass migration. These have not only created new media and specialized flexible markets but have also brought unprecedented challenges and new conditions of social and cultural life (Apple, 2005; Luke, 2004).

In terms of education policy and practice in the United States and other developed countries, the shift to a global and competitive knowledge society has also been accompanied by a shift to neoliberal economics wherein individualism, free markets and private good(s) have taken precedence over other goals (Mehta, 2013). Although not inevitable, some critics now suggest that neoliberal perspectives have become nearly imperceptible as ideology in education policy and practice and are currently more likely to be understood simply as common
sense (Apple, 2005). This does not mean that there are no competing perspectives about educational purposes and research practices, but our point here is that the shift to a knowledge society with neoliberal economics as the dominant paradigm of education policy and practice comprises the larger historical and social context in which teacher preparation research, practice, and policy are currently situated. (Many scholars have provided in-depth analysis and critique of how these larger issues play out in education policy and politics and in other areas of social life, for example; Apple, 2005; Hursh, 2007; Luke, 2004; Mehta, 2013; Sleeter, 2009; Torres, 2009.)

Three trends related to teacher education. We use the word “trend” to refer to the far-reaching social, political, policy, ideological, demographic, and/or intellectual developments that are most relevant to teacher preparation. Over the past half century, three trends, which are consistent in differing ways with the shift to a knowledge society, converged and helped to shape the development of major programs of research. These trends are represented by the middle layer of Figure 1: unprecedented attention to teacher quality and accountability, changing conceptions of how people learn and what they need to know in a knowledge economy, and increasingly diverse student populations coupled with growing social and school inequality.

Unprecedented attention to teacher quality and accountability. As many analyses have indicated, the major shift from an industrial to a knowledge economy brought unparalleled attention to the quality of education systems, and in particular to teachers, who were presumed to be the primary makers of knowledge workers for the new economy (e.g., Furlong, Cochran-Smith, & Brennan, 2009; McKinsey & Company, 2007; OECD, 2005; World Bank, 2010). Many politicians, policy makers, and researchers came to agree that teachers were a critical influence (if not the single most important influence) on how, what, and how much students learned. Accordingly, many nations developed very high expectations for teachers, including teaching all students to world-class standards, serving as the linchpins in educational reform, and helping diminish social inequality. Internationally, the same message was conveyed in report after report: Teachers matter, not just in the classroom but in terms of a nation’s economy.

With regard to the United States, Spring (2011) referred collectively to the assumptions underlying A Nation at Risk (NAR; National Commission on Excellence in Education, 1983) and the string of related reports that accompanied and followed it as the “human capital paradigm” (p. 11), a non-partisan agenda that conceptualized schools as businesses preparing workers for other businesses. Along similar lines, Mehta (2013) suggested that a new “education policy paradigm” (p. 286) transformed American educational policy after NAR, based on several key tenets: educational success is the key to economic success, American schools are failing and need reform, teachers and schools—rather than social factors—are responsible for academic outcomes, and educational success should be measured by tests. These assumptions...
underlie the predominant neoliberal, market-based approach to education reform.

What this means for policy, practice, and research on teacher preparation is, as we note above, that in many parts of the world there has been unprecedented and politicized attention to teacher preparation/certification and the policies and accountability systems that govern them and measure their effectiveness (Cochran-Smith, Piazza, & Power, 2013; Furlong et al., 2009; Organization for Economic Cooperation and Development, 2005), which has consistently been coupled with outcomes-based accountability (Cuban, 2004). To a great extent, the discourse of outcomes has been normalized both inside the professional/university teacher education community and outside it. For example, in the United States, to compete successfully for Race to the Top funds, states were required to agree to develop accountability systems that linked data about student test scores with data about teachers with data about the preparation programs/pathways through which they entered teaching (Crowe, 2011). This outcomes emphasis has not simply been imposed on teacher preparation from the outside, however; it is also now clear within the teacher education profession itself, as reflected in new accreditation standards and emphases (Brabeck & Koch, 2013).

**Changing conceptions of how people learn and what they need to know.** Although alternatives to transmission views of learning existed long before the shift from industrial to knowledge economies, this economic transformation supported the ascent of such alternatives in the world of ideas. In developed countries, manufacturing jobs were automated or outsourced in increasing numbers during the 1970s and 1980s, and as the mix of available jobs began to change, schools were under pressure to adapt to the new economic reality (Blinder, 2009) by providing a new type of education that prepared all students—not just an elite few—to evaluate and use information, frame and solve problems, and collaborate with others to develop new ideas (OECD, 2005; World Bank, 2010).

Along with pressure for educational reform, alternative conceptions of how people learned gained the attention of the education community. Building on research from the learning sciences (Bransford, Derry, Berliner, & Hammerness, 2005; Resnick, 1987; Sawyer, 2006) and the anthropology and sociology of education (Heath, 1983/1999; Tharp & Gallimore, 1990), learning was conceptualized as a process of active construction wherein learners drew on prior knowledge and experiences—both individual and sociocultural—as they built new understandings. These new conceptions of learning, which had been making their way into education for more than 30 years, became the dominant mode of thinking within university-based teacher education.

As conceptions of learning shifted, so did views of teaching. Instead of transmitting the content of the school curriculum, teachers were expected to help students expand or reconfigure pre-existing understandings by engaging them in meaningful problem-solving activities, organizing communities of learners to maximize access to support, and monitoring students’ developing ideas (Brown & Campion, 1994). Because learners brought different prior knowledge to learning, teachers were expected to continuously tailor their teaching to the specific students in their classes. Just as importantly, because disciplines differed, teachers needed to engage in practices consistent with the demands of their subjects (Shulman, 1986), which required professional judgment and instructional decisions made on pedagogical grounds. In short, the traditional image of teachers as technicians yielded to the image of knowledgeable and reflective professionals who worked in the context of communities of professional educators and made reasoned decisions in the service of their students (Cochran-Smith & Lytle, 1993, 2009).

Because teachers were widely regarded as the key to school reform, it became clear that teacher candidates needed more powerful opportunities to learn to teach (Lampert & Ball, 1999), and traditional views of teacher learning were revised. In the new formulation, learning to teach was understood as complex and demanding intellectual work that occurred throughout the professional life span and required pre-professional preparation that laid the foundation for teaching as well as strong induction and mentoring support (Feiman-Nemser, 2001). Despite a steady shift toward these new views of teacher and student learning within the educational research and practice community, more traditional views remained entrenched within many schools (Cuban, 1993) and within some education reform initiatives.

**Increasingly diverse student populations and growing inequality.** The third trend relevant to teacher preparation has to do with demographic and geopolitical changes. In a global world, the rigid boundaries that separated countries became more fluid and technological developments shrank geographic distances. This resulted in the mass movement of people across the world, transforming the demographic makeup of many countries, which was strikingly evident in schools. In some countries, such as the United States, new immigration patterns were coupled with a history of institutionalized racism and the impoverishment of minority families. These brought diversity and inequality to the forefront of educational policy and practice. At the same time, however, a “new civil rights” movement emerged that worked against the historical goals of mid-20th century Civil Rights movements by undermining public education and reinforcing stratification of opportunities and outcomes (Kumashiro, 2010; Zeichner, 2010). This is reflected in the current backlash against multicultural and social justice approaches to teaching and teacher education (Cochran-Smith, Barnatt, Lahann, Shakman, & Terrell, 2009) and in increasing pressure to concentrate on the aspects of teacher preparation directly linked to student test scores.
In the United States, students of color now account for 44% of enrollments in elementary and secondary schools, up from 22% in 1972 (National Center for Education Statistics, 2010). In addition, 22% of children 18 years of age or younger live in poverty (U.S. Census Bureau, 2011), and 10% of K-12 students are English learners (Lazarin, 2006). Historically, schools have not educated these students on par with their White, more affluent, native English-speaking peers, and there are persistent disparities in achievement (KewalRamani, Gilbertson, Fox, & Provasnick, 2007), high school completion (Swanson, 2007), and college matriculation (Harvey & Anderson, 2007). While the achievement gap is not new, policy makers’ attention to the problem is unprecedented, which is not surprising given the assumption that school achievement corresponds to economic growth.

While there is wide agreement about the urgency of closing the achievement gap, there are fundamental differences about its causes and remedies. Some believe that good teachers and schools alone can offset the effects of social inequalities and gaps in learning across groups (e.g., Education Quality Project, 2008). Others contend that unless school opportunities to learn are equalized (e.g., school funding, class size, textbooks, facilities, and curriculum offerings) and unless out-of-school factors that distract students from academic learning are addressed (e.g., lack of medical care, food insecurity, poor housing, and the stress associated with poverty), then even excellent teachers are seriously limited in their ability to improve achievement for poor and racial/ethnic minority students (e.g., Berliner, 2006; Carter & Welner, 2012; Economic Policy Institute, 2008).

The contrasting demographic profiles of the K-12 student population and the teaching force present another challenge to schools. Although the student population is increasingly diverse, the teaching force is overwhelmingly White, middle class, and monolingual English speaking. Thus, teachers have an increasing number of students who are culturally, economically, and linguistically different from themselves. In addition, recent changes in educational policy and practice have made U.S. classrooms more developmentally and linguistically diverse than ever before (Lucas & Grinberg, 2008; Pugach & Blanton, 2009).

Programs of research on teacher preparation. The three broad policy, intellectual, and demographic trends described above are important parts of the larger milieu in which teacher preparation research is conducted. The first level of analysis in our larger review involved the identification of three broadly construed programs of research. By “programs” of research, we mean major groupings of studies that were shaped by, but also helped to shape, the trends described above. The three programs of research we identified are represented by the pentagonal shapes along the top layer of Figure 1: (a) research on teacher preparation accountability, effectiveness, and policies; (b) research on teacher preparation for the knowledge society; and (c) research on preparing teachers for equity and diversity. Although the third program of research is in a certain sense a sub-set of the second, we treat it as a program of research in its own right to ensure that research on diversity, equity, and access in teacher preparation is not marginalized or buried within larger issues.

We identified these programs of research through an iterative process based on our knowledge of the trends described above and a massive search for empirical studies about pre-professional teacher preparation, described below. In other words, although we had tentative ideas about what the major programs of research would be based on experience and background reading, we sought to validate or challenge these ideas empirically by testing them against the published research. This iterative approach was deliberately intended to avoid the limitations of previous reviews, which were based on a priori decisions about which research topics and methods to include and exclude. In contrast, our approach was not only informed by knowledge of the issues that concern policy makers, researchers, and practitioners but also accounted for the range of topics actually studied by differently positioned researchers.

Research as Social Practice

The second part of our theoretical/analytic framework—research as social practice—is complementary to the first. The idea here is that the interests, commitments, and social experiences of researchers—and not simply their epistemological or methodological perspectives (i.e., their research paradigms)—guide the research questions they pursue and the frameworks they adopt (Herndl & Nahrwold, 2000). This perspective is informed by Bourdieu’s (1977/1980) “theory of practice,” which conceptualized sociology as a science of social practices situated in social spaces and defined by struggles among agents with different resources and different inclinations about how to use those resources (Heilbronn, 2011). In their analysis of research on technical and professional communications, Herndl and Nahrwold (2000) drew on Bourdieu to contrast the notion of research as social practice with the more traditional notion of research paradigms, arguing that people who actually do the work of research are engaged in research practices. They suggested that the shift in perspective from paradigms to practices allowed considerations of not only methods but also purposes and “the relationship between research practices and social, economic and institutional power” (p. 263). We would argue that although identifying the social practices in various approaches to research is appropriate to many fields of research, it is especially appropriate in emerging fields such as teacher preparation, which are made up of multiple territories, many of which are contested, and which borrow from many other disciplines.

Our analysis of various clusters of teacher preparation research, which are described below, was guided by the idea of research as social practice. Figure 2 represents the
protocol we used for our second level of analysis, which involved analyzing the social practices in which researchers whose work we grouped into the various clusters engaged. For each cluster of studies, we considered (a) construction of problems and questions, topics and themes, including what is taken for granted or problematized and how research problems, as constructed, imply particular kinds of solutions, which are related to existing power structures; (b) underlying assumptions and the logic of argumentation; (c) researcher identity and positionality, intended audiences, perceived purposes and objectives, and connections to larger political/professional/policy agendas; (d) research designs, theoretical frameworks, epistemologies, and uses of evidence; and (e) issues, tensions and trends in findings and the implications that researchers have in mind for their research.

**Defining, Locating, and Analyzing Teacher Preparation Research**

For our review, we defined teacher preparation research as empirical, peer-reviewed studies, published between 2000 and 2012, about initial teacher preparation in various preparation contexts. This time frame coincided with new accountability expectations and the emerging policy focus on teacher quality/teacher preparation that intensified in many parts of the world at the end of the 1990s (Furlong, Cochran-Smith, & Brennan, 2009). Our review includes research on multiple aspects of practice and policy regarding the pre-professional preparation or certification of elementary and secondary general education teachers in various contexts, including colleges/universities and multiple “alternative” pathways and programs. By definition, then, we did not review research on teacher induction or mentoring, the continuing professional development of experienced teachers, or the preparation of educational specialists (e.g., bilingual, English as a second language, and special education teachers). In addition, the review did not include general studies of teacher quality, such as studies of teacher characteristics or qualifications, unless they focused specifically on either pre-professional preparation or teacher candidate certification.

Although the majority of the studies in our review was conducted in the United States, many studies from other nations were also included, and some clusters of research were highly international in focus. To locate the literature, we conducted a hand search of major national and international journals in general education, teacher education, key subject matter and special area journals, and the publications of major research institutions with self-reported or published external peer-review procedures. We also conducted targeted electronic searches on topics that occupy the attention of policy makers and social science policy researchers, such as alternative routes and teacher certification, to account for research related to teacher preparation but not necessarily associated with the field of education.

Our initial search yielded more than 1,500 empirical studies, all of which were included in our preliminary review. We sorted each study into one of the three major programs of research. Although some studies had multiple foci, we
nevertheless sorted each study into only one program of research, based on its primary focus. Within the three major programs of research, we further categorized the studies into clusters, based on focal themes and topics. Clusters were identified based on an iterative process made up of preliminary reading of the studies, tentative formation of studies that clustered together, closer reading, and revision/reformation of clusters. Within most clusters, we further identified two or more lines of research, using a similar iterative process. Clusters and lines of research were analyzed according to the social practices in which researchers engaged. It is important to note that it was not the goal of our review to cite every single existing study to provide a definitive analysis of “what we know” about particular topics. Rather, our goal was to map the territories and identify trends and issues within the expansive landscape.

Figure 3 provides an overview of the three major programs of research and the clusters within each. The remainder of this article describes Research Program A. Part 2 of the article describes Research Programs B and C. Given space constraints, for each of these three programs, we describe the larger historical, economic, and social forces within which these research programs emerged. Then, we focus on the social practices of one cluster and offer two illustrative examples of studies within the cluster.

### Research Program A: Teacher Preparation Accountability, Effectiveness, and Policies

| Cluster A-1 | Alternative certification and pathways |
| Cluster A-2 | Policy responses and trends |
| Cluster A-3 | Testing and assessment |
| Cluster A-4 | Program evaluation |

### Research Program B: Teacher Preparation for the Knowledge Society

| Cluster B-1 | Preparing teachers to teach science subject matter |
| Cluster B-2 | The influence of coursework on learning to teach |
| Cluster B-3 | The influence of fieldwork on learning to teach |
| Cluster B-4 | Content, structures, and pedagogy of teacher preparation for the knowledge society |
| Cluster B-5 | Teacher educators as teachers and learners |
| Cluster B-6 | Teacher preparation and learning to teach over time |

### Research Program C: Teacher Preparation for Diversity and Equity

| Cluster C-1 | The influence of coursework and fieldwork on learning to teach diverse student populations |
| Cluster C-2 | Recruiting and preparing a diverse teaching force |
| Cluster C-3 | Content, structures, and pedagogies of teacher preparation for diversity |
| Cluster C-4 | Teacher educator learning for/experiences with diversity |

**Figure 3.** Major programs and clusters of research on teacher preparation.

**Research Program A**

*Teacher Preparation Accountability, Effectiveness, and Policy*

As we noted, one of the major policy/political trends that has influenced teacher preparation is unprecedented attention to teacher quality and accountability with a heavy emphasis on policies related to entry pathways, certification, testing, and assessment. Shaped by this trend, the studies in Research Program A have to do with teacher preparation accountability, effectiveness, and the impact of policies, particularly those that govern alternative certification routes and pathways. Within this broad program of research, we identified four clusters of studies (see Figure 4): policies regarding alternative certification and pathways (Cluster A-1); institutional responses to policies and/or analyses of policy trends and discourses (Cluster A-2); testing and assessment of teacher candidates or preparation programs, including new assessment tools (Cluster A-3); and program evaluation studies (Cluster A-4). Given its prominence as an issue for policy makers, philanthropists, the business world, and practitioners and because of its high visibility in the education reform discourse, we concentrate on Cluster A-1.
Labor market policies allowing “alternative” certification, entry pathways, preparation, and recruitment were initiated or expanded in all but a handful of U.S. states during the 1980s and 1990s (U.S. Department of Education, 2013). Although these have enjoyed considerable attention and funding, when alternative certification policies were developed, there was limited evidence about their potential impact (Allen, 2003; Wilson, Floden, & Ferrini-Mundy, 2001; Zeichner & Schulte, 2001; Zumwalt, 1996). The studies in Cluster A-1 responded to these lacunae in the research.

**Research Problems and Underlying Assumptions:**

**Research Program A, Cluster I**

At a general level, Cluster A-1 studies constructed the research “problem” as the current failure of school districts, states, and teacher preparation programs to provide all students with high-quality teachers, including teachers in shortage subject areas and teachers for low-income, urban, and/or hard-to-staff schools. The premise here is that teacher quality is among the most important factors in students’ achievement, but schools with large numbers of poor and minority students are the most likely to have teachers who are not well-qualified. When the problem is framed this way, the logical conclusion is that we need policies that produce and distribute more high-quality teachers. Most Cluster A-1 studies were intended to inform policy makers who are responsible for such policies.

Some of these studies (e.g., D. J. Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006, 2009; Cleveland, 2003; Donaldson & Johnson, 2010; Gimbert, Cristol, & Sene, 2007; Glazerman, Mayer, & Decker, 2006; Kane, Rockoff, & Staiger, 2008; MacIver & Vaughn, 2007; Papay, West, Fullerton, & Kane, 2012; Suell & Piotrowski, 2006;
Xu, Hannaway, & Taylor, 2011) framed the research problem in terms of determining the nature, cost, and effect of new routes into teaching intended to address teacher shortages and equalize the distribution of teacher quality. Other studies (e.g., Cohen-Vogel & Smith, 2007; Darling-Hammond, Chung, & Frelow, 2002; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005; Evans, 2010; Friedrichsen et al., 2009; Konold et al., 2008) framed the problem in terms of the outcomes and consequences of “traditional” versus “alternative” entry pathways and certification credentials, which reflects larger debates about professionalization and deregulation (Cochran-Smith & Fries, 2001; Cochran-Smith & Zeichner, 2005; Zeichner, 2003) and larger questions about whether preparation adds value to teacher effectiveness (Ballou & Podgursky, 2000; Darling-Hammond, 2000). This latter construction of the problem emerged from early critiques of alternative certification policies and concerns about growing differences in the nature of teachers’ preparation prior to full teaching responsibility (Darling-Hammond et al., 2005).

**Research Questions, Designs, and Researcher Positionality: Research Program A, Cluster 1**

We identified three major lines of research in this cluster, differentiated primarily by the questions pursued. By far, the largest group of studies asked, *What are the effects of certification and/or alternative pathways, programs, routes and certification?* Although it is widely acknowledged that there are enormous differences among “alternative” and “traditional” preparation programs and pathways (Committee on the Study of Teacher Preparation in the United States, 2010; Humphrey & Wechsler, 2007; Zeichner & Conklin, 2005), most of these studies examined the effects of alternative pathways and certification statuses or the effects of particular alternative programs by comparing these with other pathways and statuses or by comparing alternatively certified teachers with teachers with regular or other certifications. Many of these studies constructed students’ achievement as the primary outcome (e.g., Boyd et al., 2012; Clotfelter, Ladd, & Vigdor, 2010; Darling-Hammond et al., 2005; Dee & Cohodes, 2008; Glazerman et al., 2006; Kane, Rockoff, & Staiger, 2008; Xu et al., 2011), although studies also considered distribution of teachers (e.g., Boyd et al., 2008; Cohen-Vogel & Smith, 2007), teacher retention (e.g., Maclver & Vaughn, 2007; Papay et al., 2012), diversification of the teacher workforce (e.g., Papay et al., 2012), and teachers’ efficacy or sense of preparedness for teaching (e.g., Darling-Hammond et al., 2002; Zientek, 2007).

A second group of studies asked, *What are the characteristics of alternative certification programs/pathways and how do they operate in various regional and state contexts?* The intention of these studies was to examine the actual workings of pathways by exploring their variations, characteristics, management in particular state or regional contexts, the experiences of teachers who chose those routes, factors that influenced career decisions, and other aspects of local or regional practice or of state management and regulatory policies regarding alternative routes. Unlike the studies in the first line, the studies in the second tended not to focus on student achievement or other outcomes. Rather, they explored the range and variation among alternative pathways (e.g., Humphrey & Wechsler, 2007), including the experiences of teacher candidates (e.g., Carter & Keiler, 2009; Wilcox & Samaras, 2009), their needs for support (e.g., Foote, Brantlinger, Haydar, Smith, & Gonzalez, 2010; Unruh & Holt, 2010), their reasons for staying in or leaving teaching (e.g., Costigan, 2005; Ng & Peter, 2010), and the administrative structures (Boggess, 2010) and regulatory mechanisms (e.g., Heinen & Scribner, 2007; Johnson, Birkeland, & Peske, 2005) involved at local or state levels.

Finally, a third, much smaller line of studies asked, *What are the effects of the features and structures of preparation across programs and pathways?* These studies examined the effects of particular features and structures of preparation across programs and pathways, which produced finer grain-sized analyses than the studies in the first group. The studies in this third line of research (e.g., Boyd et al., 2009; Humphrey, Wechsler, & Hough, 2008; Kee, 2012) aimed to identify salient features or ingredients of preparation rather than pathways or routes conceptualized as blunt policy levers.

Many of the researchers in this cluster are social scientists in sociology, economics, testing and assessment, and public policy, positioned as “outsiders” to the teacher education community. Their research purposes and agendas differed from those who conduct research from inside university-based teacher education programs, as was the case in most studies in Research Programs B and C (see Part 2). Many of the studies above were published in social science journals, particularly economics.

Most of the studies in Cluster A-1 were quantitative, with some qualitative observational or interview data and case or cross-case analyses used to analyze regional or local characteristics, consequences, structures, and organizational contexts of alternative certification. In the quantitative studies, many used large-scale databases, as well as value-added modeling or other forms of multiple regression analysis to examine the relationship between pathways and student achievement or other outcomes.

**Two Examples: Research Program A, Cluster 1**

To illustrate the individual studies in this research cluster and the social practices in which researchers engaged, we offer two examples. The first examined how changes in entry requirements altered the teacher workforce and affected student achievement in the New York City (NYC) teacher labor market (Boyd et al., 2006). The study, published in *Education Finance and Policy*, was conducted by university-based
researchers in the fields of economics, public policy, and education. Addressing the problem of increasing demand for quality teachers, especially in low-performing schools, Boyd and colleagues compared the achievement of NYC students taught by teachers from university-recommended, Teach for America (TFA), and the NYC Teaching Fellows (NYCTF) programs as well as pathway impact on the teacher workforce. The researchers matched the achievement scores of students in grades 3 to 8 with teacher data to examine the relationship between student achievement and teacher pathways. They found that the students of teachers from university-recommended pathways achieved greater gains in mathematics and English language arts than students of teachers from pathways with reduced coursework prior to teaching, although TFA teachers were initially more effective and NCYTF teachers caught up quickly in middle-school mathematics. However, they also found that differences were small, and many disappeared over time. Overall, they concluded that variation in effectiveness was much greater within than between pathways.

This study was ground-breaking in that it was one of the first to caution against what the authors called “simple stories” about which pathway was best, which is one of the ways this research had previously been characterized. In contrast, Boyd and colleagues used multiple models to estimate the effects of the pathways while attempting to account for differences in retention, experience, costs, and outcomes. This group continued to examine NYC pathways data over time, making refinements to these initial findings and conducting a number of other analyses of the features of pathways and programs correlated with student achievement and other outcomes, including teacher retention.

The second example is Humphrey and Wechsler’s (2007) national study of alternative certification programs, which was published in Teachers College Record. In this study, sponsored by the non-profit research and development organization, SRI International, the researchers analyzed seven different alternative route programs, using interviews with key personnel, entry and exit surveys, and structured observations of and interviews with teacher candidates. Humphrey and Wechsler found that the characteristics of participants across the alternative certification programs could not be generalized. The researchers also examined teacher retention, knowledge for teaching, self-efficacy, and teachers’ reported growth as desired outcomes of preparation programs. They found that coursework influenced these outcomes, that university selectivity and teaching experience were influential, and that mentoring made a limited contribution. Importantly, they also found that school context was the major factor that influenced retention, efficacy, and candidates’ reported growth. Overall, they concluded that there was enormous variation between and within the programs themselves.

This study, which was extended the following year (Humphrey et al., 2008), was trend-setting. Because the differences among alternative certification programs were so great, Humphrey and Wechsler argued that alternative routes themselves were the wrong unit of analysis for studies about alternative certification. Instead, they suggested that research should focus on subgroups of individuals within programs who had similar backgrounds and experiences in similar school settings. They argued that this could help avoid the inconsistent findings that permeate the literature on alternative programs and pathways.

Issues, Tensions, and Trends in Findings: Research Program A, Cluster 1

We conclude this discussion of Research Program A, Cluster 1, which focuses on alternative certification and pathways, with insights from our larger analysis. Our review confirmed that many studies about alternative certification have moved beyond the simple “horse race” (Cochran-Smith, 2005, p. 3) approach that aimed to determine whether “the alternative” or “the traditional” preparation/certification pathway was the most effective. Few of the more recent studies we reviewed aimed to draw global conclusions about the single best pathway into teaching, although some investigated whether particular models or alternative pathways/programs, such as the urban teacher residency approach (e.g., Papay et al., 2012) or TFA-type fast track models (e.g., Xu et al., 2011), were effective as policy levers for improving teacher quality in comparison with other sources of new teachers. Studies like these are only one step away from the horse race, and, not surprisingly, there are mixed results across them.

A strong second trend across these studies is recognition that there is as much variation within as between “alternative” and “traditional” pathways. This trend of variation and contingency was very strong across the studies. The studies showed that the experiences and performances of teachers who entered through different pathways depended on the interaction of what teacher candidates brought with them, the features of programs and pathways as experienced, and the resources, leadership, and cultures of particular school contexts.

A third trend across the studies is their use of more sophisticated and powerful conceptual categories, data sources, and analytical techniques than earlier studies. Many of these studies attempted to untangle the impact of pathway type from the impact of other variables, including teacher, student, and school characteristics and teacher retention. Across studies, we found evidence that policies that permit alternative pathways have the potential to alter the characteristics of the entering teaching force within particular labor markets.

Finally, there were several limitations to this cluster of studies. First, because they focused on preparation and pathways as policy issues, they generally did not provide information about how participants actually learned to teach—that is, what they learned from early entry into classrooms, what practices they took up, what knowledge they drew on, or how
their interpretive frameworks mediated their work. Assuming that school context is a central factor influencing new teachers’ career decisions, efficacy, and growth (Donaldson & Johnson, 2010; Humphrey & Wechsler, 2007), it is apparent we need more research on the impact of particular mixes of teachers’ characteristics, school contexts, and program features. Second, in this cluster of studies, student test scores were the most important measure of effectiveness. With some important exceptions, the studies collectively tended to reify test scores as the decisive measure of teacher effectiveness and program/pathway effectiveness, marginalizing other outcomes. Third, many of the studies in this cluster were couched in larger discussions about the unequal distribution of quality teachers to poor and minority schools with the intention of creating greater access for children from poor and non-dominant groups. In another sense, however, many of the studies worked from the assumption that school and teaching factors were the major sources of educational inequality without acknowledging that inequality is rooted in and sustained by larger societal inequalities. Along these lines, some of the studies (e.g., Glazerman, Mayer, & Decker, 2006; Xu et al., 2011) were designed to examine whether alternative pathways depressed already low levels of achievement for certain groups of students. Ultimately, research that examines alternative pathways in terms of whether they are good enough to maintain or slightly increase existing low levels of achievement rather than whether they help break the cycle of low achievement for certain groups of students may reinforce the cycle of inadequate resources, low expectations, and poor achievement.

Part 2 of this article, to be published in the next issue of JTE, describes Research Programs B and C and analyzes one cluster of studies within each. The article concludes with recommendations for the future of teacher preparation research that cut across all three programs.

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Note
1. These procedures are spelled out in detail in Cochran-Smith, Villegas, Abrams, Chavez-Moreno, Mills & Stern, in press.

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Author Biographies

Marilyn Cochran-Smith is Cawthorne Professor of Teacher Education and the Director of the Doctoral Program in Curriculum and Instruction at Boston College’s Lynch School of Education. She is a member of the National Academy of Education and a former president of the American Educational Research Association. She has published nine books and more than 175 articles, chapters, and editorials on teacher education research, practice, and policy and practitioner inquiry.

Ana Maria Villegas is Professor of education and Director of the Doctoral Program in Teacher Education and Teacher Development at Montclair State University. She has published widely on topics related to preparing culturally and linguistically responsive teachers as well as recruiting and preparing a diverse teaching force. Over the years, she has received awards for her scholarship from the American Association of Colleges for Teacher Education, American Educational Research Association, and Educational Testing Service.