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Teacher Education Quarterly

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Dear *Teacher Education Quarterly* Readers,

Scholarly inquiry relies on thoughtful researchers conducting sound empirical investigation. Journals such as *Teacher Education Quarterly* offer a public space where the strongest of these works can be shared. In my role as editor, I am honored with the task of managing the process. But this entire enterprise comes to an abrupt and irreversible halt without volunteer reviewers who dedicate their time to review manuscripts. To my mind, volunteer reviewers are the lifeblood of scholarly journals, and *TEQ* is no different.

So I want to thank you, our reviewers, for your time and expertise by listing your names on our website (see http://teqjournal.org/TEQreviewer_list.html). This recognition, I admit, is entirely inadequate, but I want each and every one of you to know how much Associate Editor Reyes Quezada and the *TEQ* Editorial Board appreciate your work. Of course, authors submitting papers often disagree with your assessment, especially when your recommendation is that the paper is not worthy of publication, but this is how double-blind reviewing works, and it's the only way to ensure that only the best manuscripts are published.

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Kind regards, Kip

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Dividing Practices

Preservice Teacher Quality Assessment and the (Re)production of Relations between General and Special Education

By Marleen C. Pugach & Charles Peck

Promoting the education of children with disabilities in general education classrooms has been a clear and consistent goal of federal education policy since the enactment of the Individuals With Disabilities Education Act (IDEA) over forty years ago. However, among the many challenges to achieving this goal, one of the most persistent has been the ambiguous, uneasy, and oftentimes conflictual quality of working relationships between special and general educators (Lilly, 1988; Meredith & Underwood, 1995; Young, 2011). One way to interpret the ongoing tensions between the fields of general and special education is to understand them as manifestations of cultural conflict between different ways of knowing and doing things (Cochran-Smith & Dudley-Marling, 2012). Ironically, separate cultures of professional practice, each operating within the affordances and constraints of its own conceptual and material tools, also function as processes of induction into the profession, thus reproducing the tensions between professional cultures and communities of practice that have been so problematic in achieving the goals of IDEA.

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Dividing Practices

In this article, we draw on ideas from several streams of sociocultural learning theory (Engestrom, 2001; Lave, 1993; Wenger, 1998) to examine some of the concrete ways in which contemporary—and even “cutting-edge”—practical tools used to evaluate preservice teacher quality may unintentionally contribute to the reproduction of cultural tensions between general and special education. Our underlying assumption is that policy, practice, and professional identity mutually construct one another (Holland, Lachiocotte, Skinner, & Cain, 1998)—such that divisions in preparation for practice, whether explicitly or implicitly, become reified as essential and may then be enacted as conflict between members of the general and special education communities. It is important to note that these sociocultural dynamics can operate across licensure options, that is, whether students are seeking stand-alone licensure in general or special education or one of the varied types of dual-licensure options (Blanton & Pugach, 2011) that exist. Young (2011), for example, demonstrated how deeply the divisions between the fields remained entrenched, even in a credential program explicitly designed to integrate general and special education teacher preparation.

To provide a concrete example of the ways cultural tensions between special education and general education may be unintentionally reflected and (re)produced in current preservice teacher education policy and practice, we analyzed several of the specific requirements of the increasingly visible national teacher education performance assessment, the edTPA (Stanford Center for Assessment, Learning, and Equity, 2013). Specifically, we conducted a comparative analysis of the language, performance expectations, and underlying assumptions about learning in the edTPA *Assessment Handbook for Elementary Literacy* and the edTPA *Assessment Handbook for Special Education* from the state of Washington. This analysis is significant in illustrating how deeply and unconsciously the division between general and special education may be embedded in even the most contemporary tools used to prepare and assess new teachers. We argue that constructing and maintaining separate communities of practice, which occurs through the use of these cultural tools, can function as an obstacle to fostering teachers’ capacities to work across general and special education. In so doing, they also function as a barrier to serving today’s students, who bring complex and intersecting learning needs and cultural identities to the general education classroom (Artiles, 2003). Our analysis provides an example of the ways the separation of special education and general education may remain rooted in divided preservice practices—even as the policy pressures for inclusion expand.

Context

The context for this study is rooted in three important considerations. First, we briefly discuss the history of the relationship between special and general preservice preparation and the related research on collaboration between general and special

education teachers. Then we consider implications of viewing teacher education policy and practice through the lens of sociocultural theory. Finally, we describe the edTPA as an example of the ways in which cultural “tools,” including those used to measure preservice teacher quality, may reify and reproduce tensions between the fields of general and special education.

Historical Perspective

In light of the long-standing national commitment to educating students with disabilities in inclusive educational settings, teacher educators have struggled, since the passage of IDEA in 1975, with how to frame and enact the relationship between the preparation of general and special education teachers. Since the original work of the Deans’ Grants projects, which represented the first large-scale effort to address how best to prepare general education teachers for “mainstreaming” (Kleinhammer-Tramill, 2003), and subsequently for what has come to be called inclusion, a range of national, state, and local efforts have been undertaken to move teacher education forward in this regard. The most visible of these efforts, and the one that is most common in teacher education, has been state-level mandates for all general education teachers to complete a course or courses in special education (Voltz, 2003). Other efforts have included integrating special education into specific general education preservice curricular components, developing collaborative field experiences, and, on a much smaller scale, systematically redesigning some preservice programs, with a recent surge in the development of programs of dual certification in general and special education (Blanton, Griffin, Winn, & Pugach, 1997; Pugach, Blanton, & Boveda, 2014; Pugach, Blanton, & Correa, 2011).

Embedded within these teacher education redesign efforts over time has been the call for collaboration, which is meant to serve as a fundamental practice for solving the problems of working across these historically disconnected communities of practice. Collaboration was identified as a goal both for inclusive teacher preparation and K–12 practice concurrent with the earliest efforts to enact IDEA. From an initial top-down consultation model where special educators shared their expertise with their general education counterparts (Reynolds, 1978), this work quickly developed into a model based on greater parity across general and special education professionals (Idol, Paolucci-Whitcomb, & Nevin, 1986;) as well as greater respect for the contributions of general education teachers in the process (Chalfant, Pysh, & Moultrie, 1979; Pugach & Johnson, 1988).

Recent research has suggested that although the importance of collaboration between general and special education continues to be widely acknowledged, achieving and sustaining collaborative relationships between these communities of practice remains highly problematic (Cochran-Smith & Dudley-Marling, 2012). For example, after completing a comprehensive review of the implementation research describing coteaching arrangements involving general and special education teach-

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ers, Scruggs, Mastropieri, and McDuffie (2007) concluded that “if the qualitative research to date represents general practice, it can be stated that the ideal of true collaboration between two equal partners—focused on curriculum needs, innovative practice, and appropriate individualization—has largely not been met” (p. 412). McKenzie (2009) arrived at a similar conclusion based on results of a national survey of teacher preparation program curricula and instructional practices related to collaboration between general and special educators. In addition, McKenzie argued that “many of the concerns related to collaboration in public schools are paralleled by, and perhaps attributable to, those between special and general education in college and university training programs” (p. 379). Taken together, these studies suggest that progress toward achieving a robust practice of teacher preparation for collaboration between general and special educators remains limited, even as the achievement of students who have disabilities continues to falter (Council for Exceptional Children, 2013).

In fact, one could argue that overcoming the intractable separation of the communities of general and special education has been the dominant struggle in achieving the goals of IDEA. With this historical context in mind, we argue that despite periodic advances, the core issue in teacher education (as well as in K–12 practice) as it relates to the goal of inclusive education continues to be the separation of these two communities of practice—a separation that derives in large part from policy and practice in teacher preparation (Pugach, Blanton, & Correa, 2011).

Teacher Preparation Policy and Practice: A Sociocultural Perspective

Our analysis of relationships between teacher certification policy and issues of *practice* in general and special education draws on some of the general assumptions of sociocultural learning theory (Chaiklin & Lave, 1993), particularly cultural–historical activity theory (CHAT; Engestrom, 1987; Leont’ev, 1975/1978; Tobach, Falmagne, Parlee, Martin, & Kapelman, 1997). One of the principal ideas that is thematic to this perspective has to do with the ways in which human subjectivity—that is, our ways of perceiving and experiencing the world—are shaped by the nature of the tools we use as we participate in practical activity (Vygotsky, 1978). Goodwin (1994) observed the significance of this in the context of professional activity:

Through the construction and use of coding schemes, relevant classification systems are socially organized as professional and bureaucratic knowledge structures, entraining in fine detail the cognitive activity of those who administer them, producing some of the objects of knowledge around which the discourse of a profession is organized, and frequently constituting accountable loci of power for those whose actions are surveyed and coded. (p. 628)

Berkenkotter and Ravotas (1997) documented some of the ways psychotherapists used the categorical frameworks of the *Diagnostic and Statistical Manual of*

Mental Disorders (American Psychiatric Association, 2000) to interpret the narratives of therapy clients, often reducing the experiences described by their clients to the set of psychological categories and related diagnostic terms in which they had been trained—and to which they were institutionally accountable. In the context of the present discussion, we might think of relevant tools as including both material artifacts, such as curriculum and assessment instruments, and conceptual tools, such as those used to assign children to “categories” of exceptionality. Our interests here have to do with the way in which teacher credentialing policies are enacted through development and use of cultural tools, which in turn afford (and constrain) specific ways of understanding and enacting the work of teaching. Our concern is with how some of the prominent cultural tools currently used to implement teacher certification polices may serve to reify and reproduce tensions between special and general education—tensions that then, ironically, function as obstacles to achieving some of the fundamental goals of IDEA. In this analysis, we make this argument more concrete by analyzing the affordances and constraints of one dominant cultural tool currently being developed and pilot tested in 40 states: the edTPA.

The edTPA as a Tool for Teacher Preparation

The Teacher Performance Assessment, now known as the edTPA, has its conceptual roots in the portfolio assessment model developed for the National Board for Professional Teaching Standards (Porter, Youngs, & Odden, 2001). This assessment methodology was further developed and refined for use in the context of preservice teacher assessment as the Performance Assessment for California Teachers (Pecheone & Chung, 2006). The methodology is now being taken to scale as the edTPA in an attempt to create a nationally available, standardized teacher performance assessment instrument. The edTPA portfolios include a variety of artifacts of preservice teachers’ classroom practice, including samples of teacher planning work, video records of instruction, and samples of K–12 student work. These artifacts are collected using very specific guidelines and evaluated using standardized performance evaluation rubrics (see edTPA, n.d.). Performance assessment guidelines and associated rubrics are specified using a consistent conceptual structure across grade levels and content areas; that is, the procedural handbooks for various content areas, specializations, and grade levels all require artifacts of teaching practice related to three major areas of practice: (a) planning, (b) instruction, and (c) assessment of instructional outcomes. However, the specific artifacts required in the portfolio, as well as their related evaluation rubrics, vary across the handbooks for general and special education. While minor differences in the edTPA requirements across various content areas are not inherently problematic, our interests in such differences in this context is related to the long-standing goal of IDEA to foster more collaborative relations between these two fields.

With this issue in mind, the differences between the tools were a particular focus

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of interest as we compared two versions of the edTPA handbooks: the handbook developed to assess teacher candidate performance in elementary literacy and the handbook developed to assess candidates in special education. In the following sections, we describe how we analyzed these assessment tools, identify some of the differences between them, and comment on the significance of these as affordances and constraints on the working relationships between general and special educators.

Method

Using a content analysis approach (Neuendorf, 2002), we compared the version of the edTPA used to evaluate preservice special education teachers and the version used to evaluate elementary general education teachers in literacy. To begin the analytic process, each author reviewed the January 2013 edTPA *Elementary Literacy Assessment Handbook* and the *Special Education Assessment Handbook* for the state of Washington, noting major issues identified as salient to the question of the relationship between special and general education in terms of teacher preparation. We selected the state of Washington owing to its status as an early adopter of the edTPA and also as the first state to require successful completion of the edTPA as a condition of initial certification. Although Washington's version of the edTPA uniquely includes a set of state-specific rubrics related to the construct of "student-voice," all other aspects of the tasks, instructions, and evaluation rubrics in each handbook remain identical to the versions of the instrument used in the other 28 states in which the tool has been pilot tested.

The edTPA assessments are divided into three major tasks across all certifications, planning, instruction, and assessment, denoting, in the conceptual scheme advanced by the edTPA, the major and recursive activities of teaching, or "the cycle of effective teaching" (Stanford Center for Assessment, Learning, and Equity [SCALE], 2013a, p. 2; SCALE, 2013b, p. 3), that need to be formally assessed to determine a novice's readiness to teach. The formal titles for these sections across the two handbooks used in the analysis differ slightly for the instruction and assessment tasks. We looked at the handbooks in their entirety, reviewing not only the rubrics but also the task guidelines (i.e., summaries, overview, and the enumeration in each task section of what to think about, what to do, what to write, and how evidence of practice would be assessed). We paid special attention to the rubrics, however, as they represent how the specific artifacts of practice for each task area are to be assessed as representative of a novice's practice.

We took individual notes during these initial readings, followed by a set of common notes during a first follow-up discussion. Each author then each took responsibility for different edTPA tasks (i.e., planning, instruction, and assessment), analyzing similarities and differences across the general and special education versions but focusing on segments of text that represented particularly salient areas of affordance and constraint with respect to collaboration between general and special

educators. We then discussed the identified segments from each of the three tasks separately and looked across tasks together to determine themes that represented the collection of segments that were identified as maximally relevant to our focus on the relationship between special and general education. Finally, we compared these segments in a tabled format according to the themes we had identified. Some themes spanned the three tasks (e.g., individual and collective learning); others were specific to a particular task (e.g., subject-specific pedagogy for the instruction task).

Results: Comparing the Tools

In this section, we present a comparison of text excerpts from the planning, instruction, and assessment sections of the instruments. These comparisons, illustrated for each task separately in Tables 1–3, respectively, indicate a number of thematic differences in the ways teaching and learning were defined and operationalized within each of these two edTPA documents.

Planning

Table 1 illustrates three important differences in the planning tasks and requirements of the special education and general education versions of the edTPA, differences that appear to carry substantive implications for collaboration between the two groups. One of the clearest issues reflected in both of the instruments has to do with the extent to which each identifies the need for collaboration at all. The general education planning task guidelines and evaluation rubrics require that preservice teachers attend to students' Individualized Education Programs (IEPs) and 504 Plans in designing instruction; in fact, failure to do so generates a failing score in the evaluation rubrics for the planning tasks.

The special education edTPA, in contrast, includes only minimal reference to the social and academic contexts of the general education classroom as a consideration for instructional planning. Special education candidates are directed to use the academic curriculum as one of the two learning targets for a focal student *if* that student is working on one of the four major areas of the academic curriculum; depending on the learner, *academic curriculum* may be defined as functional academics or early literacy or numeracy. Planning considerations related to the articulation of individual instructional needs with those of other students in the classroom are almost completely absent in the special education version of the edTPA. Yet the task guidelines and evaluation rubrics for the special education edTPA consistently refer to planning instruction related to the goals of generalization and maintenance of acquired skills—introducing concepts and related language that are absent from the general education instrument.

Finally, with regard to planning, the general education literacy planning commentary explicitly prompts students to take into account what they know about their

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students’ personal, cultural, and community assets, asking the question, “What do you know about your students’ everyday experiences, cultural backgrounds and practices, and interests?” This same commentary does not appear in the planning section of the special education handbook, although it does appear elsewhere in it—perhaps indicating that disability is the sole (or at least the primary) social

Table I
Affordances and Constraints in Planning Requirements and Rubrics

Theme	Special education	General education
Contexts of curriculum planning	Special education planning rubrics do not require attention to students’ cultural and community backgrounds as part of the justification for instruction. “If the focus learner(s) is/are working on academic (including functional academic or early literacy/numeracy) content in literacy, mathematics, social studies, or science, select a learning target related to one of these content areas. You will select an academic or functional academic learning target whether or not there is a related individual education plan goal” (planning guidelines).	“Personal/cultural/community assets related to the central focus— <i>What do you know about your students’ everyday experiences, cultural backgrounds and practices, and interests?</i> ” (Planning commentary guidelines). “Lesson plans should include the following information: <i>State-adopted student academic content standards</i> and/or <i>Common Core State Standards</i> that are the target of student learning” (planning guidelines).
Individual and collective perspectives on learning	Planning guidelines reference only individual learning. Planning guidelines do not reference general education.	“Planned supports are tied to learning targets and the central focus <i>with attention to the characteristics of the class as a whole</i> ” (planning rubrics). “ <i>Assessment adaptations required by IEP or 504 plans are made</i> ” (Planning rubrics).
Maintenance and generalization	“Explain how, throughout the learning segment, you will help the focus learner(s) <i>to generalize, maintain, or self-manage the knowledge, skills, and supports, as appropriate</i> ” (planning commentary guidelines).	Planning guidelines do not reference considerations around maintenance or generalization of learning.

Note. Emphasis in quotations is added.

marker of identity that is to be taken into consideration at the instructional planning stage.

Instruction

Table 2 presents text segments excerpted from the instruction sections of the edTPA *Handbook for Elementary Literacy* and *Handbook for Special Education*. This table illustrates important differences in the way instruction is assessed for the special education and general education versions of the edTPA. Several major differences emerge across the task descriptions, instructions, and five instruction rubrics.

First, the special education rubrics are consistently concerned with students acquiring knowledge and skills in a decontextualized manner; special education instructions refer to learning and the application of and feedback on learning, but not to content or content understanding. In contrast, in the elementary literacy rubrics, general education instructions focus on content understanding, comprehension, application, and the integration of learned literacy skills, and embedding them in meaning-based contexts.

Next, the special education rubrics are concerned with individual learning decontextualized from the group; little attention is paid to students' place in an interactive learning environment/community with their peers. That is, the group setting, and the fact that most students identified as having disabilities experience schooling in a group setting, is not emphasized as an important context within the special education rubrics. Specifically, in the general education rubrics, teachers are explicitly asked to focus on interactions among students as a strategy to enhance their individual learning. Relatedly, the relationship between encouraging students' varied perspectives and creating a strong sense of respect among students is identified as a concern for general education, but not for special education. Finally, the general education rubrics often refer to content learning and subject-specific pedagogy and include a dedicated rubric for subject-specific pedagogy. The special education rubrics do not include a subject-specific pedagogy rubric, including instead a rubric on supporting teaching and learning.

These differences suggest a distinction between the roles of general and special education teachers regarding whether learning is to be contextualized, both in terms of content and in terms of the students' classroom experiences. As a result, they bring into question the role of content knowledge in the assessment of the practice of novice special education teachers—which in turn has implications for the practice of collaboration. For example, how do general and special education teachers plan and interact around the academic curriculum? Is instructional responsibility for the academic curriculum apportioned in ways that decontextualize or contextualize it? Finally, the special education rubrics refer to learning that is *developmentally appropriate* to individuals. The general education rubrics refer both to individuals and groups, especially with regard to the analysis of teaching effectiveness.

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Table 2
Affordances and Constraints in Instruction Requirements and Rubrics

Themes	Special education	General education
Contextualization of curriculum	<p>“Candidate provides a positive learning environment that <i>balances support needs relative to the lesson objectives</i>” (Instruction Rubric 6).</p> <p>“Candidate uses <i>explicit individualized motivational and engagement strategies</i> to create active engagement in developing the desired knowledge and skills of each focus learner” (Instruction Rubric 7).</p> <p>“Candidate prompts each focus learner to evaluate his/her own learning in a developmentally appropriate manner” (Instruction Rubric 8).</p>	<p>“<i>Candidate facilitates interactions among students</i> so they can evaluate their own abilities to apply the essential strategy in meaningful reading or writing contexts” (Instruction Rubric 8).</p> <p>“Candidate explicitly teaches students <i>when to apply the strategy in meaningful contexts</i>” (Instruction Rubric 9).</p>
Individual and collective learning	<p>“Candidate provides a learning environment that balances learning challenge with support needs relative to the lesson objectives, <i>with opportunities for self-determination</i>” (Instruction Rubric 6).</p> <p>“Candidate proposes changes that address each focus learner’s needs related to the lesson objectives” (Instruction Rubric 10).</p>	<p>“Candidate proposes changes <i>that address individual and collective learning needs</i> related to the central focus” (Instruction Rubric 10).</p> <p>“Candidate provides a challenging learning environment that provides opportunities to express varied perspectives and promotes mutual respect among students” (Instruction Rubric 6).</p>
Student perspectives	<p>“How does the learning environment demonstrate respect for and rapport with each focus learner, enhance self-determination, and support engagement in learning?” (Instruction guidelines, “What to Think About”).</p>	<p>“What kinds of learning environments do you want to develop in order to establish respect and rapport, and to support students' engagement in learning?” (Instruction, “What to Think About”).</p>

(continued on next page)

Table 2 (continued)
Affordances and Constraints in Instruction Requirements and Rubrics

Themes	Special education	General education
		“Candidate provides a challenging learning environment that promotes mutual respect among students” (Instruction Rubric 6).
Subject-specific pedagogy	“Explain how you elicited and responded to each focus learner’s performance to promote application of learning” (instruction, “What Do I Need to Write: Deepening Learning During Instruction?”). “Describe opportunities provided to each focus learning to apply feedback to improve performance” (instruction, “What Do I Need to Write: Deepening Learning During Instruction?”).	“Explain how you elicited student responses to <i>promote thinking and apply the literacy strategy using requisite skills to comprehend or compose text</i> ” (instruction, “What Do I Need to Write: Deepening Learning During Instruction?”). “Explain how you and the students supported students to apply the literacy strategy in a meaning based context” (instruction, “What Do I Need to Write: Deepening Learning During Instruction?”). “Students are engaged in learning tasks that integrate their understandings of requisite skills and the essential literacy strategy for comprehending or composing text” (Instruction Rubric 7).

Note. Emphasis in quotations is added.

Assessment

Table 3 presents excerpts from the Elementary Literacy and Special Education versions of the edTPA that extend several of the themes identified in the analysis of the tasks, performance requirements, and language of the Planning and Instruction sections of the tool. Consistent with the Planning and Instruction sections, in the assessment section, special education preservice teachers are directed to attend only to the needs of specific individual children; general education teacher candidates are prompted to assess learning outcomes both for individuals (specifically including those with IEPs and 504 Plans) and to consider the class group as a larger unit of analysis. General education assessment rubrics explicitly call for consideration of both qualitative and quantitative data on student learning and

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Table 3
Affordances and Constraints in Assessment Requirements and Rubrics

Theme	Special education	General education
Individual and collective learning	“Use the baseline data, the daily assessment records, learner self-reflection, and, if different from the daily assessment record, the final assessment, to <i>analyze EACH focus learner’s progress</i> toward reaching the lesson objectives for his/her two learning targets. Address focus learner(s)’ strengths and continuing needs in your analysis” (assessment guidelines).	“Select 3 work samples to illustrate your analysis that represent the patterns of learning (i.e., what <i>individuals or groups generally understood and what a number of students were still struggling to understand</i>)” (assessment guidelines). “Provide a graphic (table or chart) or narrative summary of student learning for your whole class” (assessment commentary guidelines). “Based on your analysis of student learning presented in prompts 1c–e, describe next steps for instruction to impact student learning: for the whole class, for the 3 focus students and other individuals/groups with specific needs” (assessment commentary guidelines).
Data sources for assessment of student learning	“Use the baseline data, the daily assessment records, learner self-reflection, and, if different from the daily assessment record, the final assessment, to analyze <i>EACH focus learner’s progress</i> toward reaching the lesson objectives for his/her two learning targets” (assessment guidelines).	“Analysis uses specific evidence from work samples to <i>demonstrate the connections between quantitative and qualitative patterns of student learning for individuals or groups</i> ” (assessment rubrics).
Collaboration	No reference is made to assessing student performance in the general education classroom.	“At least one of the students must have <i>specific learning needs, for example, a student with an IEP, an English language learner, a struggling reader or writer, an underperforming student or a student with gaps in academic knowledge, and/or a gifted student needing greater support or challenge</i> ” (Assessment guidelines).
Maintenance and generalization of acquired skills	“Candidate describes how s/he will guide each focus learner to use feedback to <i>generalize and maintain, or self-direct use of skills, use of knowledge or future learning</i> ” (assessment rubrics).	“Candidate guides focus students to <i>generalize feedback beyond the current work sample</i> ” (Assessment rubrics).

Note. Emphasis in quotations is added.

additionally prompt the candidate to consider the relationship between these data sources. The concept of generalization is again emphasized in the special education guidelines for assessment of student learning outcomes and is also identified as a concern for assessment in the general education guidelines. The special education rubrics do not reference the general education classroom as a context for assessing generalization of student learning outcomes. Therefore neither the special education nor the general education rubric prompts candidates to engage in any kind of collaboration in the assessment of student learning outcomes.

Student-Voice

In addition to the three major tasks on the edTPA, namely, planning, instruction, and assessment, the edTPA for the state of Washington includes a fourth set of rubrics on student-voice. Although these rubrics are particular to Washington (the handbooks and prescribed assessment procedures are otherwise identical for all states using the edTPA), their presence raises additional issues regarding the relationship between the communities of general and special education.

The three student-voice rubrics in the elementary literacy assessment are focused on (a) “Eliciting Student Understanding of Learning Targets,” (b) “Supporting Student Use of Resources to Learn and Monitor Their Own Progress,” and (c) “Reflecting on Student-Voice Evidence to Improve Instruction.” As illustrated in these rubrics, the student-voice portion of the edTPA is primarily concerned with student agency. The first rubric is meant to focus candidate performance on engaging students in both understanding the purpose of their learning and, at the highest level of candidate performance, working collaboratively with students in identifying and reflecting on learning targets. In addition, the student-voice rubrics address students’ monitoring of their own progress toward their learning, with the highest level of performance being that of having students collaboratively participate in the identification of tools and resources that will help foster their progress. Finally, these rubrics are meant to assure that candidates use the evidence accumulated through an enacted commitment to student-voice as part of their own reflective professional practice to improve instruction. Compared to the rubrics for planning, instruction, and assessment, the student-voice rubrics demonstrate a greater degree of similarity across the assessments for elementary literacy and special education. The primary difference is in the way these rubrics refer to children and youths. In the elementary literacy rubrics, the term “student” is used throughout. In the special education rubrics, the term “focus learner” is used throughout. In Level 3 of the rubric “Eliciting Student Understanding of Learning Targets,” teachers are to allow focus learners to communicate learning targets not only in their own words but also in their preferred communication mode.

The overall similarity of these two sets of rubrics in relationship to student-voice suggests a commitment to purposefully engaging students in their own

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learning—in terms of identifying what is important as a learning task, of assuring student participation in monitoring, and of fostering teachers’ use of student-voice as a means of focusing and improving their instruction. The focus on student-voice is also consistent with the language of student self-determination that appears in earlier rubrics in the special education assessments.

Discussion

Our goal in this analysis is to illuminate some of the ways in which contemporary teacher preparation policy tools may contribute to the reproduction of practices that divide general and special education. Our analysis is specifically focused on how one dominant quality assessment instrument, the edTPA, reflects historical tensions between the fields and invites (in fact, requires) new teachers to take up practices that are likely to continue to divide the fields. Drawing on sociocultural theories of learning, which illuminate some of the social processes by which cultural practices are reproduced (Vygotsky, 1978), as well as cultural–historical activity theory, helps us “see” some of the ways in which both disciplinary communities and formal organizations may operate to constrain opportunities for collaboration (Edwards, 2012; Engestrom, 1987). Using these frameworks, our analysis of the versions of the edTPA developed for assessing the teaching practices of special and general education teacher candidates reveals several thematic differences between the tools and practices of the communities they represent. In the following sections, we comment on the significance of these differences as both affordances and constraints for collaboration between general and special educators. We then identify some points of possible convergence as well as the implications of this analysis for achieving some of the goals of IDEA.

Individual and Collective Perspective on Learning

One of the most robust differences we observed between the edTPA protocols for general and special education has to do with ways in which each frames the issues of learning in relationship to individuals and groups. The tools for analysis of teaching practice in the special education edTPA consistently treat matters of learning as if they were only about specific individual students. This is, of course, consistent with the history of the field of special education, including the political, theoretical, and ideological contexts in which it developed as a field of practice (Sarason & Doris, 1979). In contrast, the edTPA protocols for general education direct candidates’ attention, in all phases of the instructional process, not only to the needs of individuals but also to the constraints and affordances of the classroom as a collective. For example, in the planning rubrics, the edTPA for elementary literacy requires that “planned supports are tied to learning targets and the central focus with attention to the characteristics of the class as a whole.” Assessment

protocols in the general education edTPA further require that analyses of learning outcomes be undertaken both for individual “focus students” and for the classroom as a whole. It is important to note that these considerations about the classroom as a collective are not conceptualized simply as a constraint on the teacher’s time and ability to provide individualized instruction but also as a *resource* for learning. For example, rubrics for evaluating instruction require that the “candidate facilitates interactions among students so they can evaluate their own abilities to apply the essential strategy in meaningful reading or writing contexts.” Managing opportunities and constraints related to the dynamics of individual and group learning in the classroom is one of the most salient challenges of a teacher’s work and is perhaps nowhere more salient than with respect to students who have disabilities. The fact that this issue is largely ignored in the special education version of the edTPA appears, at minimum, to be a missed opportunity to insure that special education teachers are prepared to understand and engage these challenges in their work within the general education classroom.

Curriculum Perspectives

A second thematic difference between versions of the edTPA developed for general and special educators has to do with differences in their underlying stances about curriculum content as a focus for planning, instruction, and assessment. The edTPA for elementary literacy directs candidates’ attention to the Common Core State Standards (Common Core State Standards Initiative, 2015) as a context for instructional planning. The elementary tool also includes a specific rubric related to *subject-specific pedagogy* (Shulman, 1987). These curriculum concepts and related resources are absent from the special education version of the edTPA. Conversely, the special education instrument includes reference to issues of generalization and maintenance of acquired skills throughout the tasks for planning, instruction, and assessment—a focus relatively underemphasized in the general education instrument. One index to the underlying differences in theoretical orientations to learning we think is particularly significant is that the word “meaning” appears throughout the task guidelines and evaluation rubrics for general education and not at all in those for special education. We argue that these differences are not trivial but rather represent substantive historically problematic disconnections in the curriculum priorities within general and special education, especially in light of the widespread implementation and related instructional demands of the Common Core State Standards.

The absence of serious attention to the general education curriculum within the special education version of the edTPA appears particularly problematic with respect to the needs of students with high incidence disabilities (and is certainly not irrelevant to the needs of many students with low incidence disabilities as well). Indeed, special educators’ knowledge of the curriculum and instructional practices

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of the general education classroom seems to us to be critical to their ability to effectively prepare students for participation in the general classroom and accessing the general education curriculum. Most fundamentally, the absence of reference to the general education classroom as one likely context for assessing the generalization of student learning outcomes seems to us to be a missed opportunity to make a more explicit commitment to engaging the goals of IDEA with respect not only to accessing the general education curriculum but also to supporting learning that takes advantage of deep and meaningful learning in that curriculum.

Collaboration

It is significant to us that professional collaboration is not identified as a consideration in the planning, instruction, and assessment tasks and evaluation rubrics in *either* the special education or general education versions of the edTPA. General education candidates are required to take the IEPs or 504 Plans for students in their classrooms into account in planning instruction—but nowhere in either tool is there any mention, much less any requirement, that teachers in either professional community take the expertise of the other into account when planning instruction for students with identified special education needs. The absence of systematic attention to the academic and social contexts of the general education classroom seems particularly problematic for candidates in special education, insofar as one of the most significant ideological commitments of IDEA is ensuring access to and participation in the general education curriculum.

Opportunities for Convergence

The substantial differences in these two assessments illustrate the durability of the divide between general and special education as well as the challenges that teacher educators face in developing a shared practice for meeting the needs of students who have disabilities. These differences dominated our comparative analysis. However, we also identified some specific commonalities that may hold potential for building stronger connections across these two historically separated communities. In this sense, in addition to the challenges posed by the differences we have identified, the edTPA may simultaneously represent an opportunity to forge greater common ground across general and special education. The potential for such common ground includes the affordances of this tool for building (a) a common and concrete language of practice and (b) a common framework for program evaluation.

There are places in both of the edTPA handbooks we analyzed that illustrate some elements of common concepts and languages of practice. For example, both assessments refer relatively similarly to (a) the importance of planning for and assessing the language demands of a learning task (Rubrics 4 and 14); (b) monitoring student learning during the course of the lesson (Rubric 5); (c) creating and maintaining a respectful learning environment (Rubric 6); (d) attending to students' cultural and

community assets (Rubric 7); (e) looking to research and theory to justify changes in teaching (Rubric 10 and 15); (f) seeking patterns in student learning (Rubric 11); (g) an appreciation for students being able to generalize feedback beyond immediate learning task (Rubric 13); and (h) drawing on student-voice as teachers reflect on and work to improve their instruction (Rubrics 16–18, state of Washington only). Teacher educators could use these areas of common language/common concern as a departure point for engaging in dialogue about the degree to which these practices are defined similarly across general and special education, as well as the relationship between these performances and other performances assessed by the edTPA in which less commonality exists. Teacher educators might also discuss the inconsistencies in the ways similar language is used across the two assessments.

For example, in the general education edTPA, attention to community and cultural assets appears as part of the justification for planning as well as in the instruction rubrics, but it only appears in the instruction rubrics for the special education edTPA. In other places, differences in language belie commitments to conceptually related outcomes. The value of student agency as envisioned in the student-voice rubrics, for example, could be explored in relation to ideas about self-determination, which appear multiple times in the special education rubrics.

The overall requirement for a common format and approach to assessment in teacher education as represented by the edTPA holds considerable potential for building collaboration in the context of program evaluation and improvement initiatives. As general and special education candidates prepare for meeting these requirements, teacher educators across both communities may find it easier to talk about the dynamics of their programs and fruitfully share what they are learning about how to prepare candidates with a high-quality novice practice that best captures the performances the edTPA represents.

Mixed Messages in Federal and State Special Education Policy

The cultural and organizational challenges to interdisciplinary collaboration and cooperation between general and special education are perennial and obdurate, but they are by no means unique. Similar difficulties are readily observed in other human service fields as well as in business contexts (Engestrom, 2001; Farrell, 2000; Wenger, 1998; Zwarenstein & Reeves, 2006). What may be unique to the relationship between special and general education, however, is the extent to which policies and practices in teacher preparation that *drive the fields apart* are in tension with the goals of federal special education policy—which are explicit in their commitment to *bringing the fields together*.

In his seminal work on the politics of the “examination,” Michel Foucault (1975/1979) used the term *dividing practices* to draw attention to the ways in which institutionally sanctioned assessment practices often reify distinctions between individuals in ways that serve institutional interests. One of Foucault’s most tren-

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chant observations had to do with the ways in which institutionalized assessment policies (and the tools used to enact them) become “fossilized,” in the sense that they become so deeply entrenched in histories of cultural and institutional practice that it becomes difficult to see their effects. We wish to underscore the idea that the “dividing practices” we have located in these tools are not consciously created as barriers between the fields but rather represent more unconscious reproductions of historical divisions between them. Indeed, the power of Foucault’s idea about dividing practices lies largely in the way he shows how our assumptions about the natural order of things are shaped by unconscious internalization of ideologies and related institutional practices. From this perspective, the tensions we have identified between the special education and general education versions of the edTPA may be understood simultaneously as a reflection of the de facto separation of the fields, as part of the unconscious process by which that separation is reproduced, and as a missed opportunity to use these valuable new performance assessment tools to bring the fields into a more productive and collaborative relationship.

We want to be clear that we are not arguing against distinct assessments for general and special education candidates. Indeed, differentiated expertise has been identified as important for solving complex problems (Edwards, 2012), and certainly improving the education of students who have disabilities can reliably be counted as a complex educational problem. Nor are we arguing that all differences between the handbooks are inherently problematic. Rather, our argument is that these differences warrant critical examination in the context of the specific problem we have identified, that is, the ongoing struggle to build more collaborative relations between general and special education. Viewed through the lens of activity theory, standardized performance assessments such as the edTPA function as tools that inevitably focus and constrain the way teacher candidates view and define their work. The substantive, if unintended, consequence of this is that the tools may also reify the contours of professional community and diminish the opportunity to build a stronger base of common knowledge between general and special education.

The goals of IDEA fundamentally suggest that there ought not to be two separate educational systems but rather one system within which students with and without disabilities are served. We believe that achieving these goals can more reasonably be expected if we use this moment in the evolving history of teacher education to create better alignment between the policies, practices, and tools that are used to prepare new teachers in general and special education. If the default, unvoiced position reflected in new tools for practice contributes to reproduction of historical tensions between the fields—as we believe we have shown in our present analysis—we will miss a significant opportunity to build a stronger base of common language and common knowledge between the fields (Edwards, 2012). Strategically working toward improved alignment in language and practice can expand understanding between teacher educators in general and special education

as we jointly prepare new teachers for the responsibility of educating students who have disabilities within general education classrooms.

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Information on the California Council on Teacher Education

Founded in 1945, the California Council on the Education of Teachers (now the California Council on Teacher Education as of July 2001) is a non-profit organization devoted to stimulating the improvement of the preservice and inservice education of teachers and administrators. The Council attends to this general goal with the support of a community of teacher educators, drawn from diverse constituencies, who seek to be informed, reflective, and active regarding significant research, sound practice, and current public educational issues.

Membership in the California Council on Teacher Education can be either institutional or individual. Colleges and universities with credential programs, professional organizations with interests in the preparation of teachers, school districts and public agencies in the field of education, and individuals involved in or concerned about the field are encouraged to join. Membership entitles one to participation in semi-annual spring and fall conferences, subscription to *Teacher Education Quarterly* and *Issues in Teacher Education*, newsletters on timely issues, an informal network for sharing sound practices in teacher education, and involvement in annual awards and recognitions in the field.

The semi-annual conferences of the California Council on Teacher Education, rotated each year between sites in northern and southern California, feature significant themes in the field of education, highlight prominent speakers, afford opportunities for presentation of research and discussion of promising practices, and consider current and future policy issues in the field.

For information about or membership in the California Council on Teacher Education, please contact: Alan H. Jones, Executive Secretary, California Council on Teacher Education, Caddo Gap Press, 3145 Geary Boulevard, PMB 275, San Francisco, California 94118; telephone 415/666-3012; email alan.jones@ccte.org; website www.ccte.org.

The next semi-annual conference of the California Council on Teacher Education will be:

October 20-22, 2016, Kona Kai Resort, San Diego



Elementary Preservice Teachers’ Experiences with Response to Intervention

Amanda R. Hurlbut & Jeanne Tunks

In today’s public schools, general education teachers must be adequately prepared to teach students with multiple learning needs, including students who do not speak English, who have identified or suspected disabilities, and/or who have diverse cultural and racial backgrounds. The enactment of No Child Left Behind in 2001 (NCLB) and the reauthorization of the Individuals With Disabilities Education Improvement Act of 2004 (IDEA) placed an emphasis on providing research-based instructional practices in the general education classroom before an at-risk student can be considered for placement in special education. It is vital that general education teachers are prepared to work with this diversity in classrooms, including strategies to work with students who are at risk for developing learning difficulties or who may already have a disability.

Response to intervention (RTI) is a general education intervention system used by classroom teachers to assist struggling learners and provide individualized, academic support to help all students succeed academically (D. Fuchs & Fuchs, 2006). This process is also vital as a prereferral process as a prerequisite

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to special education referrals and eligibility determination (Fletcher & Vaughn, 2009). Schools must consider important legal ramifications in regard to special education identification and eligibility. Identification and prereferral processes are the responsibility of the general education teacher as the first point of contact with a student who struggles academically or behaviorally (Fletcher & Vaughn, 2009; Mastropieri & Scruggs, 2005).

Response to Intervention in Practice

RTI has been widely studied as an evidence-based intervention process used to assist struggling learners in the classroom or to identify students as having a learning disability in either reading or math (Baker, Gersten, & Dae-Sik, 2002; Fuchs et al., 2005; Gersten et al., 2009; Scammacca et al., 2007; Wanzek & Vaughn, 2007). Recently, studies have also focused on campus and teacher RTI implementation in individual districts and schools, including many of the teacher concerns related to their development and practice of RTI in classroom settings (Greenfield, Rinaldi, Proctor, & Cardarelli, 2010; Orosco & Klingner, 2010; Rinaldi, Averill, & Stuart, 2011; Stuart, Rinaldi, & Higgins-Averill, 2011; Wilcox, Murakami-Ramalho, & Urick, 2013).

Preservice general education preparation is significant in predicting teachers' perceptions of working with students who have disabilities. Research has demonstrated that general education practitioners do not feel adequately prepared to work with students who have disabilities or with students in inclusion settings (Conderman & Johnston-Rodriguez, 2009; Goodlad & Field, 1993). Special education preservice course work is connected with more positive attitudes among general educators toward teaching students who have learning disabilities (McCray & Alvarez-McHatton, 2011; McHatton & Parker, 2013). Studies linking preservice preparation to teachers' attitudes in working with students who have disabilities are an important predictor of positive instructional approaches related to mainstreaming and inclusion (Ajuwon et al., 2012; Hadadian & Chiang, 2007; Rademacher, Wilhelm, Hildreth, Bridges, & Cowart, 1998; Van Laarhoven, Munk, Lynch, Bosma, & Rouse, 2007; Voss & Bufkin, 2011). Research has also connected teacher confidence and self-efficacy with preservice course work and field experiences in special education issues (Atilas, Jones, & Kim, 2012; Brownell & Pajares, 1999; Gao & Mager, 2011; Lancaster & Bain, 2010). Related to the context of RTI, these studies are vital for consideration, because RTI and special education are inextricably linked through general education support strategies for struggling learners.

Successful RTI implementation is dependent on a teacher's preparation and development to implement the dynamic relationship of student assessment, intervention, monitoring, and decision making. RTI practices, similar to the nature of other school reform concerns, require significant change on many levels, including changes in teaching practices (Nunn & Jantz, 2009). The RTI model proposes a fundamental paradigm shift in the way that schools identify and serve students who

struggle with the general education curriculum. The level of specialized, hierarchical academic support provided to students requires a set of knowledge and skills from the general education practitioner that was not previously required. This paradigm shift has important implications for preservice teacher (PST) preparation programs (Richards, Pavri, Golez, Canges, & Murphy, 2007).

Response to Intervention and Preservice Teacher Preparation

The challenges of RTI implementation are present in teacher preparation programs (L. S. Fuchs & Fuchs, 2006; Nunn & Jantz, 2009; Richards et al., 2007). RTI is based on the premise that general educators will deliver evidence-based practices in the classroom setting (Danielson, Doolittle, & Bradley, 2007), and the training of PSTs helps build capacity for future implementation in the schools. Danielson et al. stated, “At this point, there has not been sufficient attention paid to the implications of RTI for the pre-service preparation of personnel who will play critical roles in implementation (i.e. principals, general education teachers, [school] psychologists, and special educators)” (p. 633). Some evidence has suggested that if teachers receive preparation in RTI implementation at the preservice level, then they may implement interventions in the classroom with more integrity and less coaching (Begeny & Martens, 2006).

Researchers cite a growing need for embedded RTI practices within teacher preparation programs. According to a 2010 survey by the Florida Problem Solving/RTI Statewide Implementation Project, recent graduates indicated that teacher preparation programs needed to do more to expand the competencies and skills needed to work with struggling students in a problem-solving or RTI model (Prasse et al., 2012). Other studies have reported similar findings, with teachers citing a lack of basic knowledge needed to teach struggling students (Hoppey, 2013; Mather, Bos, & Babur, 2001). Although researchers often discuss the importance of preservice training, only a few studies have specifically investigated PST training and RTI practices.

Hawkins, Kroeger, Musti-Rao, Barnett, and Ward (2008) explored the outcome of training preservice special educators in RTI through targeted university course work and field-based experiences. The researchers found that effective RTI training models included several important components, such as interdisciplinary training in specific RTI prevention or Tier 1 practices, using assessment and progress monitoring data to make decisions, participating in team problem solving, and selecting effective research-based interventions appropriate for specific student needs. This study emphasized the significance and challenges of placing preservice professionals in field experiences that provide experiences in implementing an RTI program. Finding adequate settings and mentor teachers is a significant barrier for preparation programs wanting to simulate effective RTI experiences for their PSTs.

Grogg (2009) studied the relationship between training in prereferral intervention teams and PSTs’ knowledge and perceptions of these practices. PSTs

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who participated in prereferral training reported significant changes in knowledge about instructional interventions, including positive changes in perceptions of the assessment process, decision making based on the data, and responses to individual student needs. These increases in knowledge about the prereferral process only serve to build future capacity for responding to student instructional needs as part of an RTI process. Grogg attributed focused training in prereferral activities to the PSTs' ability to generalize this knowledge to future instructional settings.

McCombes-Tolis and Spear-Swerling (2011) conducted a review of elementary education course work syllabi to determine the extent of training in RTI practices for early reading intervention. The researchers discovered that elementary PSTs were not routinely receiving explicit instruction regarding key RTI terminology, theoretical models and best practices of RTI, and research-based reading interventions. This finding echoed sentiments expressed earlier by the National Reading Panel (2000) and Bos, Mather, Dickson, Podhajski, and Chard (2001). Furthermore, inadequacies in preparing PSTs to implement early reading interventions continue to be a concern (Otaiba, Lake, Greulich, Folsom, & Guidry, 2012).

Preservice special education teachers who participated in an online RTI training system known as the IDEA '04 and the Research for Inclusive Settings model were found to have significant positive changes in their reported knowledge about RTI as compared to pre- and postparticipation in the modules (Kuo, 2013). Furthermore, the modules were shown to increase background knowledge about RTI, although the sustainability of this knowledge in classroom settings remains unknown.

A study by Neal (2013) set out to discover general and SPED PSTs' perceptions of RTI and their perceived ability to implement an RTI program in future settings. Although most preservice participants perceived RTI as a necessary and crucial part of assisting struggling students, there was a significant difference among participants in the reported ability to implement RTI. SPED PSTs reported much higher levels of self-efficacy in implementing RTI, mainly due to differences in course work and fieldwork experiences compared to the general education program. A common theme seen among all participants in the study was the need for more training and hands-on experiences with implementing RTI in a school setting, suggesting that teacher preparation is a vital component of implementing an effective RTI program in future classroom settings.

In many of these studies, participants primarily included psychology students and special educators rather than general education preservice practitioners (Hawkins et al., 2008; Kuo, 2013; Neal, 2013). The encompassing RTI literature typically situates RTI as a general rather than special education intervention (Fletcher & Vaughn, 2009; Mastropieri & Scruggs, 2005). Overall, more information is needed about how university teaching programs prepare general educators to diagnose, intervene with, and monitor struggling students specific to the RTI framework established formally by NCLB and IDEA. This raised concerns in the extent that general education teachers use assessments, monitor progress, and make

sound educational decisions regarding struggling students. When considering the prominent role general educators play in the implementation of RTI, this is cause for concern (Neal, 2013).

Purpose and Research Question

Although the perceptions and experiences of PSTs are critical to the future success of RTI implementation, limited studies in teacher preparation have evaluated how preservice programs are preparing general education teachers to implement RTI as both a prevention model and an identification model in their future classrooms (Hoppey, 2013; Prasse et al., 2012). Hawkins et al. (2008) stated that “a specific literature review revealed no specific studies related to RTI pre-service training and outcomes” (p. 747). Since this statement, few studies have emerged that specifically examine RTI implementation within PST preparation programs (Grogg, 2009; Kuo, 2013; McCombes-Tolis & Spear-Swerling, 2011; Neal, 2013).

Recent emphasis on PST preparation methods and a focus on meeting the academic needs of a diverse student population in the general education classroom have revealed a need for more research in the practices of these programs (National Council on the Accreditation of Teacher Education, 2010; National Council on Teacher Quality, 2013; National Mathematics Advisory Panel, 2008; National Research Council, 2010). Of particular interest is the need to understand how elementary education (early childhood to sixth grade; EC–6) PSTs are prepared to include RTI practices in their classrooms and how these PSTs transfer their university preparation by applying the principles of RTI in their fieldwork experiences.

Research documents that there is an existing transfer problem in the realm of PST education (Korthagen & Kessels, 1999; Wubbels, Korthagen, & Brekelmans, 1997). A synthesis of the literature reveals several documented areas of concern regarding PST education and the transfer of knowledge and experience to actual teaching settings (Bransford & Schwartz, 1999; Stofflet & Stoddart, 1994; Wubbels, 1992). Research in teaching and learning has revealed that existing or prior knowledge has a major impact on comprehension and learning (Scardamalia & Bereiter, 1989).

The purpose of the study was to examine PSTs’ understanding, practice, and generalization of RTI practices in a university mathematics methods course assignment that applies RTI methodology. The following research question guided this study: What are general education elementary PSTs’ understandings and practice of RTI in a university mathematics methods course assignment (mathematics interactions project) that transfers RTI methodology to mathematics teaching practice?

Theoretical Framework

Educational experts have cited transfer of learning as one of the most problematic issues with learning in a classroom environment (Bevevino, Dengel, & Adams,

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1999; Borich & Tombari, 1997; Rossett, 1997). Robert Haskell (2001) developed a theory of learning transfer by synthesizing years of research on transfer within learning contexts applicable to an educational framework. Haskell believed that the transfer of learning refers to application and acclimatization of previous learning to new contexts. Constructivist learning theory idealizes the notion that prior knowledge and experiences are essential for new learning to occur; the issue with transfer arises when new learning is applied to vastly different contexts.

Haskell posited that significant transfer could only occur when new learning transpired to produce the transfer. He suggested that near, far, and displacement or creative transfer were the highest levels to strive for and insisted that unless new learning occurred, the only thing that resulted was the application of the same learning rather than the transfer of new learning. Studies in transfer and generalization have corroborated this theory for meaningful transfer (Calais, 2006; Clark & Voogel, 1985; Comier & Hagman, 1987).

Haskell summarized 11 widely accepted educational principles that support transfer processes. These principles were the primary lens through which the data from this study were collected and analyzed to determine the level of transfer that occurred regarding RTI practices among the preservice participants. Transfer is a vital consideration as PSTs apply learning in course work and field-based experiences to the teaching profession. This is a complex process and requires careful, explicit educational opportunities designed to specifically facilitate transfer (Benander & Lightner, 2005). Additionally, Calais (2006) stated that educational learning must consider Haskell's levels to design opportunities for higher, more significant levels of transfer to occur. This study sought to identify the RTI knowledge that was gained through a teacher education preparation program, in particular, a mathematics interaction project (MIP) as part of the mathematics methods course, through the lens of Haskell's principles of transfer in order to deduce how PSTs transfer this learning to a field-based teaching context. In this study, two main principles were used to analyze the information, as the remaining nine principles were not seen:

Principle 1. Learners need to acquire a large knowledge base in the areas in which transfer is to occur (Clark & Lampert, 1986; Korthagen & Kessels, 1999; Scardamalia & Bereiter, 1989; Tom, 1997). In other words, learners need an extensive knowledge base of RTI practices at the university program level to be able to transfer the knowledge into practice.

Principle 9. Practice and drill are necessary for transfer (Engelmann, 1988; Rose & Church, 1998). Opportunities to practice implementing RTI practices with students or in a field-based setting are crucial for mastery learning.

Research Design

The research design followed a case study methodology. This study sought to explain PSTs' perceptions of RTI and gauge their ability to transfer this knowledge to classroom use through interviewing and extensive analysis of a course assignment given in the mathematics methods course, known as the MIP.

Undergraduate students working toward elementary teaching certification at a north Texas university were recruited as participants. PSTs choose from one of several routes to obtain certification from the university, including EC-6 Generalist or EC-6 with a specialization. The specialization areas included English as a second language (ESL), bilingual education, or special education (SPED). PSTs also participated in field-based experiences known as professional development schools (PDS) while taking methods classes at the university. During this phase, courses taught at the university are designed to interface theory and practice in the field. Assignments from courses align theories presented in class with field experience opportunities to test the theories with young learners. Approximately 85 PSTs were enrolled in PDS course work in the spring 2015 semester, from which 22 candidates consented to participate in the study. The participants included one bilingual candidate, six SPED candidates, and 15 ESL candidates across four sections of the mathematics methods courses.

Data Sources

The study employed two main data sources to determine the case for PSTs' perceptions of university mathematics methods course work in relation to RTI and their transfer of learned RTI practices during their PDS experience. Data were derived from document analysis of the PSTs' field-based assignment and focus group interviews during the first PDS semester.

The MIP was a required assignment as part of the mathematics methods course. In the project, PSTs work with a supervising or mentor teacher in the field to select and implement an appropriate assessment and intervention protocol and to interact with a small group of students in the classroom, with mathematics as the center of the interaction across a 4- to 6-week time frame. PSTs mimicked an RTI process by diagnosing students' mathematical knowledge and skills by giving a preassessment, analyzing student data, selecting appropriate materials, and creating lessons specifically to address the instructional needs of students, as noted in the diagnostic, resulting in four intervention lessons. Following each lesson, PSTs informally monitored student progress through each lesson and completed a postassessment to determine progress at the end of the 4- to 6-week interaction. The PSTs were also expected to continually reflect on this process of assessment, intervention, and monitoring as a simulation of a campus-based RTI procedure, while receiving feedback from the course instructor.

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Focus group interviews were conducted with small groups of PSTs during concurrent enrollment in the mathematics methods course. The structure for the interview sequence followed Seidman's (2006) three-interview series. Questions were open ended so as to allow participants to reconstruct experiences within the confines of the topic of study. The purpose of these interviews was to identify PSTs' perceptions and experiences with RTI through university course work and field experiences and to identify how the PSTs are able to transfer their learning to their active fieldwork experiences.

Data Analysis

A document analysis approach was used to examine data gathered from the MIP. The analysis focused on pre- and postassessment data and formative assessments as a decision-making tool, specific reflections on lesson planning and applicability to the teaching practice, and mathematical understandings of how to intervene with students explicitly connected to an RTI practice. PSTs' MIP documents were uploaded into NVivo 10 software and initially coded using Haskell's transfer principles, aligned with accepted RTI practices. NVivo 10 is a qualitative data analysis software package that facilitates the organization of unstructured data by classifying, sorting, and arranging information to determine relationships, patterns, and/or trends in the data (QSR International, 2014).

The interview portion of the data analysis involved digitally recording, transcribing, and uploading the digitally written material into NVivo 10. The interviews served as a method to probe deeper into the experiences that PST participants had with RTI in prior preservice courses, thus establishing an extensive knowledge base about RTI based on the first principle of Haskell's transfer theory. Second, the interviews provided a way to further examine PSTs' experiences with RTI through the mathematics methods course and field-based experiences, specifically in regard to transferring their knowledge through the mathematics interactions project. Data gleaned from the focus group interviews were analyzed using coding categories from the principles in Haskell's transfer theory.

Findings

The data for this study are reported within the context of the relevant corresponding principles of Haskell's theory. Principles 1 and 9 were specifically identified as applicable to the transfer of RTI principles in practice in the MIP; the remaining principles were not seen in analyzing the preservice course work.

Principle 1:

Knowledge in Area That Transfer Is to Occur (Response to Intervention)

Haskell (2001) maintained that for significant transfer to occur, there must be

a depth of knowledge in the area of transfer. This has been supported in research on transfer and learning (Bransford & Schwartz, 1999; Lee, 1998; Lee & Pennington, 1993). In this study, the main transfer area studied was PSTs' knowledge and skills, understanding, and practice of RTI. Analyzing the focus group interviews and MIPs revealed several themes related to RTI understanding as part of the university program.

Course work. PST participants were asked about knowledge and understanding of RTI within the context of prior coursework and experiences as part of the teacher preparation program at the university. Responses varied greatly according to degree plans; discrepancies in course coverage and experiences related to RTI emerged. ESL and bilingual degree plans are nearly identical, with the exception of a single language-oriented course; for the purposes of this report, the bilingual candidate will be grouped with the fellow ESL participants.

English as a second language. PSTs on the ESL plan frequently cited class lectures, Microsoft PowerPoint presentations, online learning modules, and the course textbook as the main sources of RTI learning from course work at the university. When asked what courses covered RTI, students had some trouble isolating the individual courses; however, further investigation led to identification based on common instructors and/or topics mentioned. These courses included ESL Instructional Strategies, Assessment of Reading, and a single SPED course that all non-SPED candidates are required to take. The attention to RTI in these courses was reported as scarce in depth and breadth of coverage. Students frequently stated that courses with RTI coverage only introduced basic definitions, referenced the tier triangle of instruction, and gave quizzes that checked for understanding as methods for teaching and assessing understanding of RTI. Comments from ESL student participants regarding exposure to RTI in university course work provide insight: "I remember seeing a slide [Microsoft PowerPoint] on it and I remember there was a part of the book that we read that had it in there" (Focus Group A, Interview 1); "I'm [on the] ESL [plan] and we probably looked at it on a [Microsoft] PowerPoint. We probably had to memorize it for a quick quiz but didn't go into depth about it" (Focus Group B, Interview 1). None of the responses about RTI learning were answered in relation to the mathematics or other methods courses but only about prior course work.

ESL PSTs frequently mentioned a lack of concrete or hands-on experiences with RTI and also indicated the desire to see more practical applications of RTI within course work experiences. This was the case within three of the four focus groups. Students within ESL degree plans offered the following thoughts about the lack of practical experiences in the ESL degree plans: "I just feel like we didn't really get much practical experience or hands-on stuff with RTI" (Focus Group A, Interview 1); "It's just different, and I would like more practice on how to do interventions and how to work with kids who are struggling" (Focus Group C, Interview 1).

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Special education. Students on the SPED degree plan gave very different responses when asked about course work and RTI learning experiences. These students did not reference textbook definitions, lectures, or presentations as ways that they learned about RTI but rather gave specific examples and projects from their SPED courses. These students cited several courses and projects in which they had to assess students in the classroom, create interventions, monitor progress, and make decisions based on student data. Five SPED courses were commonly referenced and are courses that only SPED majors are required to take.

Furthermore, candidates in the SPED degree plans frequently cited learning and experiences in these courses that mirrored RTI experiences. One participant stated, “I have extensively studied RTI for our classes. EDSP 4330 and 4320 are our assessment and evaluation classes and the strategies for special education. We actually had to do an RTI project” (Focus Group A, Interview 1). Another said,

Most of the special education classes that we take in some aspect have RTI within them, whether it's creating a lesson plan or going into the classrooms and seeing their RTI tiers and what those teachers are doing. I can remember the family and community class that we had to take here at [university]. I guess it integrated a lot of RTI, most of them, if not all of them, have RTI. And you learned about it each time at the very beginning of the semester, you reiterate it over and over again. (Focus Group C, Interview 1)

Two main projects surfaced from conversations with the SPED students about RTI course work. The first, known as the RTI project, was cited most frequently. In this project, PSTs had to work with an individual struggling student in the classroom for 10 weeks. The teacher candidate was required to give an initial assessment to determine the student's educational need, provide academic interventions to the child at a certain level of frequency, monitor progress of the student by taking data points, and make educational decisions based on the data collected. The other project was less cited and was known as the Communities in Schools project, where teacher candidates had to spend 10–15 hours working with a student. However, this project appeared to be more open ended, as only one preservice candidate referenced tutoring a student in an academic area related to RTI intervention implementation.

Tier model. When asked foundational questions about RTI and what it was, PSTs almost always referred to a tiered model of instruction and referenced the RTI tier triangle, including Tiers 1, 2, and 3. Differences in understanding about RTI became apparent when discussing the tiered model, as the question was answered at a more basic level by students participating in the ESL certification program than by students participating in a SPED plan. ESL teaching candidates narrated the following on the definition of RTI: “It is progressively more intervention for students, like the higher the level, the more support they need” (Focus Group A, Interview 1); “It's just building on what the students know, putting them into the

different levels. And just small-group instruction to help each group progress as quickly and as efficiently as possible, I guess” (Focus Group C, Interview 1).

Additionally, responses about the definition of RTI from the ESL participants indicated a high degree of uncertainty and hesitation about their understanding of RTI. Responses from the participants were frequently followed with phrases such as “I guess,” “I’m not sure,” “I’ll let someone else elaborate,” “I don’t know,” and “is that correct?” Phrases such as these were used in at least eight of the individual responses from the ESL participants across all four of the focus group interviews. Responses such as these were not seen among the SPED candidates.

In three of the four focus group sessions, at least one SPED participant was in attendance. The fourth focus group comprised only ESL degree plan participants. In this focus group session, none of the PSTs were able to give a working definition or indicate foundational understanding of RTI related to a tiered model of intervention other than to point at what they were seeing in their field-based experiences: “I don’t really know much about it” (Focus Group D, Interview 1); “I don’t really know much about RTI either . . . I feel like it’s something I haven’t really been as prepared for as I could’ve been through this program” (Focus Group D, Interview 1).

Thoughts and definitions about the RTI triangle from the few SPED participants were more detailed and hinted at a depth of understanding from previous course work that involved RTI projects and principles:

Being in the special ed program, I have extensively studied RTI. EDSP 4330 and 4320 are our assessment and evaluation classes and the strategies for special education. We actually had to do an RTI project. So let me explain to you RTI . . . (Focus Group A, Interview 1)

This respondent went on to give an elaborate definition of RTI, including giving a preassessment, monitoring progress for at least three or more points of reference, providing and modifying an appropriate intervention according to a child’s individual progress, and then adjusting the intervention frequency or intensity as necessary. Other narratives by SPED participants in other groups indicated similar detailed understanding of RTI, for example,

There are three tiers, and I’ve actually had to do a response to intervention project in one of my classes where I worked with a student for 10 individual sessions and did a report on that. So in Tier 1, I just know that that’s where the majority of the children are, and then Tier 2 is a little bit more one-on-one instruction, and then of course Tier 3 is the most intense instruction. (Focus Group B, Interview 1)

References to the RTI tier triangle were indicated as having been part of previous course work rather than part of current course work in the mathematics or other methods courses.

Intervention. PSTs in the ESL and SPED programs alike referred to RTI and the purpose of the MIP within the context of a system to provide assistance in the

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form of interventions to struggling students. Terms frequently used to identify this component of RTI included providing differentiated instruction, giving modifications and accommodations, using strategies for helping struggling or ESL learners, providing individualized instruction, and scaffolding. Teachers in both degree plans also described the extent of strategies gained in their course work to help struggling learners, although the specific strategies were aimed at either helping students with learning, behavioral, or other exceptionalities, as in a SPED program, or helping ESL students acquire a second language, as in the ESL program. This became a concern among some of the ESL participants in applying or generalizing the strategies to learners other than those with whom their course work prepared them to work, for example,

I feel like having the ESL certification puts emphasis on learning how to teach ESL students, which is great, but we still have other students that I feel lost sort of the emphasis because it's always, well, "How do you make language modifications?" . . . In my field placement I have kids with behavior issues, this one child can't sit down long enough to do the work. I'm like, "I don't know how to help him. How do I make him sit here and do his work or how do I make sure he's learning?" It's like if it was an ESL student I could tell you how to modify, but I don't feel like our classes have really put an emphasis on things like this. (Focus Group D, Interview 1)

Alternately, SPED candidates indicated more willingness to generalize strategies for providing intervention to all students, regardless of academic need:

As special ed majors, we had an entire class on intervention, like behavioral intervention as well as educational intervention and how to accommodate for different types of learners. Even the experiences that the learners we might come in contact with might be having how to support them in those situations. (Focus Group C, Interview 1)

Assessment and progress monitoring. PST candidates in the ESL and SPED degree plans frequently referred to the concept of assessment and monitoring progress of a student when discussing RTI and the purpose of the MIP. Assessment was seen as a way to identify a student's instructional level or areas of academic weakness, either before or after introducing a concept. Assessments were also seen as a way to monitor progress of a student throughout the instructional sequence. When ESL majors discussed the concept of assessment, frequently it was discussed in isolation, and the ESL major did not reference giving a specific strategy or intervention; several of these participants talked about how they gave assessments in their prior course work (reading classes, ESL classes) to determine the level at which a particular student was working. However, these conversations did not insinuate further action through decision making and planning to provide an intervention to assist a child: "There's a few of the assessment classes that we've taken, which are helpful in figuring out what students are struggling

and at what level they're struggling, or specifically what they're struggling with" (Focus Group A, Interview 1).

Responses from the SPED participants regarding assessment and progress monitoring indicated a complementary balance of assessment as a way to make decisions for future intervention implementation through course work experiences and the purposes of the MIP:

But in one of our courses we specifically chose an area that needed work with a student, and one-on-one did the assessments. And then built lessons on that, either progressively getting more difficult or broken up like scaffolding and things like that as needed. (Focus Group C, Interview 1)

Only one ESL preservice participant cited the MIP as an authentic and novel way to implement both the assessment and intervention strategies that had been learned in prior course work rather than creating generic lesson plans based on the Texas Essential Knowledge and Skills (TEKS). She stated,

I think it [MIP] also helps—it's [like] a real teacher, you know, we're assessing our students, figuring out what their needs are and then teaching and interacting with them based on that. . . . So it's kind of like a way to see how that whole process works. Instead of like, oh, as a class, this is the TEKS we need to meet. It's about what aren't we meeting, where do we need to go from here. I feel it's really authentic. (Focus Group D, Interview 1)

SPED candidates appeared to have more authentic opportunities to implement assessments and monitor progress than did ESL candidates as part of an authentic lesson cycle with students.

Future teaching contexts. Toward the completion of the MIPs, PSTs were asked two questions to determine their levels of confidence and motivation in intervening with future students. The first question regarded comfort level in implementing mathematics interventions to students in need; the second question asked teachers about their confidence in implementing an RTI process with students. Responses to these questions varied greatly, and differences were evident between ESL and SPED candidates' answers to the second question. Table 1 illustrates the numbers and percentages of responses to both questions.

Regarding the mathematical question, there were 12 overall responses, with 10 participants sharing their relative confidence to intervene mathematically with future groups of students. There were no significant differences in the responses from students in the two degree plans: Both SPED and ESL teachers proportionally responded that they were confident in intervening mathematically. There were, however, differences in how they attributed this confidence. Some teachers cited their learning in the mathematics methods or prior math learning courses, whereas others talked about their experiences with the MIP. The PSTs who expressed a lack of confidence cited their discomfort with teaching more difficult math con-

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tent as part of an upper-grade curriculum and their confusion with using so many mathematics strategies to teach a particular math concept. The positive responses about intervening mathematically were the only responses that both ESL and SPED teachers made. The following quotation is representative of some of the comments PSTs made about their confidence in intervening mathematically:

I now have a better grasp on how to kind of start that process and at least may do some preassessments or something more like needs assessment to kind of see where they are, gather their work, just since we've practiced a lot, kind of looking critically at student work. I mean, even in other subjects other than math, I think I would at least know where to start. . . . I think I feel more prepared to at least start get that ball rolling. (Focus Group A, Interview 3)

Responses to and perceived confidence regarding the second question were much more varied. Overwhelmingly, 68% of the responses to the question about PSTs' confidence in implementing RTI with a struggling student were negative or demonstrated a lack of perceived confidence. Five of the 22 responses were positive in nature, but these responses were all from SPED candidates. All 15 of the negative responses were from ESL candidates across all four focus groups. Two ESL PSTs talked about RTI in a neutral context. Both of these participants shared that during their field experiences, they witnessed their mentor teachers implementing RTI, which led them to understand more about the process. But this did not necessarily lead them to respond that they were confident about implementing RTI in a future setting. The following quotations from a SPED and an ESL candidate, respectively, are representative of responses to the question about confidence in implementing RTI in future settings:

I feel pretty confident. I'm special ed certified, or I will be. I think that with that, we've gotten a lot of additional strategies and stuff that we can use, specifically within RTI classes and things like that. I feel like I'm pretty prepared for that, and math is a big part of what we do. My first rotation, the majority of what we did

Table 1
Frequency of Positive, Neutral, and Negative Responses to Future Interactions Questions

	English as a second language	Special education	Total (%)
Confidence to intervene mathematically			
Positive	7	3	10 (83)
Negative	2		2 (17)
Confidence to implement RTI			
Positive		5	5 (23)
Neutral	2		2 (9)
Negative	15		15 (68)

Note. RTI = response to intervention.

was math, one-on-one or in small groups, so I got a lot of information from that, also. (Focus Group C, Interview 3)

I know I need to work on it [RTI] because I don't feel that confident because I'm ESL, so we haven't discussed it in any of my classes at [university] either, so I'm not aware. I know what it is, but I don't know how to implement it. (Focus Group B, Interview 3)

These questions revealed discrepancies between ESL and SPED candidates with regard to factors that influenced PSTs' understanding of mathematics intervention as RTI; both groups of PSTs were confident in intervening mathematically with students in future settings after completion of the MIP, but only SPED candidates shared their confidence in implementing RTI.

Mathematics interaction project. PSTs in the MIP samples made no specific learning references to the tier model, RTI triangle, or intervention or assessment processes. The only specific mention of RTI came in the form of a quotation from one ESL student, who said that she wished she had learned more about RTI within the context of the MIP:

A suggestion that I would make is to familiarize the student teachers with the RTI program prior to the math interaction project. I say this because as an ESL teacher, I came into this math methods class knowing nothing about RTI, except that it was divided into three tiers of learning when working with a child. However, I wish I had a deeper knowledge about RTI and how to weave it into math intervention strategies with various grade levels of students. I feel like I could have learned much more about RTI at a deeper level if I was able to learn some of the strategies in class.

RTI was not specifically inherent to the MIP projects based on the results of this study.

**Principle 9:
Drill and Practice**

Haskell's (2001) ninth principle can be summed up in the common saying that "practice makes perfect." However, Haskell believed that opportunities for practice need to be reflective in nature rather than involving rote memorization and repetition strategies. The term practice has two basic meanings that are important to consider in understanding this principle: First, practice is to do or perform something repeatedly to attain and master a skill; second, "practice is to continually work at something as in a profession or vocation" (p. 171). In other words, Haskell believed that for meaningful transfer to take place, learners must be provided with opportunities to meaningfully, reflectively, and repeatedly practice their learning.

Focus group interviews revealed relatively little information about opportunities for PSTs to practice theoretical and practical knowledge about intervening with students as part of an RTI or intervention process, other than what was specific

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to the MIP. Students on the SPED plan referred to a 10-week RTI project and an additional project in which they worked with a student or person with disabilities. However, the consistency of implementation and specific components of this practice are unknown; many assignments seem to be tied to individual courses or course instructors. ESL candidates, too, referred to other experiences practicing reading assessments and to instructional practice with ESL students, but the specifics are also unknown. One preservice participant summed up her perceptions about the lack of hands-on practice, experience, and opportunities for PSTs to work with students by saying,

The practice, it is for kids who are supposed to make their educational experience hands-on and authentic and mean something. And I don't get that feeling with our classes. It's all about the theory, what are you going to do, this is how you can modify it, this is how you could do it. But we're not getting the hands-on. . . . For instance, role-playing; how about if a student had this? How would you handle it? Have our teachers give us feedback, things like that. That doesn't happen. (Focus Group D, Interview 1)

In discussing the MIP as an opportunity to get classroom experience working with students in an instructional cycle of intervention and assessment, one participant echoed the sentiments expressed by others regarding their lack of experience and practice opportunities:

I feel like this project will be a good way for us to get more experience, like accommodating to the fit the needs of children and planning for children. But I feel like, it also will still kind of leave us feeling like, "OK. Well, we know how to do this on a small scale." And I don't know if it'll give us what we need to be able to do it on a bigger scale for a whole class. (Focus Group D, Interview 1)

Drill and practice opportunities regarding intervention and assessment implementation were not positively identified and were rarely connected to an explicit RTI process. Information gleaned from the data in this study demonstrated that the MIP is one of the relatively few opportunities that PSTs had to practice their learning in an authentic, instructional environment with students. The preceding quotation suggests a recurrent concern shared among PSTs about their ability to implement intervention and appropriate instruction for students on a larger scale, owing to limited practical opportunities during their course work at the university.

Discussion

Differences in levels of transfer existed between the ESL and SPED candidates. ESL candidates evidenced a lower level of application transfer regarding RTI understanding and practice. This level of transfer is best defined as using what has been learned and then applying it to a specific situation (Haskell, 2001). In this case, ESL teachers demonstrated knowledge and skills acquired in the mathematics

methods course and applied this knowledge to their interactions with students as part of the MIP in the field-based setting but did not purposely see this interaction as an example of the RTI process in action.

Several factors contributed to this lower level of transfer. ESL candidates did not strongly exhibit the first principle of transfer, a core foundational knowledge of RTI. ESL PSTs repeatedly cited a lack of knowledge about RTI and inadequate opportunities to practice implementing RTI with students. Additionally, ESL teachers overwhelmingly admitted that they were not confident in implementing RTI in future teaching settings, and many participants shared that RTI was something they needed to learn more about before stepping into the classroom as a first-year teacher. ESL PSTs were confident in mathematically intervening with struggling students in a future context, as evidenced by interviews and MIP statements, although participants appeared to be so wholly engrossed with the definition of RTI and related terminology (tiers, interventions) that they could not identify the underlying relationships between the MIP and RTI after completion of the project. This was mainly due to inadequate foundational knowledge of RTI and a lack of practical experience with RTI in action prior to the MIP (Principles 1 and 9), although failure to adhere to the other principles was also a contributor.

Although Principle 7, cultural and contextual supports of transfer, was considered related to mathematics instruction and intervention as part of the MIP, no evidence exists that these supports existed for RTI learning. PSTs stated that prior university course work did not support RTI learning, prior course instructors were perceived as having little knowledge about RTI, field-based settings were not consistent in providing access to RTI experiences, and RTI was not included as part of the mathematics methods course. Additionally, drill and practice opportunities were nonexistent prior to the MIP.

Candidates in the SPED degree program evidenced a much higher level of near-transfer regarding RTI understanding and practice. At this level of transfer, learners were able to use previous knowledge and transfer this knowledge to new situations that were similar but not identical to the original learning environment (Haskell, 2001). In this study, SPED teachers used prior knowledge, skills, understanding, and experiences in both prior SPED classes and assignments and the mathematics methods course to apply learning about RTI within the context of the MIP assignment. Even before they started the MIP implementation, in many instances, SPED candidates referred to the MIP as a project that “mirrored” other experiences they had had in SPED course work.

Several principles contributed to the higher level of transfer that SPED PSTs experienced. SPED candidates demonstrated a more thorough knowledge of RTI, including experiences and examples. ESL candidates were only able to recall basic definitions and topical details. The main difference between ESL and SPED candidates regarding RTI knowledge was that SPED teachers, unlike their ESL counterparts, were able to understand the similarities and underlying structural components of the

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MIP that represented RTI in action; thus they experienced a higher level of transfer about the project. When asked about confidence in intervening mathematically in future settings and implementing RTI, SPED candidates responded emphatically about their confidence in doing so. This suggests that SPED candidates were able to conceptualize the MIP, coupled with prior learning, as comprising practice opportunities that mimicked RTI interactions.

RTI learning was not specifically supported through the mathematics methods course or field-based environment, and SPED candidates indicated that prior learning opportunities and course instructors had served as cultural and contextual supports for learning about RTI (Principle 7). Finally, SPED candidates indicated additional drill and practice opportunities to practice implementing RTI with students through prior learning as part of their SPED course work.

Implications

There appears to be a discrepancy between what RTI was intended to do and how PSTs are prepared to apply RTI principles. RTI has been repeatedly positioned as a general education intervention system intended to immediately target students struggling to achieve mastery in the regular curriculum (Fletcher & Vaughn, 2009; Mastropieri & Scruggs, 2005). Thus it is expected that general education teachers will have the primary responsibility for implementing screening, assessment, and intervention and for monitoring interventions that come as part of RTI. However, in this case, PSTs in the ESL degree program had little to no background knowledge of RTI from course work, and despite implementation of the MIP, they were unable to demonstrate transfer of learning about the tenets of the MIP to a wider application of RTI in the MIP. SPED candidates achieved a greater degree of transfer because prior course work in the degree plan allowed for a more thorough knowledge, understanding, and experience of RTI. The discrepancy in this case is that SPED candidates will almost exclusively teach students who have already been identified for special education services and will not actually implement RTI interventions with general education students. The implication is that confusion about RTI and its purpose in the general education venue will continue.

The SPED program at the university takes ownership in preparing future teachers in RTI to assist struggling students, whereas the teacher education program responsible for training general educators does not. Thus it can be assumed that although RTI is widely heralded as a general education intervention, it is actually seen as a process that falls under SPED authority. The findings are consistent with prior studies in PST education and RTI practices (Begeny & Martens, 2006; Kuo, 2013; Neal, 2013); SPED PSTs typically receive more in-depth preparation than their general education counterparts. Specifically, Neal's was the only study to include both general education and SPED PSTs in the sample, and Neal similarly

found that SPED PSTs demonstrate higher levels of self-efficacy in implementing RTI due to more extensive course work and implementation opportunities.

It is evident that by creating specialized degree plans (ESL, bilingual, SPED), the university is preparing a generation of teachers who are highly trained to work with certain groups of students but who lack the skills and knowledge required to work with those who do not fall under the criteria of their specialized programs. PSTs in the ESL program tended to see RTI as a feature of SPED; reflections frequently showed that they only had one SPED class, although they had numerous classes about working with ESL learners. The interesting part about this is that students who most often need access to RTI interventions are those requiring ESL and language modifications and accommodations for learning. Thus it appears that a thorough understanding of RTI and its practices is greatly needed among all general educators as a fundamental component of being prepared to work with a diverse group of students in our schools today.

Instrumental in achieving this point is that RTI be consistently included within the context of general education intervention. As is, RTI learning occurs primarily in the context of SPED courses at the university and is only briefly mentioned in other courses. RTI learning was not part of the mathematics methods course or any other methods or ESL course work according to the participants. It is recommended that RTI be a foundational tenet of all education courses at the university in helping PSTs understand the important components of the intervention process. ESL classes, pedagogy, and methods/content course work can achieve this simply by incorporating the features of RTI into already existing instruction. In the case of the mathematics methods course, the MIP was an ideal assignment that exemplified the features of RTI in action and helped PSTs in understanding how to use assessment data and interactions with students to make decisions and drive future instruction. As evidenced by the SPED candidates, strengthening foundational knowledge and contextual supports, and increasing the number of opportunities for drill and practice (Principles 1 and 9), can increase the level of learning transfer.

According to the latest report of the Office of Special Education Programs (2013), students with learning and other moderate disabilities are increasingly receiving all or the majority of their instruction in the general education classroom. Current educational trends emphasize general education interventions and differentiation as the way to meet individual learning needs rather than sending students to specialized classrooms. RTI serves as the “gatekeeper” between general education interventions and SPED identification and requires that the general education teacher be familiar with the best instructional practices to work with diverse learning needs. Effective RTI practices are necessary to assist students rather than just referring them for SPED placement, especially if all students require are small-group or one-on-one interventions to master the curriculum. A comprehensive understanding of RTI is crucial at the university level so that PSTs can transfer these practices when confronted with diverse learning needs on a regular basis in the classroom.

Limitations

Prior course work was not used as a data source for this study. Although differences in the degree programs related to generic content based on the course titles and descriptions were evaluated, specific assignments, practices, and knowledge from these courses were relatively unknown. Thus, in looking at the background knowledge of RTI learning among the SPED and ESL candidates, the main gauges for measuring Principles 1 and 9 were PSTs' responses to questions in the focus group interviews and their written reflections on the MIP.

Cultural and contextual support of RTI learning in the field is something that the university has little control over outside of course work. The university can most definitely oversee course work and learning about RTI in specific courses, such as SPED, ESL, and methods classes, but cannot guarantee that all PSTs have identical experiences in the field. PSTs were assigned to a variety of districts, campuses, grade levels, and teachers, all of which accounted for a wide variety of experiences according to the individual policies and practices of a respective district. As the findings suggest, the campus and mentor teachers exhibited quite a bit of authority over what PSTs had access to regarding RTI practices. Many PSTs did not see RTI practices or were unsupported in their efforts to learn about the process in a classroom setting. Cultural and contextual supports of learning are deeply dependent on the participating district and mentor placement and cannot be regulated to provide consistent experiences for PSTs; it is the job of the university to support teachers in their learning about RTI implementation, and any field-based support should be considered as a bonus learning opportunity. Results of the study support the need for increased preparation in RTI practices for PSTs, regardless of degree program, but especially for teachers pursuing the general education classroom as a future career.

Conclusion

RTI is a vital component of supporting at-risk students in schools today. General education teachers must be prepared to handle diverse learning needs. RTI is the accepted practice to assist students who struggle to master the curriculum by immediately identifying, targeting, and monitoring learning needs. Much of a teacher's preparation to implement academic interventions comes from his or her preservice preparation. University preparation programs should consider transfer of learning and generalization to future teaching practices as the ultimate goal for PSTs.

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Connecting University Course Work and Practitioner Knowledge through Mediated Field Experiences

By Sara Sunshine Campbell & Teresa K. Dunleavy

Teacher preparation in the United States, both university based and alternative, has been strongly critiqued as ineffective when it comes to preparing new teachers (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Levine, 2006; Lortie, 1975; Walsh, 2001). Recent reports such as those by the National Council for the Accreditation of Teacher Education (2010) and the American Association of Colleges of Teacher Education (2013), while crediting teacher education for working toward making significant improvements, voiced concern for issues still needing improvement, including field experiences and the lack of diversity in the teacher workforce. Although many stakeholders would agree that there is room for improvement in teacher education in the United States, the country is deeply divided about how to accomplish such change (Levine, 2006; Zeichner, 2010). Although many criticisms have been directed at alternative teacher education, we center this article on university-based teacher education because approximately 70% of our nation's teachers are certified through these programs (U.S. Department of Education, 2013).

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Connecting Coursework and Knowledge

Perhaps one of the most common critiques of university-based teacher education is the gap between what preservice teachers learn in their preparation programs and the implementation of those ideas and practices in the nuanced contexts of public schools (Darling-Hammond, 2009). This gap has been called the *two-worlds pitfall* (Feiman-Nemser & Buchmann, 1985) and the Achilles' heel of teacher education (Darling-Hammond, 2009), signaling the significance of the issue. Teacher preparation occurs in two distinct settings, university and field, and it is often left to the novice teacher to navigate the gap between course work and fieldwork (Britzman, 2003).

University-based teacher preparation is gaining attention for working to increase the level of connectedness between course work and teacher candidates' (TCs') experiences in the field. Brouwer and Korthagen (2005) found that teachers' performance during their induction years was positively influenced by opportunities they had been given to relate practical experience to their academic course work during their teacher education programs. Darling-Hammond (2006) studied several exemplary university-based teacher education programs, finding that teachers were better prepared for teaching when course work in the university was related to their practical experiences in the field. Allen and Wright (2014) found that when TCs' course work assessments were rooted in field experiences, TCs reported feeling more competent to teach. Horn and Campbell (2015) found that when mathematics methods instructors debriefed classroom observations with novice teachers and the classroom teacher, novice teachers were provided opportunities to develop their *pedagogical judgment*, or ways to become responsive to the particularities of students and contexts.

Findings on the importance of the relationship between course work and fieldwork are significant because they are a potential response to the critique of an overemphasis on academic course work disconnected from the realities of the classrooms and communities that teachers are being prepared to enter (Zeichner, 2010). Common responses to the overemphasis on course work are to increase the length and frequency of field placements. However, recent studies have also shown that although the quality of a field experience has significant positive effects on teacher candidate outcomes, such as perceived competence, the duration of field experiences had no significant effect (Caprano, Caprano, & Helfeldt, 2010; Ronfeldt & Reininger, 2012). Rather than simply recommend more time in the field, these studies advocate for research in teacher education addressing the structures and activities that constitute quality field experiences.

Recently, aligning course work and fieldwork has been constructed around practice-based teacher education where novices decompose, represent, and approximate key sets of teaching practices (see, e.g., Ball & Forzani, 2009; Forzani, 2014; Grossman et al., 2009; Lampert et al., 2013). McDonald, Kazemi, and Kavanagh (2013) provided novices opportunities to enact a core set of practices, first in a *controlled* setting (university methods course), then in a *designed* setting (methods course situated in a K–12 classroom), and finally in an *authentic* setting (student

teaching or practicum classroom). Whereas research in practice-based teacher education provides teacher educators with a pedagogy that aims to connect course work and fieldwork, this article responds to the need for further investigation of specific practices, activities, and structures in teacher education that can support the course work–fieldwork connection. Furthermore, this study features one way in which K–12 teachers’ knowledge and expertise can be leveraged to connect course work and fieldwork.

This research study responds to the call for empirical evidence addressing the course work–fieldwork gap (Cochran-Smith et al., 2015). Because we know that teacher learning is supported by intentionally connecting teacher education programs to field placements, we assert that research must look more closely at the ways in which teacher education can successfully bridge what is learned in the university and what is learned in the field. In this study, we examine how one university-based secondary teacher education program utilized mediated field experiences (MFEs) during TCs’ first quarter in their four-quarter master’s in teaching program.

It is often the case in teacher education that TCs are first provided opportunities to learn about teaching in the university and then sent out into the field to practice what they have learned. It is not common for methods instructors, who are responsible for teaching the desired practices and pedagogy to the novices, to witness how the novices take up those practices in the field. Nor do methods instructors have a sense of the classroom environment, the school and community contexts, or the practices that are valued in the classrooms in which the novices are asked to observe.

The five methods faculty of this teacher education program designed MFEs as university–school partnerships that worked to bridge the course work–fieldwork gap. In the MFE, the methods instructors traveled into the field with the TCs and engaged with the partner teachers and TCs in activities centered on teaching and learning. The structures and activities of the MFEs varied across the five methods courses and included activities such as observing, interacting with students during small group work, and teaching lessons.

The MFEs at this university were enacted in different ways, yet they embodied a similar vision for supporting TC learning. One goal of the MFEs was to provide all TCs with a similar, shared experience in a classroom where the TCs, along with the university faculty and partner teachers, could raise questions about the relationship between teaching practices and student learning. With the goal of mediating the observation of teaching practices situated in the realities of urban, public school classrooms, the university instructors and partner teachers worked collaboratively to draw links between what the TCs were learning in the university and what they experienced in the field. The MFEs varied among the content methods courses, including variations in their content, in their length, and in the aspects of the MFE the instructors chose to mediate. However, each variation of the MFE enacted the program goal of connecting field experiences to what was learned in the methods courses and other university course work.

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In this study, we explored the relationship between the university instructors' goals for the MFEs and the structures and activities of the MFEs. We asked the following:

1. What were the university instructors' goals for the MFEs?
2. What was the relationship between the university instructors' goals and the structure and activities for the MFEs?
3. In what ways did the structures and activities of the MFE become mediating tools for placing TC learning at the center of the activity system?

Theoretical Framework:

Cultural–Historical Activity Theory

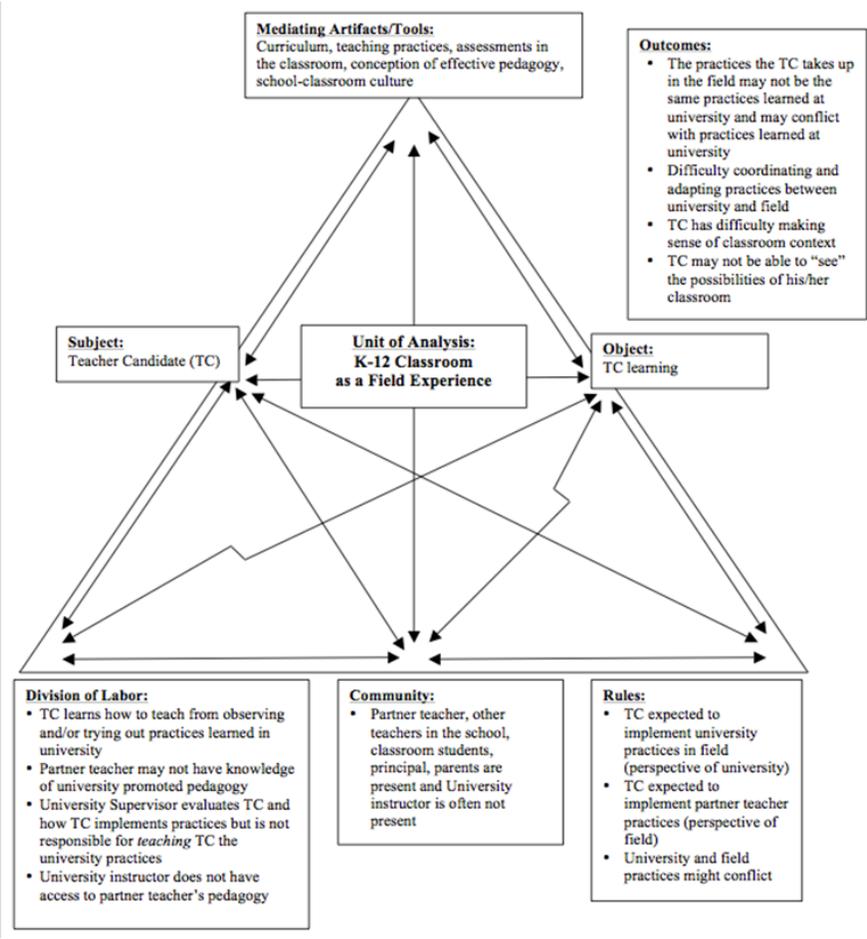
Cultural–historical activity theory (CHAT), which originated from activity theory, addresses the long-standing tension between the individual and society through developing the activity system as the unit of analysis (Roth & Lee, 2007). Activity theory focuses attention on the learning that is revealed by an individual's use of socially, culturally, and historically situated conceptual and material tools. CHAT expands on activity theory by viewing the act of learning as situated within cultural and historical contexts where interactions between the *subject* (learner) and the community are mediated by rules and artifacts and by the negotiation of power and responsibilities (Anderson & Stillman, 2012; Ellis, Edwards, & Smagorinsky, 2010).

Researchers argue that field experiences are not set up for TC learning because the primary goal of a public school classroom is K–12 student learning and not TC learning (Feiman-Nemser & Buchmann, 1985). We use this article to consider how field experiences can simultaneously center on both student and TC learning. Using field experiences in K–12 classrooms as the unit of analysis, we conceptualize the course work–fieldwork gap as a contradiction within the activity system (Engeström, 2001); that is, CHAT allows us to frame the K–12 classroom as an activity system with its own *division of labor*, *community*, and *rules*. In a classroom, the object, or what is being “worked on,” is student learning. When a TC is placed in a K–12 classroom for a typical field experience, the *object* of the activity system does not necessarily shift to TC learning.

Drawing on Engeström's (2001) notion of contradictions in the activity system, we view typical classroom field experience as an activity system with contradictions, or deviations from standard scripts or ways of working toward the *object*, that work to alter the *outcome* of the system (Engeström, 2000). In this case, contradictions lie between the *division of labor* and the *object* and the *community* and the *object* (see Figure 1). When the university instructor is not part of the *community* of the activity system and the TC is responsible for learning to teach by attempting to implement practices learned in the university, without

appropriate supports, the field experience may fail to serve its intended purpose: TC learning. Often mentor teachers do not have the knowledge of practices that TCs are expected to implement in the classroom and cannot adequately support the TC (Borko et al., 2000). In addition, partner teachers are rarely proportionally compensated for their work in mentoring TCs, and they must do this work in addition to their primary responsibilities of teaching the K–12 students in their classrooms. This conflict results in an activity system that has K–12 students, rather than TC learning, as the *object* of the activity system. The lack of a shift

Figure 1
Contradictions in the K–12 Classroom
as Typical Field Experience Represented by Jagged Lines



Connecting Coursework and Knowledge

in the *object* of activity, from K–12 student learning to TC learning, contributes to the course work–fieldwork gap in teacher education.

In this study, CHAT allowed us to understand how the MFEs shifted the *object* of the activity system to TC learning through its structures, goals, and practices. Our analysis of each MFE focused on how the mediating tools and structures shaped participation as well as the ways in which the structures, activities, and goals of the MFEs held TCs' learning as the *object* of activity.

Methods and Data Sources

The data for this qualitative study were taken from a graduate teacher education program located in a large research university in the northwestern region of the United States. Data collection occurred in two stages. In the first stage, data were collected extensively from the secondary mathematics methods course and the MFE for the course. In the second stage, data were collected across all five secondary content methods courses. Collecting data in these two stages allowed us to consider both widely and deeply how the instructors' goals for the methods courses directed the structure and activities of the MFEs and how these structures and activities became mediating tools for TC learning.

Data Collection of the Secondary Mathematics Methods Mediated Field Experience

The math MFE entailed seven weekly classroom observations followed by 1-hour debriefing sessions. The TCs, the university instructor, and the partner teachers were present at each observation and debriefing. In addition to the MFE, the TCs attended a weekly 3-hour methods class held on the university campus and taught by the university instructor.

The first author collected extensive data from within the secondary mathematics methods course, including the MFE. Data from the mathematics MFE included field notes from the seven high school Algebra 1 classroom observations; video recordings of the seven debriefing sessions following each field experience visit; TC course assignments; and interviews with the partner teachers, the university instructor, and 4 of the 13 TCs. The partner teacher interviews focused on the participation of the partner teachers during the MFEs, their understanding of the function and purpose of the MFEs, and their ideas about TCs' learning. The university instructor interviews focused on asking about her role and what she thought the TCs were learning. The TC interviews focused on TCs' experiences during the MFEs, their learning, and their understanding of the MFEs' purpose and goals.

**Data Collection Across Other Content-Area Methods
Mediated Field Experiences**

The second author collected two sets of data. Semistructured interviews were conducted with instructors for world languages, social studies, science, and language arts, and field notes were gathered during MFE observations. The world language, social studies, science, and language arts instructors were each interviewed once. The interview questions focused on the goals and structures of the MFEs while seeking to understand each instructor's experiences with and expectations for the MFEs. Each interview was transcribed and coded for MFE goals and structures.

World languages, social studies, and language arts. MFEs were observed two or more times. Ethnographic field notes focused on the structure of the MFE and the various activities in which the participants engaged. Notes also attended to the roles the TCs, partner teachers, and university instructors took on during the MFE. Where possible, full conversations were captured.

Data Analysis

We drew on inductive methods of analysis, using open coding, analytic memos, and interpretive code labels (Miles & Huberman, 1994). Because we were interested in the MFEs as situated and contextualized learning spaces, we looked for relationships between the structures and activities of the various MFEs and the stated goals and purposes of the university instructors (Merriam, 2009). The data allowed the authors to analyze the different models of the MFE and how the models were structured and implemented based on the ways in which the instructors conceptualized the purpose of their version of the MFE.

After open coding during a first read of all data sources, we created memos of potential emerging themes (Merriam, 2009). We then created data analysis tables to triangulate the data across different content areas, in search of emergent findings. We chunked the data into categories and assigned codes. Initial codes that surfaced included goals, structures, partner teacher knowledge, activities, roles, and context. Because we were interested in understanding whether and how the structures and activities of the various MFEs became mediating tools for TC learning, we used broad open coding. Through triangulation of participant observations, interviews, and an analysis of documents, we were able more clearly to validate patterns we were noticing in the data. We compared results of our coding process and resolved ambiguities (Silverman, 2006). Drawing on CHAT, we focused our analysis on the social and historical structures of the MFEs and how they mediated TCs' course work and fieldwork experiences.

Findings

In this study, we sought to understand the relationship between the structures and activities of the MFEs and the resulting connections between university course work and the field. First, we found that the content methods instructors held somewhat different goals for accompanying the TCs into the field. Second, we found that structures and activities of the MFEs were dependent on the instructors' goals for TC learning. Third, although the goals that determined the structures of the content-area MFEs were different, we found that all goals worked to bridge the course work–fieldwork gap.

Mediating Teacher Candidates' Understanding of Teaching Practice and Student Learning

Across each methods course MFE, the methods faculty shared a common purpose for taking their TCs into the field. We found that their shared goal centered on bridging the gap between the ideas and practices of the methods courses and the realities of public school classrooms. Each methods instructor designed his or her MFE in partnership with practicing teachers. We found that the university instructors and partner teachers collaboratively designed activities that mediated TC learning of the concepts in the methods courses. In this section, we provide examples of how the MFE was designed in relation to the specific goals each university instructor held for his or her methods course. We describe the nature of the activities and structures of each content methods course and how these activities and structures resulted from the university instructor's goal for the MFE. Finally, we demonstrate how the structures and activities mediated connections between campus course work and field experiences.

Social studies: “Creating a shared text.” Barry, the social studies methods instructor, designed the social studies MFE so that he met with the TCs once at a middle school and once at a high school. Barry and the TCs arrived a few minutes before the lesson started, received brief instructions from the partner teachers about the roles they should enact during the lesson, observed the lesson, interacted with students through lesson participation, and debriefed the lesson with the partner teachers. Barry viewed the goal of the MFE as a way to offer a common field experience the TCs could interpret and analyze together. During an interview, he said,

A key purpose [for the MFE] is to enmesh TCs in a school classroom, together with its teacher and the university content methods professor, so that they all share a text. In this case, an experience for observation and interpretation. . . . So now what we have in the MFE is a shared text, like we do in Socratic seminar, where everybody has the same text in front of them basically. So we're able to refer back to it, because we all share that text.

Barry suggested that one of the purposes for taking his candidates into the field was

to provide them with a “shared text,” or shared experience, focused on understanding what it was like to be in an urban, secondary social studies classroom. He gave the TCs the same role for the MFE as he would for a shared text in Socratic seminar: to interpret, analyze, and discuss the “text.” Guided by the idea of a shared text, the candidates observed, interpreted, analyzed, and discussed the same secondary classroom lesson, often referring back to events in the lesson later on in the quarter.

Barry’s goal was for the TCs to collectively experience a social studies lesson in which the partner teacher implemented some of the practices he was teaching in his methods course, such as Socratic seminar and problem-based instruction. Related to this goal, Barry thought it important that the TCs were able to notice practical aspects of being a teacher as well. He said TCs should be able to

observe and think about really common and mundane aspects of classroom life that they can’t see without mediation. They’re just invisible to the novice eye. Such as, the teacher reminding students of classroom norms. Or, the way teachers deal with status differentials in the classroom. Or, the way a teacher will manage multiple goals. Or, all the classroom management things that teachers are doing that [TCs] don’t see until they’re pointed out.

Supporting the TCs to “notice” (Sherin, Jacobs, & Philipp, 2011) particular aspects of classroom instruction, such as how a teacher attends to academic and social status or manages his or her classroom, was an important goal of the social studies MFE. Providing TCs opportunities to notice certain aspects of classroom life allowed them to then interpret and analyze what they noticed with the support of Barry and the partner teachers.

Barry’s goal of a “shared text” led him to structure the social studies MFE so that TCs could participate in a social studies lesson. The social studies students were interpreting the Langston Hughes poem “Let America Be America Again.” The TCs were invited to sit in small groups with the high school students and to take on the role of group member, soliciting students’ thinking and interpretation of the poem. Interacting with students allowed the TCs to simultaneously observe, work with, and analyze the students’ learning, in the context of the partner teacher’s lesson.

Following the lesson, the TCs debriefed with the partner teacher. TCs were invited to pose questions while Barry purposefully took on the role of facilitator, mostly remaining quiet and listening and sometimes adding to what was said or naming an idea or practice. Barry reported that the social studies TCs used this experience as a shared text across the rest of their time together in the social studies methods course to interpret what they noticed during their time in the classrooms. This shared text became a bridge between the practices the TCs were learning in their methods course and how those practices might look in a high school social studies classroom.

The science instructor and world languages instructor both expressed similar goals around creating a “shared text.” David, the science university instructor,

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stated that taking the TCs into the field offered opportunities to observe aspects of classroom practice David saw as important in learning to teach science. For David, the advantage was not only providing the TCs opportunities to “hear this [student] conversation, but . . . it’s commonly shared across the whole cohort. And it becomes a collective object of inquiry for us.” Like Barry’s idea of shared text, David saw the MFE as a way to create a common experience from which to analyze teaching and learning.

Mathematics: “Increase access.” For the mathematics methods course, we found that the goal for participating in the MFE was to shift TCs’ notions of what it means to teach and learn mathematics. Casey, the university instructor, stated that the mathematics TCs often came into the program with predominantly teacher-centered ideas about how mathematics should be taught, often based on their own experiences learning mathematics. One of the ways Casey said she tried to support the TCs in rethinking what it means to learn mathematics was to provide them an opportunity to see that Algebra 1 students, many of whom had not previously been successful in mathematics, were quite capable of making sense of challenging mathematical ideas. In addition, she stated that the TCs needed opportunities to witness productive discourse and collaborative work, along with multiple ways of solving a problem, to see that these ways of *doing math* are all important parts of learning mathematics in the secondary schools. Casey said,

I think it is really easy to say, “I like math, therefore I should be a math teacher.” And I think we have to try to, in this course, overcome that a little bit. So opening [TCs’] eyes a little bit and also encouraging them to think about teaching mathematics, besides just conceptual understanding, . . . but teaching mathematics equitably. [The goal is] to have students access mathematics who haven’t, in the past, been able to access mathematics. I think the purpose of the MFE is to bring our TCs into the field and get them thinking about the ways that students are experiencing mathematics.

In bringing candidates into the field during her methods course, Casey said she wanted to introduce TCs to the idea of increasing access to mathematics for all students, especially students who have experienced mathematics as a gatekeeper.

Based on her goal to support TCs in reconsidering how students experience mathematics, Casey structured the mathematics MFE to observe the same students and the same teacher across several weeks. The mathematics MFE was held once each week for 7 weeks. In the university course, the TCs talked about and engaged in the practices they might observe in the field. Then they observed an Algebra 1 lesson in the partner teachers’ classrooms and debriefed the lesson with the partner teachers who taught the Algebra 1 course. Casey asked TCs to focus each observation around a particular pedagogical idea or practice, such as how status interactions impacted students’ opportunities to learn or how the partner teachers used manipulatives to support multiple solution strategies. During the debriefing

session, the classroom teachers shared their goals for the lesson and reflected on what they thought their students learned during the lesson and what more their students needed to learn. The TCs were able to make observations about what they noticed during the lesson, as it related to the particular focus of the day, and pose questions to the classroom teachers. In addition, the TCs each interviewed one student about the student's mathematical understanding of a particular lesson.

Casey noted two important structural aspects of the MFE that provided TCs with opportunities to examine the relationship between mathematics teaching practices and student learning. She said,

I think that we very carefully select classrooms where we believe that the TCs are going to be able to see students thinking conceptually about mathematics and not just procedurally. The first facet of that is the actual observation—being able to observe these students in classrooms, being successful. We've also strategically chosen classrooms where students haven't necessarily been successful in mathematics and where we think they are being successful, many of them, for the first time. So there is that observation piece. And then the debrief piece is important. Part of the experience [is that] I think we are trying to help them [the TCs] filter some of what they are seeing, make sense of what they are seeing, and we're trying to facilitate ways of thinking about what they have observed.

In this excerpt, Casey emphasized the importance of supporting TCs in making sense of what they noticed during the lesson. First, she commented on how the TCs observed students successfully engaging in cognitively demanding mathematics instruction, many for the first time. Second, she noted how the debriefing session facilitated the opportunity for TCs to interpret the ways in which student learning took place. In other words, the partner teachers' reflections on the lesson allowed the TCs to notice and make sense of their own observations.

To support the TCs in considering alternative ways to teach and learn mathematics, Casey structured the MFE so that the TCs were able to observe mathematics classrooms with partner teachers who implemented practices that were the focus of the methods course. In one instance, the partner teachers assigned a *participation quiz* (Featherstone et al., 2011) to their students while the TCs observed. During the debriefing session, Casey asked the partner teachers to explain the goals behind a participation quiz and how the teachers used these quizzes to support productive and equitable group work (Cohen & Lotan, 2014). Although the TCs may not have noticed or understood the rationale behind the participation quiz, asking the partner teachers to discuss why they used it is representative of the way Casey mediated what the candidates observed.

Casey said her goal was to provide TCs with opportunities to redefine what it means to teach and learn mathematics. We found that this goal determined the structure and activities of the mathematics MFE. Providing the TCs opportunities to observe teachers who taught using equitable and progressive teaching practices allowed Casey to deliberately focus the TCs' attention toward specific practices and

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how those practices may have impacted opportunities for student learning. These kinds of equitable teaching practices were often the practices that the TCs might not otherwise have noticed if they had been observing a lesson on their own.

Language arts: “Being with kids who are different than they are.” Alexa, the language arts university instructor, said she brought her TCs into the field to help them learn ways to build relationships with students who were “different than they are.” Alexa wanted the TCs to recognize that if the TCs were going to be able to help students realize a passion for language arts, they needed also to develop ways to learn about students’ interests and life experiences to establish relationships with them. In one interview, she said,

[In past cohorts,] there were issues with the TCs thinking they really wanted to teach in high-needs urban schools and getting there, and not liking it. And wanting to be in outlying [suburban] districts. I don’t want this cohort to get to that spot. So one of the reasons for doing this [MFE] at [this school] is for them to be with kids that are different than they are. Figure out how to work with these kids. And feel much more comfortable with young people. [TCs] are going to be so far ahead. Just as far as relational pedagogy. Their relationships are going to be much better grounded.

In this excerpt, Alexa shared her goals for the language arts MFE, which included creating opportunities for TCs, who claimed they wanted to work with students in high-needs schools, to get to know students and therefore to value who the students are as individuals.

To support Alexa’s goal for TCs to develop what she refers to as *relational pedagogy*, Alexa structured her methods course to meet twice a week on the middle school campus. Holding the methods course entirely at the middle school worked to develop TCs’ knowledge of the community in which they worked. She said,

[We are] starting with class community. First of all, we’re meeting every week, both periods at [the middle school]. So class community. Starting them off with Linda Christiansen’s book *Reading, Writing, and Rising Up*, about working with African American students. And then Ron Suskind, *A Hope in the Unseen*. So, situating our language arts TCs into an understanding of some of the dilemmas that high-needs kids have.

Alexa’s structure offered the language arts TCs the opportunity to become enmeshed in what it means to develop relationships with students in a high-needs school context while also helping them better understand both the richness and complexities of the community in which this middle school was located. Because the TCs were able to spend 10 consecutive weeks in the school working with students, teachers, and other community members, the TCs were able to develop strong relationships with students. These relationships supported Alexa’s goal of helping TCs see the value of working in diverse urban schools.

To further utilize the middle school campus location, Alexa invited students,

administrators, and three partner teachers to lead the methods course as guest panelists and guest teachers. During these visits, TCs asked questions of the student panelists, administrators, and partner teachers related to how they develop relationships in order to teach and learn in this school community. Over the course of the MFE, TCs were paired up with at least one student in one of the partner teacher's classrooms and regularly visited these classrooms to work one-on-one with students. Alexa said this TC–student partnership afforded TCs the opportunity to learn more about students as individuals and to support their students in developing a passion for language arts.

We found that the language arts MFE school site played an important role in supporting TC learning. Alexa's primary goal for the language arts TCs was for them to develop relationships with students. She recognized that the TCs needed a special set of skills for working with students in high-needs schools and that, if she were able to support the TCs in developing these skills, they would feel more successful teaching in these schools. We found that Alexa's goal was that the TCs would develop the relational pedagogy needed to be successful as teachers in a high-needs school.

Across all MFEs, the instructors designed their MFEs based on what they wanted the TCs to learn from both university course work and field experiences. We found that these learning goals shaped the structure of the MFEs and the activities within the MFEs in ways that intentionally bridged the field and course work experiences of the TCs.

Placing Teacher Candidate Learning at the Center

We found that the university instructor and the partner teachers mediated the relationship between teaching practices and secondary student learning. Using CHAT as a framework to analyze the MFE as an activity setting, we found that, through the use of mediating tools such as the structures of and the assignments associated with the MFEs, the object of activity shifted from secondary student learning to TC learning. This shift in the activity system worked to bridge the gap between the methods course work and field experiences. For example, in the language arts course, Alexa centered the MFE on the TCs' ability to build relationships with students in high-needs schools. The goal for relationship building was mediated through the structure and activities of the MFE, namely, by situating the MFE in an urban, high-needs school and by providing the TCs with several opportunities to interact with the students, partner teachers, and administration. The location and interactions with the students, partner teachers, and administrators became the mediating tools on which the TCs drew to learn how to develop relationships with students in high-needs schools. As the TCs increasingly became members of the classroom community, they had opportunities to get to know the middle school students and staff in ways that might have better supported their ability to, as Alexa

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said, “get students into” language arts. Thus Alexa, the partner teachers, and the administration mediated TC learning of building relationships with students from high-needs schools.

In the mathematics MFE, Casey, the methods instructor, said her goal was to shift the TCs’ understanding of what it means to teach and learn mathematics. She said she wanted the TCs to observe instruction different from the teacher-centered instruction they had experienced as mathematics learners and to support their investigation of ways in which students thought about mathematics concepts. The MFE was situated in classrooms where the partner teachers were implementing equity-oriented group work (Cohen & Lotan, 2014) and where students were expected to collaboratively explore mathematics and justify their ideas. In addition, the TCs met with the partner teachers after every observation, where the teachers reflected on their lesson and answered questions the TCs and instructors posed. The university instructors and partner teachers mediated the TCs’ learning through creating mediating tools, including observing equity-oriented teaching practices, close investigation of student discourse, student interaction during mathematics lessons, and access to the knowledge and skills of the partner teachers that were revealed during the debriefing sessions. These mediating tools were an important aspect of the MFE, as these tools served to shift the TCs’ initial conceptions about the teaching and learning of mathematics.

TC learning was also mediated across the other three content MFEs (see Table 1). In all cases, the university instructors participated in the field experiences, and in all cases, the TCs were provided opportunities to interact with students. In addition, the university instructors chose to situate all MFEs in urban school classrooms where the classroom teachers’ pedagogy aligned with the methods course instructors’ conceptions of effective teaching practice. In fact, the university and field were bridged through the MFEs in three ways: (a) alignment of university instructor and partner teacher pedagogy, (b) opportunities to practice the interactive aspects of teaching, and (c) drawing more intentionally on partner teacher knowledge. Each of these opportunities drew on mediating tools that placed the TCs as the object of the activity system of the MFE. In the following section, we describe how each of these aspects of the MFE worked to bridge the gap between university course work and the realities of the field.

Bridging the university and the field through the alignment of university instructor and partner teacher pedagogy. In our analysis, we found that, in addition to teaching in diverse urban schools, the partner teachers were chosen because their classrooms and teaching practices encompassed some of the critical pedagogical practices that were featured in the methods course. In all instances, the university instructors partnered with classroom teachers with whom they had previously established relationships, although these relationships were established in different ways. In some cases, the university instructor–partner teacher relation-

Table 1
Goals, Structures, and Mediation Across the Mediated Field Experiences

<i>Content</i>	<i>School level</i>	<i>University instructor's MFE goals</i>	<i>MFE structures (mediating tools)</i>	<i>Aspects of TC learning the university instructors and partner teachers aimed to mediate</i>	<i>No. visits/hours</i>
Science	high school	to develop a sense of how one coordinates multiple teaching practices; to learn from partner teacher knowledge; to bridge teacher preparation with working in schools	observations; eliciting students' scientific thinking; debriefing with partner teacher	listening to and eliciting students' scientific ideas	1/5
Social studies	middle school, high school	to develop adaptive expertise; to observe teaching unfold as a problem-solving process; to establish a shared text with partner teacher, TCs, and university instructor	observations; participating in secondary class; eliciting students' social studies thinking; debriefing with partner teacher	observing, teaching, and participating in a social studies lesson	2/6
World languages	middle school	to bridge TCs' real experiences with pedagogy	observations; planning with partner teacher; teaching lessons	observing, planning, and teaching world language	4/8
Mathematics	high school	to understand student thinking; to shift expectations for what qualifies as mathematical competence; to provide the teacher candidate with a vision of student-centered pedagogy	observations; one-on-one interviews with students; debriefing with partner teachers	develop new understanding of secondary students' competence in mathematics	7/21
Language arts	middle school	to support TCs to be comfortable working with urban, diverse students; to allow partner teachers and the principal to facilitate TC learning	observations; one-on-one literacy work with students; workshop sessions with partner teachers as instructors	understanding the importance of relational pedagogy	20/47

Note. MFE = mediated field experience; TC = teacher candidate.

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ship had been created because the partner teachers were graduates of the teacher education program (TEP) and had taken the methods course while enrolled in the program. In other instances, the partner teachers had received professional development from the university instructors or from the university.

Eduardo, the world languages university instructor, chose partner teachers who had graduated from the TEP. For Eduardo, a partnership with TEP graduates ensured a level of alignment between the university methods course and the field experience of the MFE. He said, “The teachers know me, and since they were all trained here, we have very similar ways of looking at pedagogy.” By partnering with teachers who had recently graduated from the TEP, Eduardo was able to work collaboratively with classroom teachers who understood the practices and goals he brought to the world languages methods course and were able to share similar ideas and practices.

The partner teachers of the mathematics MFE were asked to partner with the university instructors primarily because of the work they were doing to offer equitable teaching and learning opportunities for students. In addition, some of the teachers who participated in the MFE had recently participated in a multiyear grant that supported their teaching practice through professional development. Although the two partner teachers had varying types of experience using equity-oriented teaching practices, both were committed to supporting the TCs’ learning of these practices through observations in their classrooms.

Although some of the university instructors partnered with particular classroom teachers because of the alignment between their teaching practices, this was not the only reason. Alexa, the language arts university instructor, spent a number of years building a strong relationship with one principal and a few language arts teachers at a high-needs, urban middle school. As a result of this relationship, Alexa and the school’s principal collaboratively designed an MFE that would support Alexa’s goal of developing the TCs’ relational pedagogy.

To meet their individual goals and to connect the practices and principles of the methods course to the realities of the field, all university instructors partnered with teachers whose practices and school contexts supported the goals of the MFE. In field experiences that are typically disconnected from the course work of the university, the partner teacher’s classroom is often positioned as a place for TCs to apply the practices they learned in their methods courses. Partner teachers may not have experience using such pedagogies because the field placement or school context differs in what it means to be a competent teacher (Eisenhart et al., 1993; Valencia, Martin, Place, & Grossman, 2009). Because the partner teachers had a mutual interest in student-centered teaching and learning, the role of the teacher was repositioned from cooperating teacher to teacher educator. The partner teachers’ pedagogies became important mediating tools to support TCs’ learning, as they examined the relationship between teaching practices and secondary student learning.

Bridging university and field by practicing the interactive aspects of teaching. Research in the field of teacher education has revealed that TCs are often provided many opportunities in their teacher preparation course work to investigate and practice the preparatory and reflective elements of teaching. Yet the interactive elements of teaching are often left to field experiences (Grossman, Hammerness, & McDonald, 2009). TCs may have experiences in methods courses planning lessons, teaching lessons to their peers, and reflecting on the teaching of their lessons. We note that the interactive aspects of teaching, arguably the most difficult aspects to learn, are commonly left for the candidates' field experiences.

Some teacher preparation programs may give assignments that attempt to get at the interactive aspects of teaching while candidates are in the field. These assignments attempt to link the course work knowledge of teaching to the events that might take place in classrooms. However, when there is no one to mediate the assignment's implementation, the TCs may apply the university knowledge problematically, or they may not notice or make sense of particular features of the teaching practice that produce unexpected results.

The mathematics MFE assignment to interview students addressed the interactive aspects of teaching by providing TCs with an opportunity to investigate student thinking. It also became a mediating tool that placed TC learning at the center of the field experience. This assignment was designed to reveal that students often understand mathematics in ways that are different from what a novice teacher might assume. Before the interview, one of the TCs said he assumed that the student did not understand the concept of multiplying binomials. After interviewing this student and learning more about the way in which the content was taught by talking with the partner teachers, the TC realized that the student did have a strong conceptual understanding of multiplying binomials. The TC shared that, during the class session, "she just didn't use the terminology to which [I was] accustomed." By observing students engaging in mathematics activities while questioning the students about their mathematical understanding, followed by focused discussions with the partner teachers, the TCs were able to use the interview to experience what students understood about the mathematics. This example illustrates how participating in the interview portion of the MFE disrupted particular assumptions the TCs made about student understanding.

The language arts MFE provided TCs opportunities to build relationships with students. These activities became mediating tools to support TCs in relationship building. Because Alexa's goal was centered on relational pedagogy with students in high-needs schools, the TCs were provided opportunities to work closely with individual students during their language arts methods classes. Furthermore, because the TCs worked in the schools biweekly for 10 weeks, the TCs were able to interact with, get to know, and observe these same students several times over a relatively long time period, thus allowing the TCs to make personal connections with students.

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Bridging university and field by intentionally drawing on partner teacher knowledge. Drawing on a CHAT framework for examining teacher preparation as the interaction of multiple activity systems (Roth & Lee, 2007), we assert that partner teachers are often not included in the community component of the activity system of a methods course. Practitioner teacher knowledge is historically viewed as unimportant or irrelevant to what TCs must learn as part of campus course work. Likewise, during a typical field experience, the partner teacher is part of the classroom community but may not have the pedagogical knowledge to mediate TC learning as they move between the university and the partner teacher's classroom. Even when the partner teacher does possess knowledge of what a TC is learning in the university, the university instructor may not be aware of the partner teacher's practice and may be unable to connect the field experience back to practices and principles of the methods course. We found that the structures of the MFEs enabled both the university instructors and the partner teachers to become simultaneous members of the community of the MFE in ways that transformed TC learning.

In all cases, the MFEs in this study drew on partner teacher knowledge by providing the TCs opportunities to extensively interact with the partner teachers. In most cases, time was structured in ways that allowed the partner teachers time away from their secondary students to reflect on and debrief their lesson with the TCs. The teachers were the focus of the debriefing sessions, and through discussions facilitated by the university instructors, the TCs were able to hear from the partner teachers about how particular decisions in the lesson were made, what the partner teacher intended his or her students to learn, and what more the students needed to learn. The focused discussions during the lesson debriefings were significant opportunities for both the partner teacher and the university instructors to mediate TC learning.

Resolving the Contradictions in the Activity System

In this article, we argue that the MFEs at this university worked to bridge course work and fieldwork experiences by placing the TCs as the object of the activity system. We found that the MFE afforded the TCs opportunities to practice the interactive aspects of teaching through both alignment of learning-to-teach contexts and access to partner teacher knowledge. From a CHAT perspective, we conceptualize the MFEs as a way to address contradictions in field experience activity systems. By partnering with classroom teachers who implemented practices that were aligned with those of the methods course, the division of labor in the activity system shifted from a university-based hegemony to a more democratic division of labor between university knowledge and partner teacher knowledge. Rather than positioning the partner teacher's classroom as a place to apply newly acquired practices, the partner teachers were positioned as teacher educators, thereby resolving the contradiction between division of labor and the object of the

activity system. In each of the MFEs in this study, the TCs tried out a few teaching practices in a supportive context while receiving feedback from both the partner teacher and the university instructors. For example, in the mathematics MFE, the TCs practiced high-press questioning strategies (Kazemi & Stipek, 2001) with students as a way to uncover what the students understood about mathematics. MFEs across the program provided TCs with opportunities to work on the teaching practices that are often the most challenging to teach in a university methods course absent K–12 students.

The MFEs also worked to address the contradiction between community and object in the activity system of a field experience. In traditional field experiences, the university instructor is often unaware of the teaching practices taking place in the field and is unable to mediate what the TCs learn during the field experiences. In all of the MFEs in this study, the university instructors and the partner teachers were members of the same *community* of the activity system, giving TCs access to both university and practitioner knowledge. With the partner teachers as educators who could provide critical knowledge about the school, classrooms, students, and the interaction between teaching practices and these contexts, the TCs were able to more effectively draw on the classroom teachers' knowledge in significant ways. The MFE activities provided critical knowledge about students' learning that TCs need from field experiences but that is not often available. In this study, we found that a new activity system was created, one in which TC learning became the object of the activity, through the activities and structures of the MFEs as mediating tools, and that this new activity system transformed learning opportunities for TCs.

Conclusion

For the past few decades, teacher education has most often been modeled on university instructors first teaching theory and then sending TCs into the field to practice the theory they have learned. In this study, our findings indicate that each university instructor organized the MFE around TC learning while drawing on practitioner knowledge. TCs were provided opportunities to make sense of their university experiences within the context of an MFE. Although the university instructors in this study were driven by different goals about what they wanted their candidates to learn during field experiences, their goals created structures and activities that positioned the partner teachers as teacher educators and worked to bridge the course work–fieldwork gap through mediating theory and practice.

Drawing on CHAT, we have argued that the mediating tools in this study created an activity system in which TC learning became the object of the activity. Contradictions within the activity system of a typical field experience were mitigated through aligning the pedagogical focus of the two sites (university and classroom) and by providing the TCs opportunities to learn from the partner teachers. The innovative pedagogy of the methods courses at this university provided unique opportunities

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for TCs to engage with secondary students and teachers in their classrooms in ways that connected university course work and field experiences.

The logistics of designing and enacting an MFE are nuanced. In all cases, the methods instructors and partner teachers built trusting and, in some cases, long-standing relationships. In addition, the methods instructors described the need to be flexible because of the unpredictable nature of teaching and learning; they said they often modified what was mediated according to what happened during the observations. Although establishing relationships with teachers and schools is often logistically challenging, this study demonstrates the value of designing experiences in teacher education with TCs as the object of the activity system.

If teachers are to be prepared to meet the needs of the students in our country, teacher education needs ways to better connect TCs' university and school experiences (Zeichner, 2010). This study reports on the way one university responded to that call.

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Evidence of Reliability and Validity

By Hee-sook Choi, Nicholas F. Benson, & Nicholas J. Shudak

Since the National Council for Accreditation of Teacher Education (NCATE), now known as the Council for the Accreditation of Educator Preparation (CAEP), adopted its Standards 2000 that required “professional knowledge, skills, and dispositions necessary to help all students learn” for teacher candidates, literature has been replete with debates concerning the definition and assessment of professional dispositions (e.g., Burant, Chubbuck, & Whipp, 2007; Duplass & Cruz, 2010; Ruitenber, 2011; Welch, Pitts, Tenini, Kuenlen, & Wood, 2010). A by-product of the ongoing and contentious debates over the definition of dispositions is reflected in the subsequent revisions of the NCATE/CAEP standards (NCATE 2008 and CAEP 2013 Standards); that is, although NCATE/CAEP continues to incorporate the assessment of teacher candidates’ dispositions into its standards, it has gradually moved away from explicitly defining what dispositions are necessary for becoming an effective teacher. A case in point is that no glossary includes the term *professional dispositions* in its 2013 standards, a notable departure from the

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previous standards (see Appendix A for complete definitions included in the 2002 Edition Standards and 2008 Standards).

It is, then, no surprise that the definition of *dispositions* varies greatly among teacher education programs. It is up to individual teacher education programs to identify a set of dispositions they surmise to be critical for their candidates' success. The absence of a clear, universally accepted definition of what dispositions are, however, calls into question not only the assessment of dispositions but also the utility of assessing them. Critics contend that without definitional clarity, a reliable and valid method for measuring dispositions does not exist (Borko, Liston, & Whitcomb, 2007). So, then, is assessing dispositions nothing but a futile exercise for the sake of meeting the NCATE/CAEP requirements? Despite the "skepticism about the ability to assess dispositions as if they are comparable to skills and knowledge" (Duplass & Cruz, 2010, p. 144), and despite scant empirical data that dispositions can be assessed in a reliable and valid manner, all NCATE/CAEP accredited institutions continue to assess their teacher candidates' dispositions. Duplass and Cruz went on to say, "Whether dispositions can or cannot be defined or effectively assessed is apparently a moot point for NCATE, but it has left COEs [colleges of education] with the herculean task of implementing an ill-defined concept" (p. 144).

Dispositions Assessment in a Historical and Research Context

To understand what dispositions are or what a disposition might be, perhaps a first step is to juxtapose *dispositions* with two other words most commonly associated with dispositions: *knowledge* and *skills*. The field of teacher education has long held that there are ways to assess the identifiable, relevant, and important skills and knowledge necessary for teaching. Though content and pedagogical skills tests have experienced multiple iterations, overall they are considered reliable and valid, and some version of a content and skills test exists in every state for certification purposes. However, dispositions have been more difficult to define, let alone to assess validly and reliably. According to NCATE (2008), we can understand dispositions as those "professional attitudes, values, and beliefs demonstrated through both verbal and nonverbal behaviors as educators interact with students, families, colleagues, and communities" (p. 89). In other words, dispositions are those internal conditions (attitudes, values, beliefs, thoughts, etc.) that influence our external behaviors (actions and interactions with students and others). Historically, the struggle has been concerned with whether those internal conditions are naturally endowed, whether they can be implanted, and whether they can be shaped if endowed or implanted. After all, if dispositions cannot be shaped, then how teacher education programming promotes them, let alone assesses them, would be drastically impacted.

Arguably one of the first to struggle philosophically with something akin to dispositions was Plato. Perhaps most famously in *The Republic*, Plato (1991, pp. 124–125), through Socrates, argues for the necessity of a noble lie as a hypothetical

starting point to ordering the State. Through this lie, Socrates frames an argument for how best to order the soul of the State and the souls of its citizens. It is an argument for determining who gets to do what—rulers, guardians, artisans—within the State by having the founders of the State identify citizens who “God has framed”—or disposed—to serve in one way over others (i.e., identifying those who get to teach). More clearly, however, dispositions become evident in Socrates’ allegory of the cave (Plato, 1991, pp. 253–261). Through the allegory, Socrates broaches the possibility that certain “natures” can be put into one’s soul, that they can be circumcised from a soul, or that there is a process, or an art, by which to turn a soul from one direction and toward another—a process that might be painful yet necessary. But if we are to think of dispositions as a kind of virtue, it is in Plato’s *Meno* (Plato, 1984) that Socrates struggles over whether virtue can be taught or if it is simply something with which a person is born.

In looking at dispositions as virtue, and in questioning the assessability of dispositions, educational philosopher Douglas McKnight would have us consider the work of Aristotle. According to McKnight (2004),

Aristotle defined the term disposition as the nature of virtue or vice in relation to the agent and the possession of a particular frame of mind in any given ethical or moral situation. [Aristotle] explained [that] a disposition is one thread in a highly complex and pervasive ethical existence that begins with a child being inculcated into virtuous habits as defined by a community. (p. 214)

It is the lengthy process through which and the environment in which virtue is inculcated that gave McKnight pause as to the viability of assessing and even adjusting dispositions through college course work. Something developed over a lifetime cannot be changed over the course of a few semesters.

To give clearer insight into Aristotle’s construction of dispositions and the concern about adjusting them, McKnight relied on the work of scholar Sarah Broadie. According to Broadie (as quoted in McKnight, 2004),

a virtuous person is one who is such as to, who is disposed to, act well when occasion arises. And so far as ‘acting well’ implies not merely causing certain changes in the world, but doing so in the right frame of mind or with right motive, a disposition to act well is also a disposition to act in the right frame of mind. (p. 220)

As dispositions are possibly understood as “deeply rooted habits of thought and feelings” (p. 214) developed over a lifetime, they are not things easily dug up, displaced, or changed. Thus the project to assess, guided by the understanding that dispositions can be changed or adjusted, is very problematic, misguided, and even too late. For McKnight, the better proposition is to study dispositions rather than to assess them.

Bringing things into the 20th century, the work of Dewey and Combs informs. For Dewey (1922), the profit of education is the habits of mind that develop over time, in particular, the habit to engage in discriminating inquiry and action that thus

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impel people to make right decisions within a given democratic context. For Dewey (1938/1997), educative experiences, as opposed to those miseducative experiences, align the interaction between what one thinks (internal) is right and what one does (external) that is right. Dewey's concern was with an entire pedagogical way of being in schools and society, which is analogous to our contemporary conversations about dispositions. For Dewey, these habits and alignments are transmissible through a carefully crafted environment.

Several years later, Arthur Combs and a team of psychologists engaged in a series of studies regarding those personal "perceptions" that might make someone a more effective teacher. The five categories Combs and his team identified are quite salient to our current concerns with dispositions. According to Combs et al. (1969), the five perceptions are of self, others, one's subject field, the purpose and processes of education, and a general category. Combs's study into perceptions was essentially a concern about how what one thinks as a teacher influences what one does as a teacher. Similarly to Dewey, it is a concern that links thinking with doing and a belief that thoughts and actions are adjustable, even if naturally endowed.

More contemporarily, and on a conceptual level, Jung and Rhoades (2008) challenged teacher educators to think differently about dispositions prior to any concerns with assessing them. According to Jung and Rhoades, "the task of evaluating and determining teacher dispositions in teacher education has not been easy due to conceptual and technical complications" (p. 649). To make dispositions assessment more valid and reliable, Jung and Rhoades challenged teacher educators to become clearer as to what they really want to assess. For example, in their view, teacher education has inordinately focused on dispositions as "character-related," even though many programs are becoming more and more "competency-related" (p. 647). The difference between the two orientations is the difference between finding how comfortable candidates feel about differentiation in classrooms and finding how competently candidates enact differentiation in classrooms. Clarifying what they refer to as character- versus competency-related dispositions will help determine the type of programming one needs and the types of assessments used throughout, giving teacher educators a more valid and holistic look at their candidates.

Brewer, Lindquist, and Altemueller (2011) studied whether candidates identified as having problematic dispositions can improve on them through an intervention process. Through qualitative methodology, and using an intervention they called the "Professional Dispositions Qualities: Preparing Reflective and Effective Practitioners" process, the authors found that candidates with problematic dispositions (e.g., resistance to feedback and correction and unwillingness to collaborate professionally with colleagues) can improve on their problematic dispositions after following the intervention. The authors did admit, however, that "not all individuals are as capable or motivated as our case examples" (p. 65), putting into question the validity of their intervention. If a candidate does not improve, is it because the intervention was not valid, because the candidate truly is unredeemable dispositionally, or because the

programming was not good and thus the intervention was necessary? Borrowing again from Jung and Rhoades (2008), it does appear that Brewer et al. (2011) were concerned with demonstrable competency-related dispositions evidenced in teaching contexts. The question the study does not address is whether those dispositions were intentional components of the teacher education programming.

According to Cummins and Asempapa (2013), choosing education as a major and choosing teaching as a career are seemingly indicators that a candidate is already disposed toward teaching. If that premise is true, as Cummins and Asempapa seemed to believe it is, then “dispositions can be viewed like other professional skills, mainly observable behaviors that are intentional and applied within an educational setting, [and] they can be taught and supported by educational experiences” (p. 105). To that end, Cummins and Asempapa conducted a qualitative study coupled with pre- and posttest analyses to examine whether teacher candidates’ knowledge and understanding of the dispositions of professionalism, collaboration, and inclusion can be altered through teaching interventions in a course. Though some growth in all three dispositions was evidenced, results from the pre- to postassessment were statistically insignificant. Thus one of the questions the researchers left with the reader was whether they could have done a better job adjusting content after the pretests in light of the fact that some students came in with higher levels of knowledge and understanding of some dispositions (professionalism) over others (collaboration and inclusion). Though the results were not statistically significant, the authors were cautiously optimistic that growth through course work is possible.

Echoing Brewer et al. (2011), and though dispositions are only a recent accreditation requirement for teacher education programming, “dispositions are not a new research topic in the field of education. . . . [They have] been researched for many years with questionable outcomes” (p. 52). As the preceding review indicates, the discourse’s concern with the internal quality of a person, with his or her affective and cognitive attributes that might influence or impact the external actions the person takes and the interactions he or she has in classrooms with students, is an ancient one. In other words, this is something that is seemingly eternal and with enduring importance; thus teacher education needs to continue taking it seriously, as our study does.

Statement of the Problem

Our teacher education program has used a dispositions measure since the inclusion of professional dispositions in the NCATE Standards 2000. It has gone through revisions, the latest of which took place shortly after the publication of the NCATE 2008 Standards. The 2008 Standards stipulate that other than “fairness and the belief that all students can learn,” professional education units can “identify, define, and operationalize additional professional dispositions” in accordance with “their mission and conceptual framework” (p. 89). Similar to the procedures used

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for assessing candidate dispositions by other professional education units (e.g., Almerico, Johnston, Henriott, & Shapiro, 2011), our teacher education program identified a set of six dispositions based on a review of related literature and a series of faculty input: responsibility, respect, integrity, caring/humanity, fairness, and the belief that all students can learn.

The current study is an attempt to inform professionals, such as university trainers and field-based supervisors, as to the utility of professional dispositions assessment as a means of gauging teacher candidate success in their professional roles. According to the *Standards for Educational and Psychological Testing (Standards; American Educational Research Association, American Psychological Association, & National Council of Measurement in Education, 2014)*, test users must select measures that accurately reflect the measurement targets of interest and have validity for intended purposes. Are supervisors' ratings of professional dispositions supported by reliability and validity evidence? Do dispositions make a difference in practice? To address these questions, we examined evidence for reliability such as internal consistency, stability, and interrater agreement. To this end, we explored the structure of our dispositions rating form as to its consistency with its intended structure. We also examined whether these dispositions are measured consistently across raters and time. Finally, criterion-related evidence for validity was examined by correlating teacher candidate disposition ratings with teaching effectiveness, which was measured by direct observation of their levels of student engagement.

Method

Participants

Participants included all teacher education candidates enrolled during a fall semester ($N = 147$) at a rural, midwestern university. Of those, the students of 53 candidates were also observed to measure their levels of engagement while the candidate led the class. Demographic information for the participants is presented in Table 1.

Table 1
Descriptive Statistics for the Total Sample and the Student Engagement Subsample

Sample	Age, M (<i>SD</i>)	Sex, %F	Race and ethnicity				
			%W	%B	%H	%API	%O
Total ^a	24.6 (4.5)	70.7	95.2	0.7	1.4	1.4	1.4
Subsample ^b	23.85 (2.78)	83.0	90.6	0.0	3.8	1.9	3.8

Note. API = Asian or Pacific Islander; B = Black; F = female; H = Hispanic; O = other; W = White.

^a $N = 147$.

^b $n = 53$.

Instrumentation

The teacher education dispositions rating form consists of 19 items completed by university and field supervisors (see Appendix B). The items are rated on a 3-point scale ranging from 1 (*below expectations*) to 3 (*exceeds expectations*). This form was designed to measure the following six professional dispositions: responsibility, respect, integrity, caring/humanity, fairness, and the belief that all students can learn. The rating form is essentially a rubric consisting of four items each for responsibility, respect, and integrity. Caring/humanity comprises three items, and there are two items each for fairness and belief that all students can learn. For example, one of the responsibility items defines “does not identify or complete needed tasks without specific direction” as below expectations (1), “identifies and completes needed tasks with little or no direction” as meets expectations (2), and “demonstrates leadership and takes initiative in identifying and completing tasks” as exceeds expectations (3). Descriptive statistics, along with the percentage of missing data for each item, are presented in Table 2. These data represent ratings provided by university supervisors.

Student engagement was assessed using the Behavioral Observation of Students in Schools (BOSS; Shapiro, 2010). Descriptive statistics, along with the percentage of missing data for BOSS variables, are presented in Table 2. The BOSS measures two categories and five subcategories of behavior within the classroom environment. The first major category is academic engagement, which is split into two subcategories: (a) active engaged time (AET) and (b) passive engaged time (PET). AET is coded when a student is actively engaged in academic responding (e.g., reading aloud, making appropriate verbal comments, writing responses to classwork assignments), and PET is coded when a student appears to be passively engaged with instruction (e.g., listening to instruction, looking at relevant instructional stimuli). The second major category is nonengagement, which is split into three subcategories corresponding to the form of responses that appear to be incompatible with academic engagement: (a) off-task motor (OFT-M), (b) off-task verbal (OFT-V), and (c) off-task passive (OFT-P).

AET and PET are scored using momentary time sampling and are coded if responses corresponding to these categories are displayed at the beginning of a 15-second interval. OFT-M, OFT-V, and OFT-P are coded during the remainder of the 15-second intervals using the partial interval method. Evidence exists to support using the BOSS as a measure of academic engagement in classroom settings (Volpe, DiPerna, Hintze, & Shapiro, 2005). Notably, the BOSS was designed for observations that focus on a target student and a comparison peer. We modified administration procedures for our study so that a different student was observed at every interval. Observers were instructed to track students clockwise and code a different student every interval, coding the same student twice only after every student had been observed. As our goal was to assess teacher candidates' ability to

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engage students, this modification was made to improve sampling and minimize the effects of internal student variables. We believe this modification helped ensure that observations reflected the extent to which the teacher candidates generally engaged students in academic learning.

Setting for BOSS Observations

BOSS observations were conducted within K–12 classrooms, each with eight or more K–12 students. Observations were arranged by a graduate assistant who was responsible for coordinating these observations, with the goal of selecting a random sample of teacher candidates.

Table 2
Descriptive Statistics for Dispositions Ratings
and Behavioral Observation of Students in Schools Variables

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Sk (<i>SE</i>)	Ku (<i>SE</i>)	% Miss
Q1	147	2.61	.50	-0.60 (0.20)	-1.26 (0.40)	0
Q2	147	2.69	.46	-0.85 (0.20)	-1.30 (0.40)	0
Q3	147	2.61	.52	-0.75 (0.20)	-0.75 (0.40)	0
Q4	146	2.55	.55	-0.71 (0.20)	-0.56 (0.40)	1
Q5	146	2.56	.50	-0.25 (0.20)	-1.96 (0.40)	1
Q6	147	2.47	.51	-0.03 (0.20)	-1.64 (0.40)	0
Q7	147	2.40	.49	0.42 (0.20)	-1.84 (0.40)	0
Q8	145	2.62	.49	-0.50 (0.20)	-1.77 (0.40)	1
Q9	147	2.74	.47	-1.46 (0.20)	1.05 (0.40)	0
Q10	147	2.73	.45	-1.04 (0.20)	-0.94 (0.40)	0
Q11	147	2.45	.50	0.22 (0.20)	-1.97 (0.40)	0
Q12	145	2.62	.49	-0.50 (0.20)	-1.77 (0.40)	1
Q13	147	2.59	.49	-0.38 (0.20)	-1.88 (0.40)	0
Q14	147	2.54	.50	-0.15 (0.20)	-2.00 (0.40)	0
Q15	147	2.61	.50	-0.62 (0.20)	-1.22 (0.40)	0
Q16	147	2.57	.51	-0.44 (0.20)	-1.43 (0.40)	0
Q17	147	2.41	.53	-0.03 (0.20)	-1.12 (0.40)	0
Q18	147	2.49	.50	0.06 (0.20)	-2.02 (0.40)	0
Q19	147	2.51	.50	-0.06 (0.20)	-2.02 (0.40)	0
AET	53	41.45	23.10	0.36 (0.33)	-0.75 (0.64)	0
PET	53	39.99	20.06	-0.01 (0.33)	-0.37 (0.64)	0
TET	53	81.44	11.30	-0.50 (0.33)	-0.04 (0.64)	0
OFT-M	53	8.30	6.31	0.77 (0.33)	-0.05 (0.64)	0
OFT-P	53	7.52	7.48	0.67 (0.33)	-0.77 (0.64)	0
OFT-V	53	5.65	4.74	1.26 (0.33)	1.85 (0.64)	0
TOT	53	21.47	12.86	0.25 (0.33)	-0.77 (0.64)	0

Note. AET = active engaged time; OFT-M = off-task motor; OFT-P = off-task passive; OFT-V = off-task verbal; PET = passive engaged time; Q = question from the dispositions rating form; TET = total engaged time; TOT = total off-task.

Procedure

Using the dispositions rating form, both university and field supervisors rated their student teachers twice: at midterm and then at the end of the semester. The form was administered through the teacher education program's online student tracking system. Evaluations for various field experiences, including the dispositions rating form, are administered through this online database.

BOSS observations were 30 minutes in duration, consisting of 120 15-second intervals. Coding was completed by seven observers with classroom teaching experience who were hired by the teacher education program to serve as university supervisors for teacher candidates. These observers did not conduct observations on teacher candidates they were personally supervising. All observers attended a 1-hour training session covering the BOSS administration and scoring procedures, and all observers were asked to rate a video immediately following training. Interclass coefficients (ICC; Shrout & Fleiss, 1979) were calculated to examine interrater reliability. A two-way random effects model was used because all raters rated the same video and the behavior of students in the video was viewed as a random sample of behavior rather than as a fixed effect. ICC coefficients for BOSS scores ranged from .88 for ratings of academic engagement to .95 for OFT-V. These results suggest that raters understood the criteria for coding behaviors specified in the BOSS manual and produced reliable ratings across raters.

Data Analysis

Confirmatory factor analysis was conducted using Mplus Version 7.11 (Muthén & Muthén, 1998–2012). Because students start their programs of study at different times, some teacher candidates in our sample completed their student teaching experience in the fall, whereas others completed their student teaching experience in the spring. Thus not all teacher candidates received ratings for both the fall and spring semesters. A combined file ($N = 147$) consisting of ratings from the fall and spring was used for the CFA. For students who had ratings from both semesters, the spring rating was used. Raw scores for each of the 19 items were used as input. The weighted least squares with mean and variance adjustment (WLSMV) estimation method was used because dispositions are rated on a 3-point scale. However, estimates of skew and kurtosis are not reflective of severe issues with nonnormality. Missing data were addressed by using full-information maximum likelihood estimation, a preferred approach for addressing missing data (Enders, 2010; Schafer & Graham, 2002).

Model comparisons were used to determine the best fitting structural model for the professional dispositions rating form. As we used WLSMV estimation, a robust chi-square difference test ($\Delta\chi^2$) was used when comparing models. We also used the following measures of fit and criteria: (a) chi-square (χ^2 ; statistically nonsignificant values), (b) the comparative fit index (CFI; $>.95$), and (c) the root mean square error of approximation (RMSEA; $<.05$).

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A bifactor modeling approach was used to allow for simultaneous examination of (a) the direct effects of a general dimension on each of the 19 items and (b) the direct effects of the six specific dispositions on the items intended to measure them. Bifactor models posit that there are two systematic and direct influences on test scores (Gignac, 2008; Reise, 2012). The use of a bifactor model allowed us to compare the relative importance of general versus specific effects on items. We conducted comparisons of nested models to test the structure of the dispositions rating scale. This involved sequentially removing latent disposition variables from the model to determine if their removal caused model fit to degrade. If the removal of a latent variable did not degrade model fit, as indicated by a statistically significant $\Delta\chi^2$, then the latent variable was considered to be superfluous.

The use of a bifactor model also allowed us to examine the model-based reliability of the general dimension as well as the six specific dispositions. Reliability was examined using coefficient omega total (ω_T ; Lucke, 2005; Revelle & Zinbarg, 2009), which accounts for all common sources of variance; omega hierarchical (ω_H ; Reise, 2012), which accounts for variance from the general dimension; and omega subscale (ω_S ; Reise, 2012; Zinbarg, Yovel, Revelle, & McDonald, 2006), which accounts for variance attributable to specific dispositions. These omega indexes are calculated by placing construct-relevant variance in the numerator and construct-relevant variance plus error in the denominator. When more than one factor has direct effects on items, omega indexes provide more accurate estimates of reliability than do traditional methods of estimating reliability, such as coefficient alpha.

In addition to examining the structure of the dispositions rating form, reliability was examined across time and rater. A subsample of participants ($n = 102$) had disposition ratings completed at midterm as well as at the end of the semester. Items were summed to create disposition composites. Pearson correlation coefficients were obtained using SPSS Version 21 to estimate the stability of ratings for each disposition composite as well as a composite score derived by summing all 19 items. Teacher candidates who were on student teaching assignments ($n = 82$) had ratings from both a field-based supervisor and university supervisor that were completed at the end of the same semester. Pearson coefficients were obtained using SPSS Version 21 to estimate interrater reliability.

Finally, the percentage of time K–12 students were academically engaged (i.e., coded as AET or PET) or nonengaged (i.e., coded as OFT-M, OFT-V, or OFT-P) was calculated by dividing the number of intervals coded by 120. These percentages, which reflect BOSS ratings for teacher candidates obtained in the fall semester of their student teaching experience, were correlated with disposition variables. This allowed us to examine if dispositions are related to teaching performance.

Results

As shown in Table 3, a model that included a general dimension and six pro-

fessional dispositions (Model A) fit the data reasonably well. Removing the latent general dimension (Model B) caused the model to fit poorly. Model fit also degraded, as evidenced by a statistically significant $\Delta\chi^2$, with the latent caring/humanity (Model G) and responsibility (Model H) variables removed. Thus Model F, which is presented in Figure 1, provided the best fit to the data. This model includes a general dimension as well as the caring/humanity and responsibility dispositions. As shown in Table 4, the general dimension had strong effects on all items, whereas the effects of specific dispositions were modest.

Examination of omega estimates presented in Table 5 suggests that a total score derived by summing ratings across all 19 items has high internal consistency. Moreover, almost all of the reliable variance in the total score can be accounted for by a general dimension. The responsibility and caring/humanity dispositions were also found to have high internal consistency, as indicated by high ω_T values. However, as indicated by ω_H estimates that exceed .8, the bulk of variance in these specific dispositions is accounted for by the general dimension. Small ω_S values indicate that only small proportions of reliable, specific variance are uniquely attributable to the six dimensions. In other words, most of the covariance among rating scale items is accounted for by the common variance attributable to the general dimen-

Table 3
Fit of Alternative Structural Models

Model	χ^2 (df)	<i>p</i>	$\Delta\chi^2$ (df)	<i>p</i>	CFI	RMSEA (90%CI)
A. General dimension + 6 dispositions	178.15 (136)	<.01	–	–	.996	.046 (.024–.064)
B. Model A minus general dimension	9551.97 (155)	<.01	4107.556 (19)	<.01	.154	.642 (.631–.653)
C. Model A minus BACCL	178.78 (137)	<.01	0.69 (1)	.41	.996	.046 (.024–.063)
D. Model C minus fairness	180.32 (138)	<.01	2 (1)	.16	.996	.046 (.024–.063)
E. Model D minus respect	183.21 (142)	.01	3.17 (4)	.53	.996	.044 (.022–.062)
F. Model E minus integrity	184.97 (145)	.01	4 (3)	.26	.996	.043 (.021–.061)
G. Model F minus caring/humanity	192.99 (148)	<.01	11.57 (3)	<.01	.996	.045 (.025–.062)
H. Model F minus responsibility	219.91 (149)	<.01	32.42 (4)	<.01	.994	.057 (.04–.072)

Note. BACCL = belief that all children can learn; CFI = comparative fit index; RMSEA = root mean square error of approximation.

Assessment of Teacher Candidate Dispositions

sion, and the results suggest that there is not sufficient reliable, specific variance to discriminate among six dimensions.

Test–retest and interrater reliability estimates are presented in Table 6. Results indicate that only responsibility and the composite score were rated somewhat consistently across time. Although some correlations were statistically significant, all interrater reliability estimates were small. Thus ratings obtained from field-based supervisors do not correspond well with ratings obtained from university supervisors. Finally, as shown in Table 7, none of the disposition variables, including the disposition total, correlated significantly with student engagement. Thus disposition ratings do not appear to predict the ability to engage students in the classroom.

Discussion

By and large, a one-factor model best explains the internal structure of our dispositions rating form, coupled with high internal consistency. Although responsibility and caring/humanity explain a nontrivial amount of variance, these factors do not have sufficient reliable, unique variance to support interpretation.

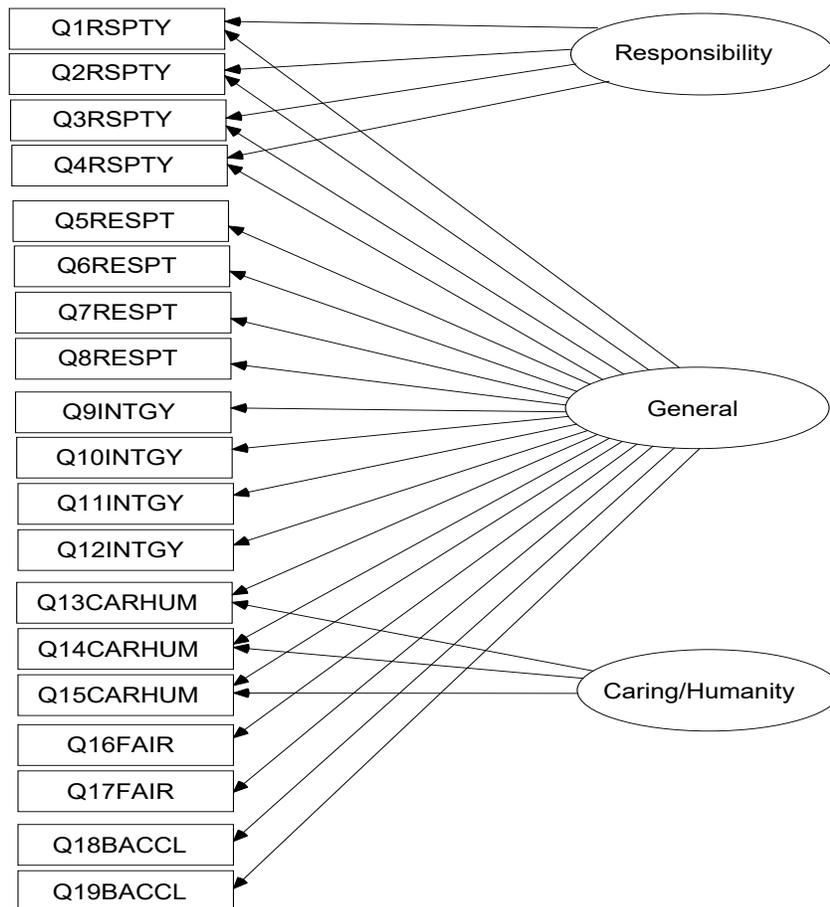
Table 4
Standardized Factor Loadings for Model C

Item	General dimension	Responsibility	Caring/humanity
Q1_Responsibility	0.72	0.30	–
Q2_Responsibility	0.82	0.08	–
Q3_Responsibility	0.90	0.35	–
Q4_Responsibility	0.82	0.57	–
Q5_Respect	0.87	–	–
Q6_Respect	0.90	–	–
Q7_Respect	0.84	–	–
Q8_Respect	0.88	–	–
Q9_Integrity	0.94	–	–
Q10_Integrity	0.90	–	–
Q11_Integrity	0.93	–	–
Q12_Integrity	0.98	–	–
Q13_Caring/humanity	0.88	–	0.30
Q14_Caring/humanity	0.88	–	0.18
Q15_Caring/humanity	0.81	–	0.48
Q16_Fairness	0.98	–	–
Q17_Fairness	0.84	–	–
Q18_Belief that all children can learn	0.90	–	–
Q19_Belief that all children can learn	0.93	–	–

Note. Q = question from the disposition rating form.

Moreover, the results of this study do not support the two dispositions, “fairness” and “belief that all students can learn,” required by the NCATE 2008 Standards to be separate and distinct from the others. Evidence for test–retest reliability was generally weak, with the exception of responsibility, whereas evidence for inter-rater reliability was poor. These findings suggest that conceptualizing dispositions to be a single, global dimension, rather than a set of distinguishable dimensions, may be a good starting point when developing a dispositions measure. The next step is to determine what dispositions signify within the context of teacher education programs and to define them in behavioral terms for assessment. To ensure that the specified dispositions are assessed reliably across time and raters, focus

Figure 1
Bifactor model with a general dimension and two specific dispositions (Model F).



Assessment of Teacher Candidate Dispositions

should then be given to training university and field supervisors as to how to use the rating form with consistency.

More importantly, the results of this study indicate that dispositions ratings may not be good predictors of effective teaching. One important and observable

Table 5
Omega Estimates Based on Model C

Disposition	ω_H	ω_S	ω_T
General dimension	.98	.01	.99
Responsibility	.81	.13	.94
Caring/humanity	.83	.12	.94

Note. ω_H = omega hierarchical; ω_S = omega subscale; ω_T = omega total.

Table 6
Pearson Correlations Reflecting Test–Retest and Interrater Reliability for Professional Dispositions Ratings

Disposition	Test–retest	Interrater
Responsibility	.85**	.28*
Respect	.46**	.25*
Integrity	.44**	.19
Caring/humanity	.32**	.17
Fairness	.50**	.24*
BACCL	.43**	.17
Composite	.67**	.27*

Note. BACCL = belief that all children can learn.

*Correlation is significant at the .05 level. **Correlation is significant at the .01 level.

Table 7
Pearson Correlations Between Professional Dispositions and Behavioral Observation of Students in Schools Variables

	Responsibility	Respect	Integrity	Caring/ humanity	Fairness	BACCL	Disposition total
AET	.07	.16	.08	.05	.15	.20	.13
PET	-.06	-.09	-.05	-.05	-.13	-.15	-.09
TET	.04	.16	.08	.00	.08	.14	.09
OFT-M	.07	.04	.08	.15	-.07	-.10	.05
OFT-V	-.29*	-.25	-.26	-.13	-.23	-.24	-.28*
OFT-P	.09	.09	-.02	.23	.17	.01	.11
TOT	-.02	-.02	-.07	.16	-.02	-.13	-.02

Note. AET = active engaged time; BACCL = belief that all children can learn; OFT-M = off-task motor; OFT-P = off-task passive; OFT-V = off-task verbal; PET = passive engaged time; TET = total engaged time; TOT = total off-task.

component of effective teaching is the ability to engage students in learning tasks. Student engagement is frequently viewed as a means of increasing academic achievement and reducing problems like student boredom, alienation, and dropout (Fredricks, Blumenfeld, & Paris, 2004). Moreover, student engagement in learning is strongly correlated with academic achievement (Graden, Thurlow, & Ysseldyke, 1982). Our results indicate that there is no significant correlation between our teacher candidates' dispositions ratings and their ability to engage students in learning.

Given the continued debate over how to define dispositions, let alone how to assess them, our results beg the question, Is it necessary to assess something as elusive as dispositions? All NCATE/CAEP accredited institutions routinely assess their teacher candidates' dispositions multiple times during their field experiences. This has been an accepted practice even though there is a lack of a clear understanding of the necessary dispositions associated with teaching. What is truly disconcerting is that the dispositions we identified to be germane to teaching effectiveness (i.e., responsibility, respect, integrity, and caring/humanity) are fairly common and can be found in many institutions' dispositions instruments.

Overall, the findings of this study appear to support the skepticism regarding the assessment of dispositions in the teacher education field (e.g., Borko et al., 2007). Our findings challenge the utility of assessing dispositions; that is, unless the term *dispositions* is clearly understood and defined, it cannot be reliably and validly assessed. The ostensible lack of validity evidence to support the interpretation of scores derived from measures of professional dispositions is concerning, as evidence is needed to establish the objectivity and fairness of such measures given that they are commonly used to evaluate teacher candidates. As previously noted, the *Standards* (American Educational Research Association et al., 2014) clearly state that test users must select measures that accurately reflect the measurement targets of interest and have validity for intended purposes.

Our study does, of course, have limitations. Our sample comprised primarily White women in a rural setting in the northern plains region of the United States. Though the sample set is of a good size ($N = 147$), the teacher education candidates who were a part of this research are largely the same "type" of student. Perhaps a more demographically diverse set would provide different research results. Furthermore, and what might be a limitation of many teacher education programs in general, there was little consistency in terms of teaching about the particular professional dispositions on which the candidates were going to be assessed. In other words, the six dispositions being assessed were not programmatically embedded or developmentally taught throughout the candidates' programs. This is not to say that they were never a part of the candidates' course work and/or fieldwork; rather, it is to say that if teacher education candidates are going to be assessed on something in any kind of a high-stakes way, then that thing—dispositions—should be clearly and continuously found in course work and fieldwork. There is a lesson to be learned from this, too: Should dispositions be worth assessing, they must be

worth teaching about or developing in some programmatic way. And as intimated earlier, definitions in this regard will matter.

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Appendix A

NCATE Definitions of Dispositions

2002 Edition Standards

The values, commitments, and professional ethics that influence behaviors toward students, families, colleagues, and communities and affect student learning, motivation, and development as well as the educator's own professional growth. Dispositions are guided by beliefs and attitudes related to values such as caring, fairness, honesty, responsibility, and social justice. For example, they might include a belief that all students can learn, a vision of high and challenging standards, or a commitment to a safe and supportive learning environment. (p. 53)

2008 Standards

Professional attitudes, values, and beliefs demonstrated through both verbal and nonverbal behaviors as educators interact with students, families, colleagues, and communities. These positive behaviors support student learning and development. NCATE expects institutions to assess professional dispositions based on observable behaviors in educational settings. The two professional dispositions that NCATE expects institutions to assess are fairness and the belief that all students can learn. Based on their mission and conceptual framework, professional education units can identify, define, and operationalize additional professional dispositions. (p. 89)

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Appendix B
Dispositions Rubric

	Below expectations (1)	Meets expectations (2)	Exceeds expectations (3)
RESPONSIBILITY	__1. Is not alert and/or present at designated teacher hours	__1. Is alert and present at designated teacher hours	__1. Spends additional time at school planning, preparing, and evaluating
	__2. Does not maintain professional dress and appearance according to district/school standards & or wears jeans	__2. Typically professional, appropriate, dress and appearance (according to district/school standards for spirit wear)	__2. Always maintains professional, appropriate, dress and appearance
	__3. Does not identify or complete needed tasks without specific direction	__3. Identifies and completes needed tasks with little or no direction	__3. Demonstrates leadership and takes initiative in identifying and completing tasks
	__4. Does not complete tasks in a timely manner	__4. Completes assigned tasks in a timely manner	__4. Always completes tasks in a timely manner
RESPECT	__5. Does not maintain positive communication	__5. Speaks positively of self and others	__5. Speaks positively resulting in motivation of others
	__6. Does not follow school and/or university policies and procedures	__6. Follows school/university policies and procedures	__6. Follows school/university policies and procedures, providing leadership in those areas
	__7. Does not respond appropriately to diverse student populations	__7. Uses curriculum available and provides instruction in a manner that does not hinder learning for diverse populations, responds appropriately to cultural norms	__7. Honors diversity by purposively seeking out resources to enhance the learning of diverse populations
	__8. Does not accept constructive feedback	__8. Accepts/integrates constructive feedback	__8. Seeks constructive feedback
INTEGRITY	__9. Cannot be trusted, is not truthful	__9. Is truthful	__9. Can be trusted to be honest
	__10. Does not maintain confidentiality	__10. Maintains confidentiality with minimal prompting	__10. Maintains confidentiality in a manner that is consistent with professional, ethical, and legal standards
	__11. Frequently takes credit for others' ideas	__11. Acknowledges sources of ideas both written and spoken	__11. Provides formal reference list to acknowledge sources of ideas
	__12. Rude, abrasive, or dismissive in professional interactions	__12. Often implements plans as intended when collaborating with other professionals	__12. Consistently implements plans as intended when collaborating with other professionals

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	Below expectations (1)	Meets expectations (2)	Exceeds expectations (3)
CARING/HUMANITY	<p>__13. Does not foster positive interactions in the classroom</p> <p>__14. Is not approachable; P-12 students often avoid interaction with teacher candidate</p> <p>__15. Uses students' names</p>	<p>__13. Fosters positive interactions in the classroom</p> <p>__14. Is approachable; P-12 students seek teacher for academic help with teacher candidate</p> <p>__15. Converses with students daily on personally meaningful topics</p>	<p>__13. Contributes toward building a community of learners</p> <p>__14. Is approachable; P-12 students approach teacher candidate for academic help and social guidance</p> <p>__15. Acknowledges and supports students as individuals through conversations</p>
FAIRNESS	<p>__16. Follows school rules for managing behaviors inconsistently</p> <p>__17. Does not provide differentiated instruction</p>	<p>__16. Applies school rules consistently</p> <p>__17. Provides differentiated instruction for most learners most of the time</p>	<p>__16. Applies school rules; student displays trust that teacher applies rules consistently</p> <p>__17. Consistently plans for and provides effective and varied differentiated instruction equitably</p>
BELIEF ALL STUDENTS CAN LEARN	<p>__18. Does not encourage and motivate all students</p> <p>__19. Fails to maintain high expectations for all student</p>	<p>__18. Encourages and motivates all students</p> <p>__19. Maintains high expectations for all students</p>	<p>__18. Helps students build intrinsic motivation for learning (evidenced by increased student self-monitoring or self-motivation to learn)</p> <p>__19. Communicates consistent high expectations for all students</p>

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Content of the Proposal: Include the following: A brief overview of the study/project/program session including purpose/objectives, theoretical framework, methods, data source, results/conclusions/points of view, and significance to the field of teacher education. Indicate clearly whether the proposal is for a presentation format, a roundtable discussion format, or an interactive format, and describe how the format will be carried out.

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Questions: Questions may be addressed to the chair of the CCTE Research Committee: Laurie Hansen, via e-mail at: lahansen@fullerton.edu

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