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A Decade of Professional Development Research for Inclusive Education: A Critical Review and Notes for a Research Program

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We reviewed the research on professional development (PD) for inclusive education between 2000 and 2009 to answer three questions: (a) How is inclusive education defined in PD research? (b) How is PD for inclusive education studied? (c) How is teacher learning examined in PD research for inclusive education? Systematic procedures were used to identify relevant research and analyze the target studies. We found that most PD research for inclusive education utilized a unitary approach toward difference and exclusion and that teacher learning for inclusive education is undertheorized. We recommend using an intersectional approach to understand difference and exclusion and examining boundary practices to examine teacher learning for inclusive education.

Keywords: professional development, inclusive education, teacher learning, boundary practices, intersectionality.

The purpose of this article is to conduct an international and systematic review of professional development (PD) research for inclusive education. We examined how *inclusive education* and *teacher learning* have been examined in this literature. We were also interested in the methodological characteristics and publication trends of PD research for inclusive education. These foci were translated into the following questions that guided the search and analysis of the literature: (a) How is inclusive education defined in the PD literature? (b) How is PD for inclusive education studied? and (c) How is teacher learning examined in the PD research for inclusive education?

We begin by highlighting the significance of this review and comparing it with previous literature reviews on PD. Next, we define inclusive education. After describing the methods for the literature search and selection, we present our findings. Finally, we discuss and critique our findings drawing from intersectionality

theory (e.g., Crenshaw, 1991; Hancock, 2007) and research on boundary practices (e.g., Akkerman & Bakker, 2011; Star & Griesemer, 1989).

Significance of This Review

The significance of this review of the literature is supported by several compelling reasons. First, a critical imperative for the development of inclusive school systems is the capacity to nurture and develop teachers who have the understandings, skills, critical sensibilities, and contextual awareness to provide quality educational access, participation, and outcomes for *all students*. Teachers can have a significant impact on students' learning. Nye, Konstantanopoulos, and Hedges (2004) reported that teacher effects are much larger than the effects of schools; these effects are particularly significant in low socioeconomic schools and even larger than class size. In addition, the OECD (2005) has reported that "the broad consensus is that 'teacher quality' is the single most important school variable influencing student achievement" (p. 2).

Second, PD is a pathway for policy implementation considering that new educational reforms demand teachers and administrators to learn new skills and content and develop new predispositions (Knapp, 2003). As Knapp (2003) stated,

> The situation begs for conceptual clarity and empirically based insights. Theoretical work and empirical study of professional development itself and the part it plays in reform strategies can shed light on the prospects for professional development to be a constructive instrument of improvement policy. (p. 110)

PD is an important piece in implementing inclusive education reform. Unfortunately, PD programs continue to struggle to prepare teachers to work in education systems where exclusion tends to be ubiquitous (Slee, 2010). It is imperative, thus, to take stock of the research on teacher PD for inclusive education and examine how knowledge about this topic has been generated.

Third, although we did not locate a systematic literature review on PD for inclusive education, we comment on other PD reviews as a way to highlight key features of our review. For instance, we compare features of our review with aspects of reviews reported by Timperley and Alton-Lee (2008) and Wilson and Berne (1999), even though these authors did not focus on the inclusive education movement. We described in detail the systematic methods used to search and select studies. Previous literature reviews did not report the study search and selection procedures (e.g., Wilson & Berne, 1999) or describe the specific key terms used to retrieve the literature or the criteria for selecting the research (Timperley & Alton-Lee, 2008). Artiles, Kozleski, Dorn, and Christensen (2006) relied on previous reviews to identify research trends as a means to conduct an in-depth critique of views of learning in inclusion research. In addition, except for Avalos (2011), previous reviews have not encompassed the entire decade of the 2000s. Examining research on teacher learning for inclusive education conducted in this period provides up-to-date information about the zeitgeist of this decade, pointing out the strengths and shortcomings of this research so that new forms of theorizing and researching this topic can emerge in the next decade.

Avalos's (2011) review only focused on articles published in the journal *Teaching and Teacher Education* and did not focus on preparing teachers for inclusive education.

The present literature review focused specifically on the inclusive education movement from an international perspective, examining how the definitions of this movement changed across national and sociocultural boundaries. Definitions of inclusive education provide the focus and telos of policies and PD programs for inclusive education and shape the unit of analysis of research on teacher learning for inclusive education. These definitions point to the who, what, and where of inclusive education. That is, who is the one that needs to be included (e.g., students with disabilities, racial minorities, females, etc.), what must be done for this to happen (e.g., redistribute access, recognize and value differences, and/or provide opportunities for equal participation with families), and where these actions should take place (e.g., school, classroom, etc.). Accordingly, it is relevant to take a critical look at how the research community has defined inclusive education and examine the implications of these definitions for PD.

Fourth, research on teacher learning for inclusive education highlights what researchers consider a measure or evidence of change in the process of becoming inclusive teachers and schools. This evidence is used in turn to design policies and teacher learning programs. Furthermore, we extended previous findings because we provide a detailed descriptive profile of the selected studies, examining the publication trends over time, methodologies used, and forms of PD that emerged from the literature. In addition, we advance recommendations for research based on an intersectional approach to difference and exclusion (Crenshaw, 1991, 1995; Hancock, 2007) and on research on boundary practices (e.g., Akkerman & Bakker, 2011), infusing PD research and efforts for inclusive education with a broader social justice agenda.

Inclusive Education Defined

Inclusive education is a global movement that emerged as a response to the exclusion of students who were viewed as different (e.g., students with disabilities, students of color, students from lower caste backgrounds, students from low socioeconomic backgrounds) by educational systems; these constructions of difference are highly consequential for they have mediated over time student access and participation in education. As Thomas and O'Hanlon (2005) stated, it "has become something of an international buzzword . . . almost obligatory in the discourse of all right-thinking people" (p. x). The notion of inclusive education, however, is highly contested. Definitions of inclusive education vary across nations (Artiles, Kozleski, & Waitoller, 2011), schools (Ainscow, Booth, & Dyson, 2006a), and the inclusive education literature (Artiles et al., 2006). Whereas in the international community inclusive education is concerned with a broad equity agenda for all students, in the United States, inclusive education has been defined in terms of access to the general education classroom for students with disabilities (Artiles & Kozleski, 2007; McLaughlin & Jordan, 2005). Furthermore, with the advent of accountability reforms, the rhetoric of inclusive education has also focused on the academic outcomes of students with disabilities (McLaughlin & Jordan, 2005).

As Slee (2011) pointed out, to discuss inclusion we need to first understand exclusion, which is more complex than unequal access and outcomes for students with disabilities. Students from nondominant groups tend to be overrepresented in special education in the United States (Waitoller, Artiles, & Cheney, 2010), Austria (Luciak & Biewer, 2011), Germany (Löser & Werning, 2011), Sweden (Berhanu, 2008),

England (Dyson & Kozleski, 2008), and Australia (Sweller, Graham, & Van Bergen, 2012). In the United States, disparities are also found within the special education system. Special education students from nondominant groups (e.g., Latino/a, Native American, and African American) are more likely to be removed from the general education classroom (de Valenzuela, Copeland, Huaqing Qi, & Park, 2006; Fierros & Conroy, 2002; Sullivan, 2011), less likely to receive related and language services (Zehler et al., 2003), and less likely to enroll in higher education programs than their White peers (Wagner, Newman, Cameto, & Levine, 2006).

This evidence indicates that students do not experience one form of exclusion, but rather that exclusion is the result of the interaction of multiple factors, demanding complex responses (Crenshaw, 1995). From this vantage point, inclusive education should focus on dismantling overlapping and complex barriers for learning and participation in schools and should create spaces for collaboration for professionals across disciplines and fields (e.g., education, sociology, psychology, and health care, among many), families, and students. PD efforts for inclusive education thus should focus on nurturing teachers that understand complex forms of exclusion and are able to collaborate with other professionals and families to dismantle intersecting barriers that keep certain groups of students from accessing and participating in meaningful learning experiences.

Given the limits of traditional conceptualizations of inclusive education, it is necessary to refine this construct so that the complexities that lead, mediate, and maintain exclusion are acknowledged. Drawing from Fraser's (1997, 2008) three-dimensional conceptualization of justice, we argue that the inclusive education movement should constitute an ongoing struggle toward (a) the *redistribution* of access to and participation in quality opportunities to learn (redistribution dimension); (b) the *recognition* and valuing of all student differences as reflected in content, pedagogy, and assessment tools (recognition dimension); and (c) the creation of more opportunities for nondominant groups to advance claims of educational exclusion and their respective solutions (representation dimension; see also Waitoller & Kozleski, 2013). These three tenets are not mutually exclusive, and as North (2006) noted, they need to inform the work at macro (e.g., district and state policy) and micro levels (e.g., classroom interactions) of the educational system. Focusing on the dimensions of recognition, redistribution, and representation afford inclusive education researchers to examine and address the needs of students who experience intersecting forms of exclusion by attending to compounding forms of marginalization (i.e., misdistribution, misrecognition, and misrepresentation).

Yet, as Gewirtz (1998) noted, Fraser's dimensions of justice may be essentialist and static. Gewirtz argued for a more fluid and dynamic notion of justice. On this note, careful attention needs to be paid to how forms of educational exclusion change across geographical spaces and time (Hemingway & Armstrong, 2012). This emphasizes the idea that we live and act in dynamic contexts in which margins and centers are in constant flow as a result of how individuals and groups interact within political, historical, and sociocultural contexts (i.e., a constant interaction and relationship of micro and macro process; Artiles & Kozlezki, 2007). Thus, inclusive education involves being "cultural vigilantes" (Corbett & Slee, 2000, p. 134) who always examine the margins. Having these intricacies in mind, we turn to review PD research for inclusive education. We begin by describing our methods for searching and selecting relevant studies.

Methods

We searched for PD research for inclusive education studies in three major education search engines: EBSCO Academic Search Premier, ERIC via Lumina, and Education Full Text-Wilson Web. We combined the following descriptive terms and keywords in the searches to maximize the number of potential studies: Using the connector *and*, the terms *inclusive education* or *inclusion* were combined with the terms *teacher training, teacher development, teacher education, teacher learning, teacher preparation, professional development*, or *action research*. We connected these terms until all possible combinations were exhausted. This search of the literature produced 1,115 articles. We examined these articles to decide whether they met the literature review's study selection criteria:

1. The study questions, purpose, or hypothesis addressed *at least one* of the following two aspects:

    a. The impact of professional development for preparing teachers for inclusive education and/or the impact on in-service teachers of an implementation of inclusive education in a school. In the case that both pre- and in-service teachers were included in the study, the authors must have disaggregated the results to discern the particular impact on in-service teachers.
    b. The trajectories or experiences of in-service teachers through a professional development program or through the implementation of inclusive education in schools.

2. Source of publication: The studies must have been published in peer-reviewed journals. This excluded studies published in book chapters, technical reports, and studies presented at conferences.
3. Time range: The studies were published between 2000 and 2009 to portray a decade of research in teacher learning for inclusive education.
4. Research methods: The studies were data based (either primary or secondary), with quantitative, qualitative, or mixed designs. Thus, we did not select essays, literature reviews, editorials, or papers that addressed the issue of in-service teacher development solely from a conceptual point of view.
5. Participants: The study participants were in-service teachers working K–12 public schools.
6. Data collection: Researchers collected data at least at two points in time (e.g., pre- and post-survey or questionnaires, observations, and interviews across time) to document changes in in-service teachers (e.g., attitudes, beliefs, knowledge, practices).

A study needed to meet all six criteria to be included in the review database. After deleting duplicates and applying these selection criteria to the 1,115 publications identified, we selected 42 eligible journal articles. The references for these 42 articles and the selection criteria were sent to two scholars with expertise in the international literature on professional development for inclusive education. We asked these scholars to evaluate whether there were any other studies that could

meet our criteria that were not included in the references provided. After receiving these scholars' feedback, four more articles were identified, increasing the number of eligible journal articles to 46 (see references marked with an asterisk in the reference list for a complete list of the articles that met criteria).

The most common reasons for which studies did not qualify for this literature review were that they focused on preservice teachers (e.g., Andrews, 2002), addressed teacher preparation for inclusive education from a conceptual point of view (e.g., Trent, Artiles, Fitchett-Bazemore, McDaniel, & Coleman-Sorrell, 2002), only described a teacher preparation program (e.g., Florian & Rouse, 2009), or collected data only at one point in time (e.g., Hodkinson & Devarakonda, 2009).

Findings

How Is Inclusive Education Defined in PD Research?

Three definitions of inclusive education were identified in the selected articles. A group of studies defined inclusive education as related only to ability differences. Another group of studies defined inclusive education as concerned with changing the curriculum to take into account gender and cultural differences but overlooked ability differences. A third group of studies defined inclusive education as a process of overcoming barriers to participation and learning for all students (students with diverse abilities, cultures, gender, and racial/ethnic background). In the following section, we describe and give examples of each of these groups of studies.

An Enduring View on Ability Differences

By far, the bulk of the PD research (70%, $n = 32$) defined inclusive education with regard to ability differences. That is, they defined inclusive education as pertaining to students with disabilities, at risk, or having learning difficulties. We use throughout this article the term *students with diverse abilities* to refer to all these groups of students. Out of these 32 studies, 66% (21) were conducted in the United States. Studies conducted in Greece, Australia, and England accounted each for 6% (2) of studies that defined inclusive education with regard to ability differences, while the remaining 5 studies were conducted in South Korea, Scotland, New Zealand, Turkey, and the Netherlands.

Interestingly, these studies accounted for 90% of the articles published in the first half of the decade but for 60% of the studies published in the second half of the decade. This suggests an increase over time of professional development efforts that broadened the boundaries of inclusive education to include other kinds of differences (e.g., race/ethnicity, gender, culture). Within studies that defined inclusive education with regard to ability differences, we found two subgroups: a subgroup that focused on instructional methods to provide access to the general education curriculum to students with diverse abilities and a subgroup of studies that focused on changing school cultures to inform practices that facilitate access, participation, and learning for students with diverse abilities.

Addressing ability differences through instructional methods. These studies focused on supporting teachers to implement instructional accommodations and strategies (e.g., differentiated instruction) to provide access for students with

disabilities, at risk, or having learning difficulties to the general education classroom and curriculum (e.g., Johnson, 2000; Parker, 2006). This subgroup of studies accounted for 84% (27) of the 32 studies that defined inclusive education as concerned with ability differences.

Klingner, Ahwee, Pilonieta, and Menendez (2003), for instance, conducted a study to scale up four research-based practices for inclusive classrooms. The researchers provided a 2-week professional development on partner reading, collaborative strategic reading, making words, and phonological awareness. Klingner et al. used the Classroom Observations and Implementation Checklist to identify high, moderate, and low implementers and the barriers that these groups of teachers faced while implementing the four strategies. The authors did not explicitly define inclusive education in the article; however, the unit of analysis—teachers' implementation of research-based practices to include students with disabilities—stressed access to the general education classroom for students with diverse abilities. Furthermore, the authors wrote, "with this study we continued our line of research in professional development designed to facilitate the sustained use of research-based practices in heterogeneous classrooms that include students with special needs" (p. 424). Thus, inclusive education was concerned with technical aspects (i.e., reading instructional strategies) of including students with diverse abilities in the general education classroom.

Changing school cultures. Whereas the first subgroup of studies focused on ability differences from a technical and classroom perspective, the second subgroup of studies defined inclusive education as an ongoing and systemic process of changing school cultures to inform practices that facilitate access, participation, and learning for students with diverse abilities (e.g., Deppeler, 2006; Kugelmass, 2001). These studies examined schools and teachers as they struggled to transform their cultures so that all ability differences were valued and represented in content, pedagogies, and assessment tools. This subgroup of studies accounted for 16% (5) of the 32 studies defining inclusive education with regard to ability differences.

Deppeler (2006), for instance, investigated the impact of a 2-year action research project that involved the collaboration between an Australian school and university. The purpose of this study was to enhance "teachers' capacity to respond to diversity through collaboration and active involvement in evidence-based inquiry in their schools" (p. 347) and to examine this process among eight schools and 45 teachers. In particular, the action research project focused on developing teacher capacity for students who were having learning difficulties in literacy instruction. Deppeler collected audio recordings, notes of teachers' discussions, participants' research reports, reflective journals and mind maps, classroom observations, interviews, email conversations, surveys on beliefs and knowledge about inclusive practices, and students' measures of literacy achievement. Teachers became more confident and reliant on using inquiry to support student learning, collaboration increased and was understood as enhancing learning skills on inquiry, and teachers became more open to be observed and receive feedback from peers. Teachers' positive attitude to their students was paralleled with valuing assessments that focused on student learning and with a rejection of assessments

that were divorced from the classroom. Furthermore, Deppeler reported that students' scores in writing and reading assessments improved and that students with the lowest assessment scores showed the greatest improvement.

However, the inquiry process was not sufficient by itself to interrupt all existing practices or change all teachers' beliefs about students' differences. Teachers, for instance, when searching for practices to improve their students' outcomes, focused rather on fixing students' deficits than on student learning. Deppeler (2006) wrote,

> In spite of these efforts, it became increasingly apparent that for some teachers, engaging with evidence about student learning would not be a sufficient condition in itself to prompt their critical examination of deficit beliefs or to change practices. (p. 353)

Studies that defined inclusive education as an ongoing and systemic process of changing school culture and stressed ability differences went beyond the technicalities of including students with diverse abilities in the general education classroom. They demonstrated the tensions and gains faced when schools engage in the process of transforming their practices and ways of thinking about students with diverse abilities.

Inclusion as Related to Race, Class, Gender, or Culture

Five studies (10%) based their definitions of inclusive education focusing on racial, class, gender, or cultural differences. Three of these studies were conducted in the United States, one in Canada (Mueller, 2006), and one in Trinidad and Tobago (Layne, Jules, Kutnick, & Layne, 2008). Interestingly, these studies did not mention students with disabilities in their definitions of inclusive education; however, issues of educational attainment were implicitly intertwined in the studies. Two of these studies, Capobianco (2007) and Capobianco, Lincoln, and Canuel-Browne (2006), conducted 6-month action research projects to examine closely how three high school science teachers made sense of their classroom experiences as a result of engaging in collaborative action research on feminist pedagogy and gender-inclusive practices. The authors collected data through semi-structured interviews, whole group discussions, classroom observations, and review of school documents. In this action research project, the teachers and the university researcher identified classroom-based problems and sought their solutions to contribute to a collective knowledge about teaching and learning. In addition, teachers developed research competencies associated with data collection, analysis, interpretation, and critical reflections.

Drawing from feminist theory, Capobianco (2007) and Capobianco et al. (2006) contextualized inclusive education in a struggle to transform structures of power in modern and postmodern societies. The authors examined the intersection of these power structures with the social distributions of power on scientific inquiry and implementation. According to the authors,

> This model deals with the extent to which teachers, students, and other stakeholders take steps to restructure the culture and organization (e.g., schools and universities) from which science learning takes place so students from diverse racial, ethnic, and social-class groups will experience educational equality and cultural empowerment. (Capobianco, 2007, p. 4)

Capobianco and colleagues reported that teachers became researchers of their own practice, gaining new knowledge about feminist science teaching and creating a toolkit of practices for inclusive science teaching. For instance, one of the teachers created the space necessary for her students to begin thinking, raising questions, and talking about the role science plays in their lives. By revisiting her own experiences as a female learning and teaching science, this teacher moved forward in her understanding of who her students were and what role science might play in their lives. This teacher, furthermore, gained the practical knowledge necessary to generate and evaluate her own thinking, taking on the role of researcher and developing and critically analyzing her own knowledge about teaching.

Inclusive Education as Participation and Learning for All Students

Nine studies (20%) defined inclusive education in broader terms, as a systemic process of overcoming barriers to participation and learning for all students. These articles defined inclusive education drawing from the Index for Inclusion (Booth & Ainscow, 2002), which is a self-review instrument for school change that shifts the focus of inclusive education from students with disabilities to overcoming barriers to learning and participation and providing resources to support learning for all students (Booth & Ainscow, 2002). These studies' professional development efforts were based on schoolwide action research projects (e.g., Robinson & Carrington, 2002). Of these studies, 45% (4) were conducted in England, 33% (3) were conducted in Australia, while the remaining two studies were conducted in Indonesia (Fearnley-Sander, Moss, & Harbon, 2004) and Cyprus (Angelides, Georgiou, & Kyriakou, 2008).

Dyson and Gallannaugh (2007), for instance, reported findings from a larger study in which they examined the impact of a 3-year collaborative action research project guided by the Index for Inclusion. In particular, they were interested in understanding what were the barriers to participation and learning, what practices could help to overcome them, and how those practices could be encouraged and sustained. To answer these questions, the authors collected interview data with school personnel, students, parents, local authority personnel, and school governors. The authors also observed school practices and collected school performance data.

Dyson and Gallannaugh (2007) presented an account of a school that was attempting to develop inclusive practices while meeting standards-based policies in England. They reported that teachers had a deficit perspective of students and families and thought that boys in particular had trouble learning, especially if the boys' parents lacked skills and experienced unemployment. Teachers' concerns for these students increased as the action research project developed, which involved a willingness to take more risks to improve students' learning. To these teachers, inclusion became the means to provide experiences that were missing from students' lives and therefore raising the academic achievement of all students. According to the authors, standard-based policies helped teachers to operationalize inclusion, while thinking about inclusion helped teachers to respond to students' differences. The authors wrote that "some development of inclusive practice—however hesitant and ambiguous— might be possible even if national policy were entirely hostile, and is, we suggest, even more likely in the current ambiguous policy context" (p. 484).

What is interesting about this action research project is that to a certain extent, participating teachers and university faculty members acknowledged various forms of students' differences. The authors, for instance, stated,

> The problem, teachers told us, was particularly acute in the area served by the school, where there had been a changing population, a lack of employment and a high level of instability within families, accompanied by low levels of parenting skills in some cases. These problems were further exacerbated in the case of boys by a "yob culture" within which boys influence each other adversely as they grow older, and by a cultural expectation of stereotypical gender roles. (Dyson & Gallannaugh, 2007, p. 480)

This quote exemplifies how in the action research reported in Dyson and Gallannaugh (2007), students' gender, ability, culture, and social class were closely intertwined. Teachers had deficit perspectives of male students coming from working-class families experiencing unemployment. Through engaging in the action research project, teachers began to question whether the assessments and practices of the schools tapped into these students' strengths. As a result, teachers developed practices that aimed to provide children with experiences missed from their lives and also practices that tapped into the skills these students already had.

How Is PD for Inclusive Education Studied? A Descriptive Profile of the Studies

In this section, we present general features of this research, including the publication trends over time, publication outlets, the methodological characteristics of studies, the forms of PD examined, and the impact of PD efforts on students.

Publication Trends

The research on PD for inclusive education received increasing attention in the mid-2000s, though we observed a decreasing trend in the last quarter of the decade (see Figure 1). Fifty two percent (n = 24) of the studies were published between 2004 and 2007, with 17% (n = 8) of the articles published in 2006 alone.

Regarding the publication outlets, the majority of articles (30%, n = 14) were published in special education journals such as *Learning Disability Quarterly* (3), *The European Journal of Special Needs Education* (3), *Research and Practice for Persons With Severe Disabilities* (2), *Exceptional Children* (1), *Exceptionality* (1), *Journal of Developmental and Intellectual Disability* (1), *Mental Retardation* (1), *Rural Special Education Quarterly* (1), and *Deafness Education* (1). A journal with an inclusive education focus such as the *International Journal of Inclusive Education* published 19.5% (n = 9) of the selected articles, and it was the journal that published the most research on professional development for inclusive education. Journals with a specific focus on teacher education, such as *Teacher Education and Special Education* (3) and *Teacher Education Quarterly* (1), published 9% (4) of the selected articles. Another 15% of the articles (7) were published in school psychology journals, such as *School Psychology International* (1), *Educational Psychology in Practice* (1), *European Journal of Psychology in Education* (1), *Educational Psychology* (2), *Journal of Applied School Psychology* (1), and *Intervention in School and Clinic* (1). Seven percent (n = 3) of the articles were published in journals with a specific focus in a subject area, such as the *Journal of Research in Science Teaching* (1), *Reading and Writing Quarterly* (1), and *School Science in Mathematics* (1). Finally, we found 19.5% (n = 9) of the articles in other

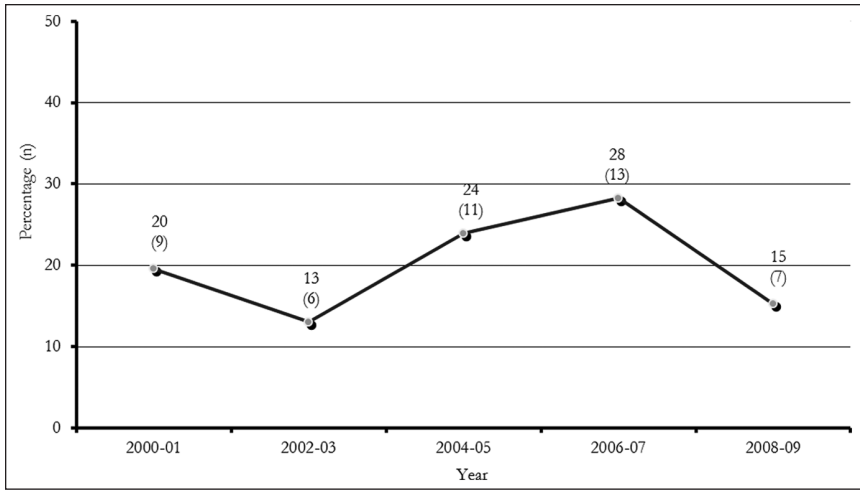

FIGURE 1. *Proportion (frequency) of studies by year of publication.*

educational journals such as *Cambridge Journal of Education* (1), *Education and Educational Policy* (1), *International Journal of Educational Management* (1), and the *International Journal of Educational Development* (1), among others.

Research Methods

Design. Teacher learning for inclusive education was mostly studied using qualitative methodologies. Forty-six percent (n = 21) of the studies relied on qualitative methodologies, 26% (12) relied on mixed designs, and 28% (13) relied on quantitative methodologies. The majority of studies using quantitative designs (62%, n = 8) were published in the second half of the past decade, whereas qualitative and mixed designs were consistently published throughout the 2000s.

Subject areas of focus. More than half (54%, n = 25) did not report a specific subject area of focus. Professional development efforts focusing on literacy (reading and writing) and science had the most attention in the literature. They accounted for 20% (9) and 9% (4) of the studies, respectively. Seven percent (3) of studies focused professional development efforts on two subject areas (reading and math; science and math), and 7% (3) contained a focus on four subject areas (science, English, math, and history) or on social studies.

Samples. There was great variation in sample sizes, ranging from 1 participant to 1,126. An analysis of participants' information yielded some interesting results. Fifty-four percent (25) did not report the level of education of the participants. The remaining 46% (21) included teachers with a level of education varying from only having teaching certificates to having doctoral degrees. On average, most of the teachers whose level of training was reported had a teaching certificate or a 4-year university degree. Fifty percent (23) of the studies did not report teachers' years of

teaching experience. The remaining studies included teachers whose years of experience ranged from 1 to over 30 years of experience.

Fifty-two percent (24) of the articles did not report any of the teachers' demographic information. Twenty-eight percent (13) of the articles reported only gender information, 18% (8) reported information on gender and race/ethnicity, and only 2% (1) reported information on gender, race/ethnicity, and socioeconomic status. Most of the teachers included in the studies that reported demographic information were females (67%). The ethnic background of the participants from studies who reported this information tended to be White (86%), with the remaining teachers' racial background being 10% African American, 3% Hispanic, and 1% Middle Eastern. The two studies that reported information about their participants' social class background described them as working or middle class.

Study participants were predominantly teachers in the primary grades. Forty-eight percent ($n = 22$) of the selected studies focused solely on teachers working in primary grades, whereas 17% (8) focused on teachers working in high school and 7% working in middle school. Another 9% reported that the teachers were working in K–12, and 2% (1) reported that they were working in middle and high school. Five studies indicated that their participants worked in primary and high school, whereas 4% (2) did not report the grade level in which their participants worked.

Data sources. All qualitative studies used some combination of interviews, observations, student and school documents, focus groups, and teachers' journals. Studies using mixed designs collected some combination of these data and also surveys, implementation checklists, and quantitative assessments of teachers' and students' knowledge. Studies based on quantitative methodologies relied heavily on surveys and questionnaires, with the exception of one study, which used an implementation checklist. Two studies that used surveys to collect information also used questionnaires. Interestingly, 52% ($n = 24$) of all studies that met criteria relied only on teachers' reports about their practices, rather than using either observations or video recordings of teacher practices.

Data analysis procedures. Forty-three percent ($n = 9$) of the qualitative studies did not clearly report their analysis procedures, 24% ($n = 5$) of the qualitative studies used grounded theory, and the remaining studies (7) used other forms of coding (e.g., categorical analysis using Miles and Huberman's [1994] approach, content analysis). Six studies using mixed methodologies relied on a combination of categorical analysis (Miles & Huberman, 1994) and descriptive statistics (e.g., percentages), whereas four of the mixed designs studies used a combination of categorical analysis and inferential statistics (e.g., z and t analysis, ANCOVA, χ^2). Two studies used a combination of descriptive statistics and descriptive qualitative analysis. The large majority of quantitative studies ($n = 12$) used inferential statistics (i.e., t analysis, ANCOVA, χ^2, multiple regression analysis, and factor analysis). We found one study that used a multiple baseline design (i.e., Clark, Cushing, & Kennedy, 2004).

Location. Fifty-two percent (24) of the studies were conducted in the United States, 15% (7) were conducted in the United Kingdom, with studies from England

comprising the larger majority ($n = 6$). From the 24 studies conducted in the United States, 5 were conducted in the Southern region, 4 in the Southwest, 4 in the East Coast region, 2 in Midwestern states, and 2 studies across various states. One study was conducted in the West Coast of the United States and 6 studies did not report their location. Eleven percent (5) of these studies were conducted in Australia, and 4% (2) were conducted in Greece. Studies conducted in other countries such as Canada, Cyprus, Netherlands, Turkey, New Zealand, South Korea, Indonesia, and Trinidad and Tobago each accounted for 2% (1) of the selected studies. Of note is that while studies conducted in the United States were distributed evenly across the decade, studies conducted in England and in other countries with a shorter history of inclusive education (e.g., South Korea, Greece, Cyprus, and Trinidad and Tobago) tended to be published between 2004 and 2009. This trend suggests a growing attention to this topic in countries with a brief history of inclusive education policies.

Types of PD Efforts

We found six types of PD for inclusive education: action research, on-site training, university classes, professional development schools, online courses, and a special educator's weekly newsletter on how to include children with disabilities. By far the most frequent (48%, $n = 22$) form of PD was action research. In these studies, faculty and teachers worked together in inquiry-based projects to improve inclusive practices. The length of these action research projects varied from 5 weeks to 3 years. Interestingly, 77% (17) of action research studies were published between 2004 and 2009, which may indicate an increasing interest in involving teachers in the construction of their own knowledge that is situated in their daily practices and struggles. Forty-five percent (10) of these action research projects involved university partnerships with individual teachers, and 55% (12) of these were schoolwide systemic efforts. Action research studies evaluated the impact of this type of PD on teacher learning by looking at changes in teachers' practices and beliefs and attitudes toward inclusive education and students with disabilities. To document these changes, action research studies included observations of teachers' practices and meetings, surveys and questionnaires, focus groups with teachers and administrators, and teachers' reflection journals. In general, these studies demonstrated the potential of action research as a form of PD effort to increase teacher confidence and efficacy using an inquiry approach to teaching, create schoolwide programs to foment inclusion, introduce to teachers practices such as differentiated instruction, and challenge teachers' deficit views of students who struggle to learn. Regarding the latter, however, studies presented mix results (e.g., Deppeler, 2006), demonstrating that changing teachers' deficit views of students who struggle to learn is a difficult task.

Eleven percent ($n = 5$) of the studies examined PD during on-site training on specific teaching strategies (e.g., partner reading) conducted by specialists (e.g., university professors) and followed up by classroom observations and feedback on the performance of the teaching strategy. Four of this group of studies consisted of university partnerships with individual teachers, whereas one was a schoolwide systemic effort. The length of these professional development efforts ranged from 20 weeks to 7 years. These studies focused on changes in teacher practice using observations and implementation checklists to evaluate the fidelity with which the

teacher implemented the strategy. These studies demonstrated that on-site trainings can improve inclusive practices (e.g., Clark et al., 2004), that teachers tended to use some but not all of the instructional practices introduced during training (e.g., Klingner, Arguelles, & Hughes, 2001), and that the level of fidelity of implementation varied across teachers (Klingner et al., 2003). Teachers reported that administrative support and instructional time to practice were important for implementing instructional practices with fidelity (Klingner et al., 2003).

Seven percent ($n = 4$) examined professional development efforts that consisted of a combination of university classes and university faculty observations and coaching in teachers' classrooms (Brownell, Yeager, & Sindelar, 2004; Coombs-Richardson & Mead, 2001; Jorgensen, McSheehan, & Sonnenmeier, 2007; Zozakiewicz & Rodriguez, 2007). The length of these efforts ranged from 10 months to 3 years, and all of these studies involved partnerships between universities and individual teachers. In addition, 11% (4) focused on workshops about developing inclusive practices. These professional development efforts tended to be shorter in length, ranging from 2 days to 2 weeks. Three of these professional development efforts focused on individual teachers, while one of these studies was a statewide workshop. These studies documented changes in teachers' practices and increases in knowledge about and positive attitudes toward inclusive education.

Four percent (2) of studies (Peters, 2002; Stockall & Gartin, 2002) examined the practices and beliefs of teachers working in professional development schools (PDS). These studies lasted 2 years and described, through ethnographic methods, teachers' practices and teachers' and administrators' understandings of inclusion. The PDS models consisted of collaborative partnerships in which a school and a university worked together to provide a clinical setting for preservice teachers, engage in continuous professional development for school staff, promote and engage in inquiry processes to advance knowledge tailored to school needs, and provide high-quality education for all students (Teitel, 2003). In Peters's (2002) study, for instance, the PDS created teacher and faculty teams based on their content areas of interest to "create effective learning communities whereby students (and teachers) would be motivated, engaged, active learners and to learn to teach for understanding whereby experiential, project-based, 'reality-based' curriculum and instruction interacted" (p. 293). The results of the work of these teams were the creation of an inclusive language program and a social skills and communication program for students with severe disabilities.

One study (Huai, Braden, & White, 2006) examined the impact of a 3-month online course on teachers' understandings of assessment accommodations and alternative assessments. This course lasted 3 months and involved individual teachers and parents. The online course improved teachers' knowledge and self-efficacy of assessment accommodations. Finally, another PD effort (Kim, Park, & Snell, 2005) had special educators create a weekly newsletter on how to include children with disabilities in the general education classroom for part of the day for general education teachers. Using a pretest and posttest control group, the study demonstrated an improvement on general educators' self-efficacy and attitudes toward inclusive education.

Impact of PD Efforts on Students

Eighty-nine percent of the studies ($n = 41$) *did not* examine the impact of professional development for inclusive education on students. Two studies (i.e., Alton-Lee et

al., 2000; Kim et al., 2005) reported the impact of the PD effort on positive attitudes of students without disabilities toward their classmates with disabilities. Another study (Argyropoulos & Nikolaraizi, 2009) reported the increasing participation of a student with a hearing impairment in the general education classroom discussion and group activities. Two studies (i.e., Deppeler, 2006; Layne et al., 2008) reported the academic achievement gains for all students that came as a result of teachers engaging in action research projects with university faculty. Both studies demonstrated that academic achievement gains were the greatest for students who had low levels of academic achievement prior to the action research project. With exception of Kim et al. (2005), PD efforts that reported their impact on students were based on action research projects.

How Is Teacher Learning Examined in PD Research for Inclusive Education?

We found two approaches to gauging teacher learning, namely, outcome-based (OB) and process-based (PB) studies. Each of these groups of studies accounted for half (n = 23) of the total selected studies. The publication of these groups of studies was consistent across the 2000s. In the following sections, we describe and provide examples for OB and PB studies.

Outcome-Based Studies

OB studies reported the end results of the PD efforts. These studies were based on cognitive or behavioral perspectives on teacher learning. In both of these perspectives, the unit of analysis is the individual teacher. Interestingly, OB studies, with one exception (i.e., Zozakiewicz & Rodriguez, 2007), focused on students' ability differences. Seventy-six percent of the OB studies were on-site training or university classes with classroom feedback, which tended to be of shorter length. The majority of OB studies (87%) reported some aspect of teachers' demographics, level of training, or years of teaching experience. All but two OB studies (i.e., Lloyd, 2002; Zozakiewicz & Rodriguez, 2007) used either quantitative or mixed designs.

Nineteen (83%) of the OB studies were based on cognitive perspectives to teacher learning. These studies used either pre-post measures or regression analysis of individual teachers' knowledge and beliefs about students with disabilities, self-efficacy, and attitudes toward inclusion as a proxy to gauge teacher learning. These studies were attentive to thought process and beliefs guiding behaviors. Two of these studies used interviews, focus groups, teachers' class assignments, and field observations to gauge changes on teachers' understandings of inclusion and changes in practice that came as a result of these changes (i.e., Lloyd, 2002; Zozakiewicz & Rodriguez, 2007).

For instance, Sari (2007) examined the impact of 21 hours of professional development on teachers' attitudes toward deaf students educated in general education classrooms. The author used a quasi-experimental design, randomly assigning teachers to control (n = 61) and experimental groups (n = 61), and collected pre- and posttest measures using the The Opinions Relative to Mainstreaming survey and a competency in teaching students with deafness survey designed to measure the knowledge of teachers of deaf students. A t-test analysis yielded a significant difference between the experimental and control groups' posttest scores on both the competency test and the opinion relative to mainstreaming survey. The

authors concluded that the in-service training had a positive effect on teachers' attitudes and knowledge about deaf students.

A similar group of studies compared the impact of various forms of professional development (e.g., master's degree, on-site training) on teachers' attitudes toward inclusion and on teachers' self-efficacy (e.g., Avramidis, Bayliss, & Burden, 2000; Avramidis & Kalyva, 2007; Edwards, Carr, & Siegel, 2006; Ernst & Rogers, 2009; Miller, Wienke, & Savage, 2000; Van Reusen, Shoho, & Barker, 2000). These studies accounted for 30% of the OB studies. The authors of these research studies used quantitative designs, relying on surveys and questionnaires and using multiple regression analysis and analysis of variance. The results of these studies demonstrated the importance of long-term professional development to promote teachers' positive attitudes toward inclusion. In a study of Greek general educators' attitudes toward the inclusion of students with disabilities, for instance, Avramidis and Kalyva (2007) demonstrated that extensive training lasting at least 1 year on teaching students with disabilities had a greater impact on teachers' positive attitudes toward inclusion than short-term technical courses. Similarly, Kosko and Wilkins (2009), in a study conducted in the United States, reported that "at least 8 hours of professional development in a 3-year time frame was related to an increase in teachers' perceived ability to adapt instruction, more than twice the effect of less than 8 hours" (p. 1). Yet, in a study conducted in the United Kingdom, Woolfson and Brady (2009) found no significant relationships between further professional development and teachers' self-efficacy. These differences may be attributed to using different surveys and scales, differences in professional development efforts across countries, and the ways teachers perceive disabilities in each nation.

Four (22%) OB studies were based on a behavioral perspective on teacher learning. These studies used checklists and observations to examine teachers' implementation of the acquired knowledge and techniques during the on-site training provided by faculty members (Bryant, Linan-Thompson, & Ugel, 2001; Clark et al., 2004; Klingner et al., 2001, 2003). Bryant et al. (2001), for instance, conducted a study to examine professional development activities aimed at helping content area and special education middle school teachers integrate reading strategies into their subject area. Six special and content area teachers participated in a 4-month professional development training to support teachers' integration of three reading strategies based on word identification, fluency, and comprehension skills. The researchers were also interested in general and special education teachers' individual knowledge about their struggling readers and the reading strategies they used to help these students comprehend content area text. The researchers collected data from pre-post interviews, in-service evaluation forms, intervention validity checklists, and a promoters- and barriers-to-implementation checklist. These two checklists aimed at looking at issues of fidelity of implementation and the obstacles in implementing the practices. Bryant et al. reported that the ratings from the checklist did yield partial implementation fidelity for word identification strategies and collaborative strategic reading, whereas partner reading yielded the highest implementation fidelity. Regarding the obstacles for implementation, the teachers were overwhelmed by issues such as the effects of low socioeconomic status on student learning and the academic needs of English language learners (ELLs). The teachers were overwhelmed with the pressures of teaching struggling

readers, particularly students with disabilities; teaching the curriculum; getting students ready for their state's high-stakes assessment; and providing adaptations for struggling students.

Process-Based Studies

These studies examined teacher learning by providing information about the sequences of actions taken by the participants, the struggles and tensions that emerged throughout the process, and the actions and events occurring at the end of the process. Although these studies presented the outcomes of their professional development efforts, they claimed that inclusive education is an ongoing process that does not have final outcomes. The units of analysis of OB were groups of teachers working with tools (e.g., the Index for Inclusion) toward inclusive practices (e.g., Ainscow et al., 2006b; Deppeler & Harvey, 2004; Forlin, 2004; Hodson, Baddeley, Laycock, & Williams, 2005). PB studies draw, at least to some extent, from concepts that branched off sociocultural theory, such as communities of practices (Lave & Wenger, 1991). Lave and Wenger (1991) argued that learning involves changing participation in communities of practice. This view of learning frames teacher participation as ways of doing and belonging in situated practice (Lave & Wenger, 1991). In PB studies, learning was gauged by examining changes in teachers' practices and participation within their communities of practice. The unit of analysis thus was teachers and researchers working together in communities of practice. Fifty-two percent of PB studies defined inclusive education as pertaining to all students, whereas the remaining studies defined inclusion as pertaining only to students with diverse abilities. The majority of PB studies (74%, $n = 14$) were based on action research projects.

Carrington and Robinson (2004), for instance, reported the processes and outcomes of a collaborative action research involving an Australian primary school and university staff. The purpose of the study was to examine how the school in collaboration with the authors used the Index for Inclusion, incorporating a critical friend and peer-mentoring model. The authors collected data with focus groups interviews, reflective journals, and surveys, and they reported that—guided by the Index for Inclusion—the school staff collected information to identify priorities for development. These areas included preventive behavior management, strategies to increase on-task behavior and diminish students' anger and frustration, and teaching strategies to increase independent learning.

Focusing on these areas, the authors designed professional development activities. The school staff engaged in various group activities and professional development events that focused on the cyclical and spiral processes of planning, implementation, and review. This work involved revising the school's beliefs and values underpinning its policies and practices. Teachers reported that being in control of their own learning, having a critical friend, and open collaboration with peers enhanced their ability to solve the identified school issues. Survey data indicated that 84% of school staff indicated that having a supportive school community was as important as raising academic achievement. Staff members understood that an inclusive school culture that is tolerant of differences must cater to the needs of all students. Staff members, in addition, reported that although their students were challenging, they could make a difference in their learning. Carrington and Robinson (2004) reported that the Index for Inclusion facilitated communication and problem solving in the school community. The study did not report student data.

In another study, Davies, Howes, and Farrell (2008) drew from the findings of an action research project to develop inclusive practices in secondary schools to examine the underlying processes that facilitated and constrained the collaboration of teachers and school psychologists as they created inclusive practices. Data collection procedures included questionnaires, pre- and postinterviews, and focus groups. Using Cultural Historical Activity Theory (CHAT; Engeström, 1987), the authors analyzed the tensions that emerged from the work done by teachers and school psychologists. CHAT emphasizes the role of activity systems in mediating people's work and learning. Activity systems are complex social organizations that involve subjects (e.g., teachers), their communities (e.g., school staff), artifacts (e.g., Index for Inclusion), outcomes (e.g., learning to be inclusive teachers), division of labor (e.g., who does what), and rules (e.g., school policies; Engeström, 1987).

Davies et al. (2008) reported that there was a tension in the activity system between the subjects (i.e., teachers) and the tools of the activity system (i.e., methods for teaching). As teachers felt pressure to raise students' test scores, they developed methods tailored to achieve this goal, which left little space for other methods and forms of learning and reflection. There was also a tension between the participating teachers and their role in the school (i.e., division of labor); as teachers felt that they were solely responsible for the classroom, they were less likely to engage in collaboration and reflection with other peers. Teachers' perceptions of pupils' difficulties, furthermore, were based in a deficit perspective in which the problem was within the child and had to be fixed by specialists (e.g., school psychologists and speech pathologists).

This division of labor created tensions as teachers engaged in the action research and were challenged by constructivist rather than clinical views of student learning struggles. Regarding school psychologists, the authors reported tensions between an expert-based view of the psychologist's role and the collaborative work that is needed while transforming schools. School psychologists' work during the action research was in tension with the school districts' expectations of their time allocation and related deadlines based on individual caseloads. Teachers also had difficulties grasping action research practices, as they wanted to rely on school psychologists' expertise rather than engage in reflection and dialogues about their practice. Davies et al. (2008) concluded that

> CHAT usefully focuses attention on the centrality of the artifacts that mediate the relationship between the various subjects and objects that are involved in this action research project. It also usefully highlights the cultural-historical roots of these social learning systems; their multi-voiceness, and the tensions and contradictions that are an inevitable result of activities that take place in and between the systems. (p. 414)

Davies et al. examined teacher learning with a refined lens that accounted for the role of artifacts and institutional contexts. This study (as well as Howes, Booth, Dyson, & Frankham, 2005) moves beyond focusing on individual teachers, accounting for the various factors that mediate teachers' learning and practice.

Discussion and Recommendations for Research

The purpose of this review of the literature on PD research for inclusive education was to answer three questions: (a) How is inclusive education defined in PD

research? (b) How is PD research for inclusive education studied? and (c) How is teacher learning examined in PD research for inclusive education? In this section, we discuss and critique the findings for each of these questions and advance recommendations for a research agenda based on an intersectional approach to difference and exclusion (Crenshaw, 1991, 1995; Hancock, 2007) and on research on boundary practices (e.g., Akkerman & Bakker, 2011).

How Is Inclusive Education Defined in PD Research?

A key purpose of this literature review was to examine how PD research has defined inclusive education. Three definitions of inclusive education were found in the selected articles. We found a group of studies that defined inclusive education as related only to ability differences, a group of studies that were concerned with changing the curriculum to take into account gender and cultural differences, and a third group of articles defining inclusive education as a process of overcoming barriers to participation and learning for all students (students with diverse abilities, cultures, gender, and racial/ethnic background).

The studies that defined inclusive education focusing on ability differences comprised the largest group (70%). The enduring relationship between inclusive education and students with disabilities is further supported by the fact that a large proportion (45%) of PD studies for inclusive education was published in special education and school psychology journals. This finding supports previous reviews that found inclusive education studies exclusively attended to students at risk, having learning difficulties, or with special educational needs (Dyson, Howes, & Roberts, 2002). Artiles et al. (2006) pointed out that this is explained by the fact that the 1994 Salamanca Statement endorsed inclusion as an important benefit for special education. The association between inclusive education and special education was particularly stronger in countries with special education policies before 1980 (e.g., United States). Indeed, 87% of the reviewed studies conducted in the United States focused on training teachers to include students with disabilities in general education classrooms. This is not surprising as the dominant discourse in the United States is that inclusion is about placement and service delivery models for students identified with disabilities (Bagliery, Bejoian, Broderick, Connor, & Valle, 2011). This literature review, however, demonstrated that the United States is not alone in this trend as studies conducted in England, Greece, Australia, and South Korea, among others, reported similar kinds of teacher training.

Interestingly, the majority (80%) of studies focused on PD efforts that support teachers to address a single form of students' difference. This was reflected in the group of studies focusing on ability differences and in the group of studies focusing on cultural, racial, *or* gender differences. Borrowing from Hancock (2007), these two groups of studies were based on a *unitary* approach to difference and exclusion. The unitary approach presumes "emphasis on a single category of identity or difference or political tradition as the *most* relevant or *most* explanatory" (p. 67). In this approach, one form of difference (e.g., ability) "reigns paramount among others and is therefore justifiably the sole lens of analysis" (p. 68). The unitary approach, in addition, assumes that the development of one form of difference (e.g., ability) has developed independently from other forms of difference (e.g., race; Hancock, 2007). It considers difference as static and enduring, fitting uniformly all members embodying that form of difference (Hancock, 2007).

Yet, ability, race/ethnicity, language, gender, and social class differences have historically been intertwined and related to deficit thinking throughout the history of schooling (Artiles, 2011). The interlocking of disability and race has been damaging for nondominant groups and has contributed to justify slavery, eugenics, colonialism, and educational segregation (Erevelles & Minear, 2010). For instance, students from marginalized cultural, racial, linguistic, and social class groups have historically been disproportionately placed in segregated institutions and programs (e.g., special education, asylums, mental health institutions) for individuals with disabilities (Artiles, Waitoller, & Neal, 2010). As Apple (2009) noted, these have been strategies to manage and control diverse populations. Some students thus experience multiple and compounding forms of exclusion. Unfortunately, PD research based on a unitary approach to difference assumed that students' exclusion was based on one factor, rather than in the interaction of multiple ones (Crenshaw, 1991). Consequently, these PD efforts did not shed light on how teachers learn to address the needs of students that live with complex and intersecting forms of exclusion.

Treating forms of difference in a fragmented fashion produces partial solutions that compete for recognition and resources (Hancock, 2007). PD efforts based on a unitary approach to difference and exclusion are reinforced by how most education departments are structured at many U.S. universities. General and special education programs for teacher preparation (both in- and pre service) tend to be designed and regulated by different departments with little collaboration between them (Pugach, Blanton, & Correa, 2011). This practice is not unique to the United States, but it is also found in other countries such as Germany, South Africa, Finland, and Norway, among others (Hausstätter & Takala, 2008; Waitoller & Kozleski, 2013). As Pugach, Blanton, and Florian (2012) noted, the bilingual, culturally responsive, social justice, and special education teacher education communities have had limited engagements with each other, with the exception of some dual certification programs (Pugach & Blanton, 2012) or unified programs housed in the same department (e.g., Florian & Rouse, 2009; Kozleski & Waitoller, 2010). Preservice teachers thus may enroll in distinct courses addressing the needs of students with diverse abilities, culturally responsive pedagogies, and teaching ELLs with little integration among themselves or with teaching methods courses. This is aggravated by the fact that professional organizations (e.g., NCATE, Council for Exceptional Children) and states' certification and accreditation policies hold separate learning standards (e.g., standards for special educators, bilingual educators, and general educators). These bifurcations across university departments and learning standards result in disparate opportunities for teacher learning about intersectionalities and reinforce the disjointed perspectives that teachers use to understand students' complex identities and educational needs (Waitoller & Kozleski, 2013).

The third group of studies broadened the definition of inclusive education to a process of overcoming barriers to participation and learning for all students. These studies attempted to examine how teachers address complex forms of exclusion. Dyson and Gallannaugh (2007), for instance, examined how teachers begin to change their deficit perspectives of male students coming from working-class families who were underachieving in academic tests. Yet, Dyson and Gallannaugh, as the other studies in this group, did not examine compounding forms of exclusion, which resulted in a general rather than a nuanced understanding of how

teachers address specific intersections of student differences. In addition, this group of studies did not focus systematically on how school staff addressed language differences. The massive immigration waves that occurred in the past 30 years have changed the ethos of schools in the developed world, bringing increasing numbers of students whose language differs from the dominant language of schools. In the United States, for instance, ELL enrollment in schools increased from 9% to 21% between 1979 and 2008 (National Center for Education Statistics, 2012). Unfortunately, ELLs who receive special education services tend to receive less instruction in their home language than their general education peers (Zehler et al., 2003). In addition, ELLs are more likely to be identified for special education and placed in more segregated environments than their peers for whom English is their first language (Artiles, Klingner, Sullivan, & Fierros, 2010; de Valenzuela et al., 2006; Sullivan, 2011).

PD research for inclusive education can benefit significantly from the use of an *intersectional* approach (Crenshaw, 1991, 1995; Hancock, 2007) to difference and exclusion. Intersectionality (Crenshaw, 1989, 1991), born out of critical legal studies, provides a lens to uncover interacting forms of discrimination. It expands our understanding of the complex and interacting forms of exclusion experienced by students who may be identified for special education and whose language differs from the dominant language in school or may come from nondominant racial or socioeconomic backgrounds. An intersectional standpoint assumes that forms of difference interact and mutually constitute each other (Hancock, 2007). All forms of difference are of equal importance, and the relationships among these forms generate important research questions (Hancock, 2007). Unfortunately, disability/ability has been omitted as a critical form of difference in discussions of intersectionality in spite of the many contact points across these forms of difference (Artiles, 2003, 2010; Ervelles & Minear, 2010). Inclusive education can serve as a catalyst to examine and address forms of exclusion related to intersections of disability/ability, race, gender, language, and social class differences. Following this rationale, PD research for inclusive education should examine how teachers develop robust understandings about how various forms of exclusion interact, affecting their students' educational experiences.

The definition of inclusive education advanced earlier in this article based on Fraser's (1997, 2008) work provides guidance for an intersectional approach to difference and exclusion in PD research for inclusive education. The dimensions of justice advanced by Fraser (i.e., representation, recognition, and representation) are not mutually exclusive. Barriers to access and to meaningful participation in education are based on compounding forms of injustice based on the misdistribution of economic and social goods (e.g., underfunded schools), the misrecognition of the cultural repertoires of certain groups of students (e.g., Latino/a, African American, and students with disabilities), and the limited access that marginalized families and students have to represent themselves in educational decisions such as those made during Individualized Education Plan (IEP) meetings. Considering these intricacies, PD research efforts should examine how teachers learn to engage with transformative remedies (Artiles, Kozleski, & Gonzalez, 2011; Fraser, 1997). These are remedies that focus on the root causes rather than on the outcomes of exclusion (Fraser, 1997, 2008; Fraser & Honneth, 2003). The argument for a transformative agenda for inclusive education has been raised for some time since

implicit in the idea of inclusion is the notion of assimilation into a mainstream (Artiles, Harris Murri, & Rostenberg, 2006; Artiles & Kozleski, 2007). Mitchell (2009) explained that to "request inclusion is to underscore one's desire for assimilation into a norm that supports the perception of disability as an alien or exceptional condition. A community's marginality is implicitly underscored by the request for inclusion itself" (p. xi). Hence, a transformative agenda in inclusive education should encompass participatory and instructional strategies that address individual and group forms of misdistribution as well as the historical and structural forms of exclusion (Artiles et al., 2006; Artiles, Kozleski, & Gonzalez, 2011).

Dumas (2009) argued that PD efforts should embrace principles of critical multiculturalism (CM; Giroux, 1997; Leonardo, 2005) as a form to engage with transformative remedies to exclusion. CM focuses on the role of government and market forces in the devaluation of the cultural assets of certain groups of people and questions the ideologies that inform institutional practices that privilege some groups over others (Dumas, 2009). Yet, critical multiculturalism has mostly focused on racial, cultural, and economic issues, paying little attention to issues of disability/ability. An intersectional approach to PD research for inclusive education could examine how teachers question and unravel the historical and intertwined relationships of disability/ability with other forms of difference (e.g., race, ethnicity, gender, and class). In addition, PD research could examine how as a result of that questioning teachers can (or cannot) enhance and cross-pollinate current pedagogies that defied normative ways of learning and teaching and that have remained as parallel efforts such as universal designs for learning (UDL; Rose, Meyer, & Hitchcock, 2006) and CM (Giroux, 1997; Leonardo, 2005). UDL has the potential to complement CM as it moves teachers away from assimilating students to normative ways of teaching and learning toward considering the spectrum of human diversity as a design for instruction from its inception. UDL provides curriculum design principles to create flexible learning environments where all students can access, participate, and learn (Rose et al., 2006). Yet, UDL falls short of guiding teachers and students to question and dismantle forms of exclusion that they may experience in their communities and personal lives. Cross-pollinating ULD with CM could facilitate teachers' and students' dismantling of the "myth of the normal child" (Bagliery et al., 2011, p. 2124), that is, unraveling ideologies of difference such as Whiteness (Leonardo, 2009) and ableism that position some students as normal while placing others in the margins and in need of being included in a taken-for-granted educational norm that did not have them in mind in the first place. A critical and reflective stance toward the myth of the normal child is necessary to create learning environments in which all cultural and linguistic practices and all kinds of ability are legitimate forms of participation and vehicles for learning. We found two studies that used UDL in the professional development efforts (i.e., Dymond et al., 2006; Kirch, Bargerhuff, & Turner, 2005); the studies were based on a unitary approach to difference and exclusion.

Furthermore, PD research for inclusive education could examine how teachers face and address tensions inherent in efforts to tackle exclusions based on both misdistribution and misrepresentation (Dumas, 2009; Fraser & Honneth, 2003). As Leonardo noted (2010), teachers are in a unique position to transform education as they have a captive audience. They cannot only implement and innovate pedagogies that provide access to opportunities to learn while recognizing and valuing

student differences, but they can also influence student thinking about issues of justice that affect their daily lives. Thus, teachers can generate civic capacity and increase *all* students' intellectual development and participation (Leonardo, 2010).

How Is PD for Inclusive Education Studied?

The descriptive profiles of articles provided interesting insights. Fifty-two percent of the studies were conducted in the United States and 15% were conducted in the United Kingdom. We found, however, an increasing number of studies published in countries without a long tradition of inclusive education such as Cyprus, Netherlands, Turkey, New Zealand, South Korea, and Indonesia, among others. This indicates an increasing attention across the globe to preparing teachers as a key element in developing inclusive education systems. This trend is also supported by recent edited volumes focusing on international approaches to teacher preparation for inclusive education (Forlin, 2010; Forlin & Lian, 2008). Yet, this literature tends to focus on single countries rather than using comparative designs. Future research should turn to comparative models to examine how sociocultural, political, and historical differences among countries mediate how professional developments are designed, implemented, and contribute to teachers' trajectories as they become more inclusive (Artiles, Kozleski, & Waitoller, 2011).

Research on professional development for inclusive education tended to describe methods in rather ample terms, which made the rigor and trustworthiness of this knowledge base difficult to examine. For instance, 43% of these studies did not clearly report their analysis procedures, and most studies omitted information about key identity markers of study participants such as gender, race/ethnicity, social class, and information about their level of training and years of teaching experience. This is problematic because these indices provide information about teachers' backgrounds and experiences that may mediate their learning (Bransford, Brown, Cocking, & Donovan, 2000). For instance, teachers' experiences in their first 3 years of practice can shape significantly their trajectories and identities (Feiman-Nemser, 2001). District policies shape how beginning teachers learn about what is important and deserves teachers' attention (e.g., accountability-based assessments), mediating how teachers think about and understand their profession (Grossman & Thompson, 2004).

Furthermore, 82% of the teaching force in the United States is White, and 75% of teachers are female (National Center for Education Statistics, 2012). Yet, schools are more linguistically and racially diverse than ever before (National Center for Education Statistics, 2012). Structural inequalities in school funding and racial and socioeconomic isolation of schools, along with the concomitant lower teacher quality in such schools, have deepened the gaps in learning opportunities between marginalized students and their counterparts. Considering these facts, future PD research for inclusive education should examine how the interplay between teachers' key identity markers and school political and sociocultural contexts mediate teacher learning for inclusive education.

In addition, more than half of the examined studies did not report a specific subject area of focus. This is problematic because in part, teacher learning involves experiences with specific subject matter (Bransford et al., 2000). Learning to be a teacher demands making meaning of different vocabulary, syntax, procedures, experiences, and patterns of resources that vary across subject areas (Gee, 2006).

Future PD research for inclusive education should provide nuanced information about research designs, account for key identity markers, and ground the examination of teacher learning in subject-specific PD efforts.

Action research was by far the most frequent (47%) form of professional development studied. The majority of these studies were published in the second half of the decade. This can be interpreted as a response to critiques to traditional PD models (e.g., on-site training, workshops) for presenting irrelevant information and for being decontextualized from teachers' and schools' needs and practices (Wilson & Berne, 1999). Teachers ranked classroom practice as the most important site for leaning (Smylie, 1989). In addition, researchers have identified as effective features of PD programs many aspects of action research projects, such as shared ownership of learning activities; ongoing problem solving; generation of knowledge focusing on practice, reflection, and engagement with inquiry; and feedback and collaborations with peers (Timperley & Alton-Lee, 2008; Wilson & Berne, 1999).

The action research projects examined in this literature review were powerful efforts to engage school staff in an examination of their own practices and beliefs about struggling learners. Yet, only four of these studies documented the impact of these PD efforts on student outcomes. This is interesting considering that action research projects tend to focus on student learning. Future research should investigate how PD efforts for inclusive education shape student experiences in schools. As Timperley and Alton-Lee (2008) reminded us, part of the reason to be concerned with the impact of professional development on students is the robust evidence that well-intended and caring teachers can negatively affect their students. Similar is the concern for policies that aim to improve educational experiences for all students but end up having a negative impact, counteracting their initial goals. This research should not be limited to quantifiable academic outcomes (e.g., standardized assessments), but also to the kinds of participation afforded to all students in the classrooms, the quality of relationships among teachers and students, opportunities to learn and develop meaningful identities afforded to students, and other outcomes valued by students, families, and the wider community that the school serves (Timperley & Alton-Lee, 2008).

How Is Teacher Learning Examined in PD Research for Inclusive Education?

Research on PD efforts for inclusive education examined teacher learning by either focusing on the outcomes of such PD efforts (OB studies) or studying the processes and changes that teachers experienced as they participated in PD efforts (PB studies). In the following sections, we discuss and critique how learning was examined in these two groups of studies. Finally, we draw from research on boundary practices (Akkerman & Bakker, 2011; Star & Griesemer, 1989) to outline a research agenda that takes into account the complex learning process occurring in partnerships (e.g., schools and universities) for inclusive education.

Outcome-Based Studies

OB studies were based on cognitive and behavioral perspectives on teacher learning. In these studies, changes in attitudes toward inclusion and students with disabilities, implementation of certain practices, or knowledge gains about inclusive practices were used as proxies to gauge teacher learning. OB studies relied

heavily on individual teachers' reports; they were informed by a "bounded individual view of learner" (Conway & Artiles, 2005, p. 27).

By placing a heavy emphasis on individual outcomes, OB studies ignored the complex processes that take place as individuals interact with other colleagues and with schools' institutional arrangements in daily school practices. OB studies did not provide nuanced analyses of teachers' trajectories and the mediating factors that shaped their learning. Greeno (2006) stated "it is virtually meaningless to ask whether someone has learned a particular topic . . . without taking into account the kind of activity system in which a person's knowledge is to be evaluated" (p. 80). Socially organized activities afford and constrain teachers' opportunities to learn. A complex understanding of learning demands a situative approach (Greeno, 2006), that is, that "instead of focusing on individual learners, the main focus of analysis is on activity systems: complex social organizations containing learners, teachers, curriculum materials, software tools, and the physical environment" (Greeno, 2006, p. 79).

In this sense, OB studies were politically and institutionally decontextualized. They examined teacher outcomes without situating teacher practices in the political and ideological context of the institutions in which they worked. A PD research agenda concerned with inclusion needs to examine learning as it occurs amid the constraints and affordances of activity systems that tend to include some students while excluding others. How are teachers' understandings of and attitudes toward students who experience compounding forms of exclusion mediated by the institutional contexts in which they work? How did teachers adapt the practices introduced in PD efforts to the particular cultural and political contexts of their classrooms? OB studies left these questions unanswered.

Process-Based Studies

The unit of analysis of this research was groups of teachers and university researchers working with tools (e.g., the Index for Inclusion) toward inclusive practices. PB studies were concerned with the transformation of the entire school community and used concepts linked with sociocultural theory, such as communities of practices (Lave & Wenger, 1991). PB studies, however, examined the process of PD efforts without providing a robust understanding and theorization of how teacher learning occurs amid partnering institutions (e.g., school and university). A possible explanation for this shortcoming is that PB studies relied heavily on descriptive accounts of events. Carrington and Robinson (2004), for instance, relied heavily on descriptive accounts of the processes teachers and researchers went through while using the Index for Inclusion; however, there was little theoretical interpretation and conceptual refinement. As a result, Carrington and Robinson presented a monolithic view of the process of building an inclusive school culture and a general explanation of how teachers participated and learned in PD activities. Carrington and Robinson, for instance, reported that in a survey conducted in a professional development activity 42% of the participants responded that there was an emphasis on valuing difference rather than conforming to what is normal, whereas 49% was not sure about this statement and 9% disagreed with it. How were these disagreements negotiated? Did all teachers buy into these priorities, and therefore into the action research project's purpose? How did university staff enter and negotiate a space in which there was disagreement? How do

two different communities (e.g., school and university) that come together with different kinds and levels of expertise, different levels of commitment and understanding to the task at hand, and different policies, cultural histories, and toolkits negotiate and engage in joint activity?

Using CHAT, Davies et al. (2008) provided more detailed information about the tensions that emerged from the interpersonal processes of transforming schools for inclusive education, making visible the difficulties that arise when professionals from different fields and/or institutions come to work together. On the other hand, Davies et al. relied solely on teachers' reports (e.g., questionnaires, focus groups, interviews) to support their findings. Evidence about how tensions were played out in situated practice was not available, thus leaving key aspects of teacher learning unexamined—for example, how did teachers and school psychologists negotiate their expertise through their interactions in meetings? What kind of resources did they use to negotiate their expertise? How did their different sets of expertise enhance or constrain each other's professional learning? What kinds of artifacts facilitated their collaboration and how? To answer these questions and overcome the shortcomings of both OB and PB studies, we propose to examine teacher learning and identity formation as occurring within overlapping institutional boundaries (e.g., schools and universities).

Toward a Situative Analysis of Teacher Learning for Inclusive Education in Boundary Practices

We propose a line of research that examines closely teacher learning for inclusive education in situative boundary practices (see also Waitoller & Kozleski, 2013). A *boundary practice* is a practice that has "become established and provides an ongoing forum for mutual engagement" between two communities of practice (e.g., a teacher development program and public school; Wenger, 1998, p. 114). Encounters in which teachers work with university faculty using the Index for Inclusion (Booth & Ainscow, 2002) or in which teachers receive in-service workshops could be understood as a situative boundary practice. By situative, we mean that to understand the work achieved in boundary practices, we must account for the activity system in which they are observed (Greeno, 2006).

The knowledge, understandings, and activities of complex communities of practice such as schools and universities tend to be multivoiced, ill-defined, and nonstable (Engeström, 2001). In boundary practices, this becomes more evident as different communities of practice share and negotiate the goals and artifacts of their joint activity. By artifacts we refer to "an aspect of the material world that has been modified over the history of its incorporation . . . artifacts are simultaneously ideal (conceptual) and material" (Cole, 1996, p. 117). Max (2010) noted that in partnership work the goals of each institution tend to coexist within the boundary practice, which creates tensions. Efforts to resolve such tensions require questioning the existing practices, artifacts, and goals; modeling new practices and artifacts; and implementing and reflecting upon new models of practice (Engeström, 2001). The result is a more complex activity system that includes the shared knowledge, artifacts, and goals of the communities working in boundary practice. This ongoing examination and expansion of the activity system is called *expansive learning* (Engeström, 1987). In other words, "expansive learning should be understood as the construction and resolution of successively evolving tensions or con-

tradictions in a complex system that includes the object of objects, the mediating artifacts, and the perspectives of the participants" (Engeström, 1999, p. 385). PD for inclusive education can be organized to constitute fertile grounds for expansive learning as schools and universities (or other partnering institutions) negotiate the content and form of the PD effort, expanding their shared artifacts (e.g., understandings of action research and inclusive education). Future PD research for inclusive education should examine how expansive learning occurs in boundary practices and how this affects teacher learning. To achieve such a task, PD research for inclusive education must move beyond an exclusive reliance on teacher reports, surveys, and questionnaires and examine situated practices in which both communities meet to improve the educational experiences for all students (e.g., meetings of school and university professionals, visits of university faculty to teachers' classroom, and mentoring sessions). The use of video and audio will provide a richer data corpus to examine learning in situated boundary practices.

Understanding PD efforts for inclusive education as boundary practices is critical for an intersectional approach to difference and exclusion (Waitoller & Kozleski, 2013). As we noted earlier, an intersectional approach acknowledges compounding forms of exclusion and calls for complex solutions. It underscores the need to draw from interdisciplinary perspectives that afford deeper theoretical examinations and alternative units of analysis. Having boundary practices as units of analysis allows researchers to examine how professionals from different institutions, fields, and disciplines share and enrich each other's expertise, innovating new practices and tools to address the needs of students who experience compounding forms of exclusion. For instance, future research could examine how general, bilingual, and special education teachers collaborate in action research projects to dismantle intersecting forms of exclusion experienced by ELLs with disabilities.

A future research question for PD research for inclusive education is how professionals with different institutional (e.g., schools and universities) and professional (e.g., general, bilingual, and special education) affiliations work and learn together in boundary practices to address the educational needs of students that experience various forms of marginalization. This kind of analysis points to the work of *boundary brokers* (Akkerman & Bakker, 2011) and to the artifacts used to facilitate collaboration and learning across boundaries—*boundary objects* (Star & Griesemer, 1989).

Boundary Brokers

In a professional development effort, university faculty and teachers with different expertise (e.g., special education, bilingual education) become boundary brokers of the artifacts and practices of their respective communities of practice (Waitoller & Kozleski, 2013). The key role of boundary brokers is to connect practices and tools across overlapping communities, facilitating the transactions and joint work of these communities (Wenger, 1998). The role of brokers deserves a close examination as these actors embody the disjunctives and tensions between communities (Akkerman & Bakker, 2011).

The studies reviewed in this article fell short of providing a detailed documentation of the experiences of boundary brokers. Future PD research for inclusive education should generate knowledge about how university faculty and school

professionals create connections across their practices and how artifacts from one community are introduced into the other one. This line of research should pay attention to how brokers resolve tensions and differences among communities in order to serve students who experience multiple forms of difference. The concept of *relational agency* advanced by Edwards (2007) provides a tool to examine and understand how boundary brokers resolve the ambiguities of boundary practice. Relational agency is the capacity to engage with others to expand the object of the joint activity (e.g., developing teacher capacity for inclusive education) by recognizing motives and resources that others bring to the partnership and by aligning one's responses with the responses of others to act upon the expanded object of the partnership (Edwards, 2007).

For instance, we mentioned that many bilingual education, culturally responsive education, social justice education, and special education teacher education programs have produced parallel efforts with little cross-pollination. In part, this is because of the disciplinary and epistemological divides among these communities (Cochran-Smith & Dudley-Marling, 2012; Rueda & Stillman, 2012). The concept of relational agency, for instance, may be used to create PD spaces and practices in which special education teacher educators and their preservice teachers join bilingual education teacher educators and their mentees. These PD practices can be designed to enable the faculty and preservice teachers jointly examine the visions of child development and learning that inform their respective pedagogical and curricular practices, identify the toolkits and resources they use, and as a result, negotiate a new object for their work—for example, nurturing and developing students with complex ability and language needs and assets.

Boundary Objects

Another key concept that will serve to expand PD research for inclusive education is boundary object (Star & Griesemer, 1989). Boundary objects are artifacts that are used across communities of practice (e.g., PD programs and schools) and that mediate the work done in boundary practices (Star & Griesemer, 1989). They can be material, such as assessment tools, or ideal, such as the concept of equity or inclusive education. Boundary objects are subject to situated translations (Star, 2010). They are flexible enough to adapt to different activities (e.g., an in-service workshop or a teacher meeting to design curriculum) while also maintaining an identifiable structure (Star, 2010; Star & Griesemer, 1989). This allows boundary objects to enable the coordination of actions and goals (even when they differ across communities) of the boundary brokers involved in PD for inclusive education.

From this perspective, key to understand professional development efforts is to examine how boundary objects are used and translated and mediate teacher learning. For instance, some participants of PB studies used the Index for Inclusion to guide and coordinate their work. The Index for Inclusion could be construed as a boundary object; it coordinates and guides the work of the members of the partnership. These studies have portrayed the Index for Inclusion as a homogeneous tool used to follow a series of steps to examine and change school practices. Analyses about how the Index of Inclusion was used and translated in different situated activities and by different professionals were missing; that is, how school professionals appropriated it and in doing so, engaged in the ongoing transformation of the meaning of this boundary object.

Interpretative flexibility is not the only aspect that turns meditational artifacts into boundary objects; boundary objects need to be "means of translation" (Star & Griesemer, 1989, p. 393) in collaborative practices between groups of people. They are the nexus of perspectives (Wenger, 1998). Future research on PD for inclusive education should examine the role of boundary objects such as the Index for Inclusion in coordinating the work achieved in boundary practices to serve students who embody intersectional forms of difference. A key focus of future research, therefore, should be to develop and examine boundary objects that mediate teachers' understandings and actions toward dismantling intersecting forms of difference such as disability, social class, and language. In other words, what kinds of boundary objects contribute to expanding teachers' understandings of and actions toward compounding forms of marginalization? And, what kinds of boundary objects contribute to the collaboration and expansive learning of different teacher education communities (e.g., bilingual education, special education, culturally responsive education)?

Conclusion

In this article, we reviewed PD research for inclusive education to answer three questions: (a) How is inclusive education defined in PD research? (b) How is PD for inclusive education studied? and (c) How is teacher learning examined in PD research for inclusive education? We found that most PD research for inclusive education utilized a unitary approach toward difference and exclusion. This is problematic considering that students experience interacting and complex forms of exclusion. We found, in addition, that professional development research for inclusive education has produced a somewhat limited and fragmented knowledge base due to various forms of conceptualizing inclusive education and teacher learning. The act of dismantling exclusion occurs in dynamic, politically charged, and historically contingent contexts. The degree of success of inclusive education, and how success is defined, depends on the work of local actors and their meaning-making process situated in historically evolving activity systems. Thus, drawing broad generalizations about the practices, tools, and work of local actors from one program or school to another without regard for the complexities and idiosyncrasies of particular institutional contexts may result in unintended consequences. To understand inclusive education, researchers need to understand locally situated forms of exclusion.

We recommend designing and examining PD efforts using an intersectional approach in which teachers identify and dismantle interesting and multiple barriers to learning and participation for all students. This line of research requires moving beyond the analysis of outcome measures or descriptive processes. It requires a robust theory of how teachers learn in complex contexts in which various institutional and professional boundaries overlap. Participatory research approaches offer a promising option for such a line of PD research as it provides ongoing engagement and negotiation between communities and professions and affords local actors building relationships across disciplines to design solutions to their locally situated forms of exclusion. For this reason, the theoretical insights of scholarship on boundary practices and objects promise to make substantial contributions to this literature. Work on the intersections of disability with other markers of difference and educational equity are already benefitting from the application

of these constructs (Artiles, 2011; Artiles, Kozleski, Waitoller, & Lukinbeal, 2011). The program of research proposed in this article relies on the premise that "theoretical work and empirical study of professional development itself and the part it plays in reform strategies can shed light on the prospects for professional development to be a constructive instrument of improvement policy" (Knapp, 2003, p. 110). We argue this line of research can contribute to developing empirical and theoretical work that advances inclusive education reform.

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